



CITY OF **DOUGLAS** WYOMING

**REGULAR CITY COUNCIL MEETING
October 28, 2024 – 4:00 PM**

Thank you for your cooperation in facilitating the public meeting process!

Reasonable accommodations for persons with disabilities who wish to participate in this public meeting shall be made upon request to the City Manager, at 307-358-3462

Council meetings are broadcast live on Cable Channel 9 and streaming live on the City of Douglas Website

1. **Call to Order, Roll Call, and Pledge of Allegiance**
2. **Disclosures by City Council Members**
3. **Approval of General Agenda (Corrections or Additions)**
4. **Public Comments**
5. **Presentations**
 - a. **Recognition - Planning Commission & Downtown Historic District Review Panel: Becky Renstrom (12 Years of Service)**
 - b. **Recognition - Douglas Police Department, Community Policing Award by International Chiefs of Police**
6. **Approval of Consent Docket**
 - a. **Minutes**

City Council Regular Meeting: October 14, 2024
 - b. **Bills & Claims**
 - c. **Other – Consent**
7. **Public Hearing**

- a. Resolution 2024-38: A Resolution Authorizing Weylin Thompson To Proceed With A Type B Development For Construction Of A Hilton Homewood Suites Hotel In A B-2 General Business Zone At Seven Trails Commerce Center, Parcels 5 & 7
- b. Resolution 2024-39: A Resolution Approving The Roberts Subdivision NO. 2, Converse County, Wyoming
- c. Resolution 2024-40: A Resolution Authorizing A conditional Use Permit To Mike Hageman To Allow the Keeping Of Livestock In An Industrial Zoning District At The Lot East Of 308 West Poplar Street (Original Town Of Douglas, Part Of Outlot C)
- d. Resolution 2024-42: A Resolution Amending the Budget of the City of Douglas, Wyoming, for the Fiscal Year 2025

8. Council Action Items

- a. Planning & Zoning Commission Appointment
- b. Urban Systems Advisory Board Committee Appointment
- c. Bid Award: Clearfield Booster Station
- d. Resolution 2024-41: Adopting The 2024 Update To The Hazard Mitigation Plan For Wyoming Region 2 Including Converse, Natrona, & Niobrara Counties
- e. Funding usage approval: Water Fund Account number 31-5856-2158 for water well study and drilling.
- f. MOU: Industrial Siting Council Dutchman Renewable Power Project
- g. Community Service Funding Agreement: Outdoor Enthusiasts of Converse County

9. Discussion Items

- a. RFP Update: The 112
- b. Wyoming Community Gas Funding Project Designation
- c. Council Training: Topics & Date
- d. November Council Meeting: November 11th (Holiday) Move to 12th

10. Public Comments

11. City Manager's Report

12. Council Information

- a. Community Service Funding Agreement Quarterly Reports: -Youth Development Services; High Country Behavioral Health; WY Child Family Development; CCSD1; Community Action Partnership; Laramie Peak Humane Society; Children's Advocacy Project, Inc.; Boys & Girls Club**
- b. Notice of Possible Quorum: Economic Development Studies - City Hall Conference Room 101 N 4th St, Douglas 10/29/2024 10:30am-12:00pm**
- c. Converse County Tourism Promotion Board Minutes: September 2024**
- d. Financial Report: September 2024**
- e. Council Comments**

13. Good People Doing Good Things

14. Community Update

- a. Event Calendar**

15. Executive Session

16. Adjourn

City Council Regular Minutes
October 14, 2024

1. Call to Order, Roll Call, and Pledge of Allegiance

Mayor Kim Pexton Called the meeting to order at approximately 3:59p.m. Roll Call was taken with the following City Council Members present: Councilperson Ron McNare; Councilperson Perry Hershberger; Councilperson Matt Schmidt; Councilperson John Bartling and Mayor Kim Pexton. Mayor Pexton led the assembly in the Pledge of Allegiance.

Also present: J.D. Cox, City Manager; Mike Armstrong, City Attorney; Clara Chaffin, Community Development Director; Sonya Ortega, City Clerk; Kendal Detwiler, Human Resources Director; Todd Byerly, Chief of Police; John Harbarger, Public Works Director.

2. Disclosures by City Council Members

Councilperson McNare will abstain from voting on item 9f and 9g.

3. Approval of General Agenda (Corrections or Additions)

Councilperson Matt Schmidt moved to approve the General Agenda as presented. Seconded by Councilperson Perry Hershberger. Motion carried 5-0.

4. Public Comments

None.

5. Presentations

a. Introduction: Landfill Operator Bryce Tschida

City Manager Cox introduced Bryce Tschida as the new landfill operator.

b. Introduction: Parks Maintenance Richard Chase

City Manager Cox introduced Rich Chase as the new parks maintenance.

c. Promotion: Cemetery Sexton Amber Goosen

Mayor Pexton announced the promotion of Amber Goosen as the Cemetery Sexton.

6. Discussion Items

a. WaterWise Update-1. Level 1 Study Update; 2. System Usage & Consumption Targets; 3. Groundwater Exploration; 4. Water Treatment Plant HDR Study

Supervisor Oberlander provided a report of the WaterWise Update. Threshold

was reached and The City will do a leak detection survey this fall to try to identify weak components within the water system. Possibly revising 5 year capital plan to target weak areas and we are on track to be completed by May 2025. Supervisor Oberlander discussed with council the Western Sky Well. Council believes we should move forward. RM stated water is our most important issue and if there is some way to progress then we should. Supervisor Oberlander requests we do a budget amendment, Council agrees for budget amendment

b. Notification: Sales Tax Hold Received & Released: College Inn Bar

City Clerk Ortega gave staff report. Council decided against a show cause hearing for College Inn Bar.

c. EWC Funding: Discussion

Commissioner Willox provided report. Estimated cost is 6.1M and there are 4M between grant and participating parties. we are saving 300k by doing a red steel building. There are potentials for grants. We have 500k match money available through the state. Commissioners will have a discussion tomorrow. Commissioner Willox will provide further information as he gets it.

7. Approval of Consent Docket

Councilperson John Bartling moved to approve the Consent Docket as presented. Seconded by Councilperson Ron McNare. Motion carried 5-0.

a. Minutes

Special Council Meeting Minutes: September 19, 2024

b. Bills & Claims

Warrant Register: September 2024

c. Other – Consent

8. Public Hearing

None

9. Council Action Items

a. Safe Streets for All (SS4A): RFQ Award

Director Chaffin provided a staff report. RFQ received. A pedestrian bridge

would fall under this.

Councilperson Perry Hershberger moved to approve awarding the Safe Streets for All (SS4A) Comprehensive Action Plan grant work to Ayres Associates and authorize the City Manager to sign all associated documentation. Seconded by Councilperson Matt Schmidt. Motion carried 5-0.

b. Planning and Zoning Commission: Appointment

Director Chaffin stated there were 2 positions opened up, Dave Patterson has been on Planning Commission for 1 term and applied to renew his term. There are a couple of applications for the second available position and the appointment will be brought forward to the next Council Meeting.

Councilperson Ron McNare moved to appoint Dave Patterson to the Planning and Zoning Commission for a three-year term ending October 25, 2027. Seconded by Councilperson John Bartling. Motion carried 5-0.

c. WYDOT Gas Line Relocation Reimbursement Agreement

Director Harbarger provided staff report; he reached out to WYDOT and they agreed to cover this cost. Once the line is relocated, the City will send in invoices and will be reimbursed by WYDOT. The City pays upfront.

Councilperson John Bartling moved to approve the agreement between Black Hills Wyoming LLC and the City of Douglas in the amount of \$26,486.00 to relocate the gas main on the 2nd St. bridge and furthermore authorize the City Manager to sign all associated documents. Seconded by Councilperson Matt Schmidt. Motion carried 5-0.

d. WWTP Cell Bypass: Change Order #2

Director Harbarger provided staff report. This includes a 96 day extension due to a delay in equipment.

Councilperson Matt Schmidt moved to approve WWTP Cell Bypass Change Order #2 in the amount of \$7,308.46 and authorize the City Manager to sign all associated documents. Seconded by Councilperson Ron McNare. Motion carried 5-0.

e. Resolution 2024-37: A Resolution Prohibiting Parking On Commerce Drive

Director Chaffin provided Staff report; motion failed to move.

f. Warrant Register: September 2024 - K&R Construction, LLC

City Manager Cox advised there was a conflict announced earlier in the meeting and we are recommending approval.

Councilperson John Bartling moved to approve Warrant Register September 2024-K&R Construction, LLC. as presented. Seconded by Councilperson Matt Schmidt. Motion carried 4-0.

g. City Hall: Change Order No. 4 (Deduct)

Director Chaffin provided a staff report; Councilpersons Hershberger and Schmidt do not agree with the amount The City is requesting to spend on a

time capsule. Councilperson McNare stated that the company that builds these capsules is more than just a stainless steel box section, there is a discussion included along with other items in this package. The Mayor advised to change the motion to take out the time capsule. Mayor Pexton entertains a motion with changes.

Councilperson John Bartling moved to approve Change Order No. 4 with the exception of the time capsule and deduct for coping at top of wall and authorize the City Manager to sign all associated documents. Seconded by Councilperson Perry Hershberger. Motion carried 4-0.

10. Public Comments

None

11. Finance

None

12. City Manager's Report

City Manager Cox provided a report and a hand-out. He is going to attend the meeting of the Joint Justice Center on Thursday and will be proposing a revised agreement and bylaws that will be combined. "Red's Report" has been added to the City Manager Report. The Cemetery Tour was highlighted as being highly successful as they had the highest turnout they've ever had. City Manager Cox thanked Council at Oktoberfest and that it was a great success with 1500 attendees. Continuing to work on the city app "Discover Douglas". 7 trails Type b will be going to Planning Commission next week and will be added to the 28th Council meeting. Retail Coach continues to work to build relationships with potential firms. The City is continuing to strive to keep the pool expedited and work through our city engineers to subcontract with EDA to keep it moving along and we are still hopeful to have a pool this next summer. The 112 downtown are out for proposals and due back the 17th. Changes at City Hall are substantial. The Sheep Mountain Well was completed early.

13. Council Information

Councilperson Hershberger commented on how awesome Oktoberfest was and suggests moving to Jackalope Square next year and shutting down that part of town and involve the whole city. Councilperson Hershberger also asked about redoing the alley behind Double D's and Director Harbarger advised that it is part of the ongoing project right now. Councilperson Hershberger stated that we as a city need to make sure we are also following the requirements of tree height over sidewalks as well. Councilperson Bartling made a comment on how nice Adams Street is and tasked the Police Department on keeping a close watch at the corner of Jefferson St and Fetterman St as there is someone creating large ruts and tearing the corner up.

a. Tourism Board: August 2024 Minutes

b. Douglas Urban Systems Advisory Committee: 2024 Minutes

14. Good People Doing Good Things

Mayor Pexton thanked multiple subjects for putting very hard work into Oktoberfest. Councilperson Schmidt thanked the Clerk and Deputy Clerk for setting up NEWY. Councilperson McNare stated it did not go unnoticed that we were there for them and not asking them for money. Mayor Pexton advised we are the only city that hosts the JAC and really only in the region involved with our Legislators. Councilperson Hershberger thanks Mayor Pexton for Fact Friday and that it is much appreciated by the council and the citizens.

15. Community Update

a. Event Calendar

16. Executive Session

17. Adjourn

Mayor Pexton called the meeting to adjourn at approximately 5:27pm
Councilperson Perry Hershberger moved to adjourn the Regular City Council Meeting of October 14, 2024. Seconded by Councilperson Ron McNare.
Motion carried 5-0.

Kim Pexton, Mayor

ATTEST:

Sonya Ortega, City Clerk
Published: October 15, 2024



Agenda Item Report City Council – October 28, 2024

Item

Resolution 2024-38: A Resolution Authorizing Weylin Thompson To Proceed With A Type B Development For Construction Of A Hilton Homewood Suites Hotel In A B-2 General Business Zone At Seven Trails Commerce Center, Parcels 5 & 7

Responsible Staff Contact

Clara Chaffin

Recommendation

Recommend approval of the Type B Development to build a Hilton Homewood Suites Hotel at 7 Trails Commerce Center, Parcels 5 & 7.

Executive Summary

An application has been received for a Type B Development to build a Hilton Homewood Suites Hotel at 7 Trails Commerce Center, Parcels 5 & 7.

Background

The subject property was annexed by the City of Douglas in 2015, as part of the Seven Trails Commerce Center.

Alignment to Strategic Doing (SD) and/or Other Plans

DOUGLAS MASTER PLAN: The subject property was not annexed to the City at the time of the 2014 Master Plan. The property was not included in the Future Land Use Plan.

The property is adjacent to the West Yellowstone Corridor of the West Yellowstone District. The Master Plans focus for this area consists of Retail. Commercial activities in this area can target both the needs and preferences of visitors staying at nearby accommodations and tourists at large events (e.g. State Fair), as well as Douglas residents living in adjoining residential subdivisions in northwest Douglas.

The desired future of this area focuses on catering to the traveling public and on its connection to downtown, including streetscape and pedestrian environment improvements.

The development of a hotel conforms with the Douglas Master Plan providing additional services for travelers at a primary gateway.

Budget/Fiscal Impact

n/a

Action Requested/Recommended Motion

I move to approve Resolution 2024-38 as presented and authorize the City Manager to sign all associated documents.

Attachments

1. CNCL Staff Report-DEV 03-24_Hilton
2. Cinch Loop, TBD - Hilton Homewood Suites Development Agreement FINAL
3. Resolution 2024-38

**DOUGLAS CITY COUNCIL
STAFF REPORT
OCTOBER 28, 2024**

**25 CINCH LOOP (PROPOSED)
TYPE B DEVELOPMENT – HILTON HOMEWOOD SUITES**

CASE NUMBER: DEV 03-24

PREPARED BY: Community Development Department

MEETING DATES: October 21, 2024 – Planning Commission
October 28, 2024 – City Council

REQUEST: Type B Development Proposal

PURPOSE: Development of a Hilton Homewood Suites.

RECOMMENDATION: The Community Development Department recommends approval of the development plan and development agreement for improvements at 25 Cinch Loop (proposed).

VICINITY MAP:



OWNER: Wagonhound Land & Livestock Co, LLC
1061 Poison Lake Road
Douglas, WY 82966

APPLICANT: Weylin Thompson
4954 N Arliss Ave.
Meridian ID, 83646

LOCATION:

- (1) Legal Description: Seven Trails Commerce Center, Parcels 5 & 7
- (2) General Location: The subject property is on the south side Highway 93 near the intersection of Highway 59 and the on-ramp to Interstate 25.
- (3) Address: 25 Cinch Loop, Douglas, WY (Proposed)

SIZE: Total Area: 4.767 Acres

EXISTING LAND USE: Vacant Land

ZONING: The property is currently zoned B-2 General Business Zoning District, which is intended to *provide for commercial uses that create a use intensity transition between residential neighborhoods and light industrial uses*. Hotels are an allowed use in the B-2 General Business Zone.



	SURROUNDING LAND USE:	ZONING	ANNEXATION STATUS
North:	Vacant Land	B-2	City
South:	Hotel & Retail	B-2	City
West:	Vacant Land	B-2	City
East:	Vacant Land	B-2	City

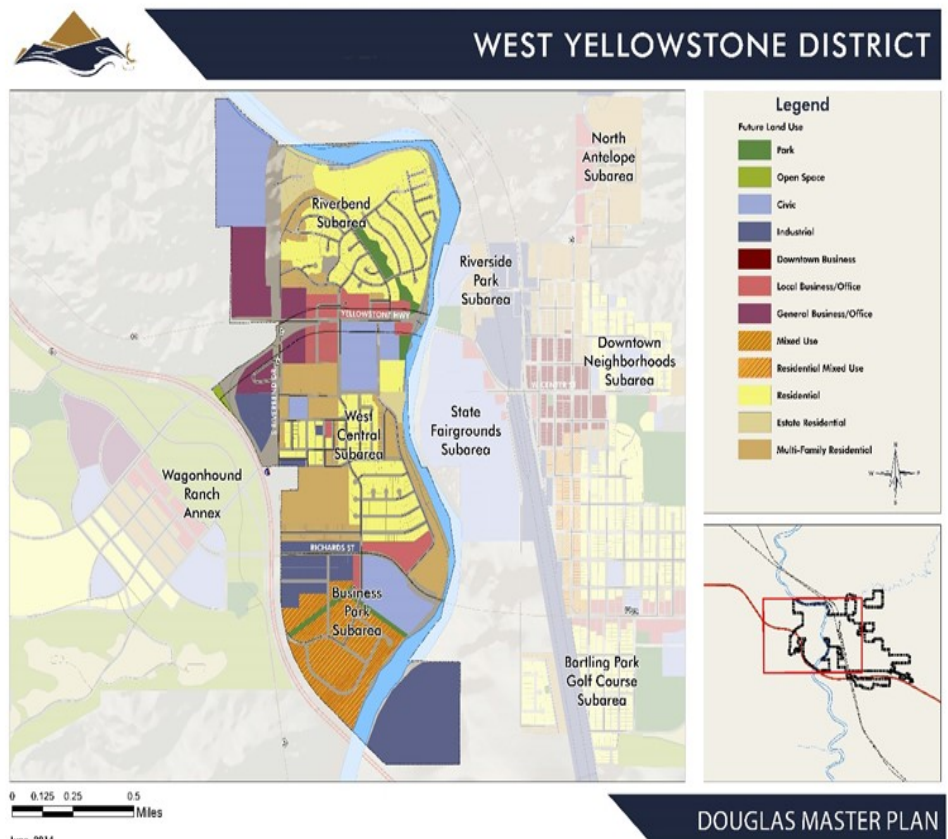
DESCRIPTION OF SITE AND SURROUNDINGS: The property is surrounded by Commercial uses and vacant land as indicated above.

HISTORY: The subject property was annexed by the City of Douglas in 2015, as part of the Seven Trails Commerce Center.

DOUGLAS MASTER PLAN:

The subject property was not annexed to the City at the time of the 2014 Master Plan. The property was not included in the Future Land Use Plan.

The property is adjacent to the West Yellowstone Corridor of the West Yellowstone District. The Master Plans focus for this area consists of Retail. Commercial activities in this area can target both the needs and preferences of visitors staying at nearby accommodations and tourists at large events (e.g. State Fair), as well as Douglas residents living in adjoining residential subdivisions in northwest Douglas.



The desired future of this area focuses on catering to the travelling public and on its connection to downtown, including streetscape and pedestrian environment improvements.

The development of a hotel conforms with the Douglas Master Plan providing additional services for travelers at a primary gateway.

DEVELOPMENT STANDARDS: This Development Plan conforms to the minimum Standards and Policies as described in City Code.

THE PROPOSED PROJECT DETAILS:

Lot Size	4.767 Acres
Building Size	Level 1: 20,694 SF Level 2: 20,016 SF Level 3: 20,016 SF Level 4: 20,016 SF Total: 80,742 SF
North Set Back	155' 4"
South Set Back	76' 7"
East Set Back	91' 1"
West Set Back	228' 0"
Building Height	45' to parapet (top of wall) 56' 3" with parapet
Parking	Total: 123 (99 required) ADA: 5 (5 required)
Landscaping	28% Provided (20% required)
Drainage	Grading and Drainage plans provided
Lighting Plan	Lighting plan provided
Elevations	Elevations provided
Floodplain	The proposed development is out of the floodplain

ADDITIONAL INFRASTRUCTURE REQUIRED: City utility lines will need to be installed to the site. Water and Sewer Taps will be required. Sidewalk will need to be installed along Highway 93.

REVIEWING AGENCIES AND COMMENTS:

Wyoming Department of Transportation:

Permitting is required for street cuts, utilities, landscaping, drainage and curb cuts.

State Fire Marshall

Plans will need to be submitted to the State Fire Marshal's Office for the building fire and life safety, fire alarm system, fire sprinkler system, and electrical for review and approval prior to starting any work.

City Engineer:

No comments.

Public Works:

No comments.

Utility Billing:

Obtain a separate meter for irrigation.

Douglas Police Department:

Ensure all drainage is detained and will not impact highway travel.

Douglas Fire Department:

No comments.

Private Utilities (Electric, Gas, Communications)

No comments.

Public Comments:

No comments.

STAFF RECOMMENDATION: The Community Development Department recommends approval of this development plan for the construction of an extended stay hotel at 25 Cinch Loop. (proposed)

PLANNING & ZONING COMMISSION RECOMMENDATION: At their regular meeting on October 21, 2024, the Douglas Planning & Zoning Commission voted unanimously to recommend approval of the Type B Development to build a Hilton Homewood Suites Hotel at 7 Trails Commerce Center, Parcels 5 & 7.

DEVELOPMENT AGREEMENT

This *Development Agreement* is made in Douglas, Wyoming, by and between the City of Douglas, Wyoming hereinafter referred to as the “**City**”, and Douglas Lodging Investors LLC, a Wyoming limited liability company hereinafter referred to as “**Developers**”, for the purpose of development of the below listed property:

Lot 1, Seven Trails Commerce Center (addressed as 25 Cinch Loop, Douglas, WY 82633).

RECITALS

This Development Agreement allows the **Developers** to obtain a Building Permit for a Type B Development, on the above stated property under the following agreement.

AGREEMENT

In consideration of approval of the above development, it is mutually agreed and understood by and between the **Developers** and the **City**:

1. **Developers** shall be allowed to construct a Type B Development on the above stated property in accordance with the information provided to the City in the Development Plan Review. **Developers** agree to notify the City of any change(s) to the Development Plan subsequent to its approval and prior to implementing said change(s).
2. **Developers** agree to construct the development according to the requirements of the City of Douglas Municipal and adopted Construction Codes, including the requirements of Title 15 – Buildings and Construction and Title 16 – Unified Land Development Code, including but not limited to:
 - A. Calling for the required building, plumbing, mechanical, and electrical inspections (minimum 24 hour notice);
 - B. Calling for and receiving a final building inspection and Certificate of Occupancy prior to occupying the building;
 - C. Following manufacturer's instructions when supplied with building materials, provided such instructions do not violate building, plumbing, mechanical or electrical codes;
 - D. Providing drainage designed to deposit all run-off into either the municipal drainage system or into acceptable natural drainage;
 - E. Conforming to all zoning requirements, including:
 - i. Providing the required number of designated off-street parking spaces;
 - ii. Completion of the required landscaping as indicated on the Landscape Plan and approved by the Douglas City Council, within one (1) year of issuance of Certificate of Occupancy;
 - iii. Completion of sidewalk along Highway 93 and Highway 59 as approved by the Wyoming Department of Transportation and Douglas City Council;
 - iv. Connecting to or utilizing required city utility services;
 - v. Designing and locating circulation and parking areas to facilitate removal and storage of snow;
 - vi. Designing and locating concealed solid waste container(s);
 - vii. Providing adequate access for emergency vehicles and personnel.
3. **Developers** agree to place utility meters within the building to prevent weather related problems.

4. **Developers** further agree to:
- A. Provide and place safety fencing or barriers around excavations during construction;
 - B. Provide a posted address on the construction site prior to beginning construction;
 - C. Provide for safe construction site access and egress;
 - D. Provide for temporary parking facilities for construction site workers;
 - E. Maintain construction site in neat and orderly condition, free of waste materials, debris, or rubbish;
 - F. Complete construction of the development as required by the *Building Permit*.
5. **City** agrees to provide required inspections within twenty-four (24) hours, when possible. Upon satisfactory completion of final inspection, City agrees to provide *Certificate of Occupancy* in a timely manner.
6. After passing inspection by the City Engineer and the Public Works Director and after the one-year warranty period, the **City** agrees to accept utility mains (Attachment A).
7. **Developer** agrees this *Development Agreement* is binding for any additions or accessory structures that may be added in the future.
8. Nothing in this *Development Agreement* shall supersede any state or federal regulations that may be more restrictive than or contradict any portion of this agreement.
9. Governmental Immunity. The City does not waive governmental immunity by entering into this Agreement, and specifically retains immunity and all defenses available to it as a governmental entity pursuant to the laws of the State of Wyoming.
10. In the event it becomes necessary for any party to bring an action with respect to enforcement of the provisions of this *Development Agreement*, the prevailing party shall be awarded reasonable attorney's fees as may be determined by the court.
11. This *Development Agreement* shall inure and be binding on the parties, their heirs and assigns and shall be recorded in the records of Converse County, Wyoming.

Dated this ____ day of _____, 2024.

DOUGLAS LODGING INVESTORS, LLC

CITY OF DOUGLAS

Signature

By: _____
J.D. Cox, City Manager

Printed Name

Title

STATE OF WYOMING)
) SS.
COUNTY OF CONVERSE)

On this ____ day of _____, 2024, the foregoing instrument was acknowledged before me by _____, who acknowledges himself/herself to be the Managing Member of Douglas Lodging Investors LLC, A Wyoming limited liability company, and that said instrument was signed and sealed on behalf of said entity by proper authority for the purposes therein contained, and said signee acknowledges said instrument to be the free act of said entity. Witness my hand and official seal.
My commission expires: _____

Notary Public

My Commission expires:

STATE OF WYOMING)
) SS.
COUNTY OF CONVERSE)

The foregoing instrument was acknowledged before me by City Manager, J.D. Cox, on behalf of the City of Douglas, Wyoming, this _____ day of _____, 2024.

Witness my hand and official seal.

Notary Public

My Commission expires:

RESOLUTION NO. 2024-38

A RESOLUTION AUTHORIZING WEYLIN THOMPSON TO PROCEED WITH A TYPE B DEVELOPMENT FOR CONSTRUCTION OF A HILTON HOMEWOOD SUITES HOTEL IN A B-2 GENERAL BUSINESS ZONE AT SEVEN TRAILS COMMERCE CENTER, PARCELS 5 & 7.

WHEREAS, Weylin Thompson has submitted a Type B Development plan for the construction of a Hilton Homewood Suites Hotel in a B-2 General Business Zone at 7 Trails Commerce Center, Parcels 5 & 7, and has met the development requirements of the Douglas Municipal Code; and

WHEREAS, lodging for travelers is a needed service for Douglas and Converse County, and the development proposed by Weylin Thompson would contribute to addressing that need; and

WHEREAS, the staff and the Douglas Planning and Zoning Commission have reviewed the proposed development to ensure that it shall have no adverse impact upon the welfare of the public; and

WHEREAS, the proposed development is in keeping, by proximity, with the goals of the 2014 Douglas Master Plan by responding to the community’s needs; and

WHEREAS, notice has been duly given and a public hearing held before the Douglas Planning and Zoning Commission on October 21, 2024, where there was no public opposition to the development; and the Planning and Zoning Commission voted unanimously to recommend approval of the development to the Douglas City Council; and

WHEREAS, Municipal Code requires that all Type B Developments be approved by the City Council.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF DOUGLAS, WYOMING, that Weylin Thompson be approved to move forward with the Type B Development of a Hilton Homewood Suites in a B-2 General Business Zone at Seven Trails Commerce Center, Parcels 5 & 7.

PASSED, APPROVED, AND ADOPTED this 28th day of October, 2024.

Kim Pexton, Mayor

Attest:

Sonya Ortega, City Clerk



Agenda Item Report City Council – October 28, 2024

Item

Resolution 2024-39: A Resolution Approving The Roberts Subdivision NO. 2, Converse County, Wyoming

Responsible Staff Contact

Clara Chaffin

Recommendation

Recommend approval of Roberts Subdivision #2.

Executive Summary

An application was received for a subdivision in the County within one mile of the boundaries of the city limits. Mark & Katherine Roberts wish to divide two lots in the Roberts Subdivision into 6 new, smaller lots for commercial and residential purposes.

Background

n/a

Alignment to Strategic Doing (SD) and/or Other Plans

2014 Master Plan: The location is in the Planning Area, as designated in the City of Douglas Master Plan, adopted in 2014. Land included in this area is anticipated to be a possible site of annexation within a 20–30-year period, making long range impacts to the property important to future City growth needs. The site is visible from Interstate Highway 59, influencing the perceptions of travelers of the community. The city's strong preference would be for any activity to be developed in a manner similar to City of Douglas Industrial zoning standards.

Budget/Fiscal Impact

n/a

Action Requested/Recommended Motion

I move to approve Resolution 2024-39 as presented

Attachments

1. CNCL Staff Report_CCSUB 03-24 Roberts No. 2 Subdivision
2. Plat
3. Resolution 2024-39

**DOUGLAS CITY COUNCIL
STAFF REPORT
OCTOBER 28, 2024**

Proposed Roberts No. 2 Subdivision

CASE NUMBER: CCSUB 03-24

PREPARED BY: Heidi McCullough, Planning Technician

MEETING DATES: October 21, 2024 – Planning and Zoning Commission
October 28, 2024 – Douglas City Council

RECOMMENDATION: The Community Development staff recommends approval of the Roberts No. 2 Subdivision, Converse County, Wyoming, with reservations as to the future development of the property given the absence of county zoning regulations.

VICINITY MAP:



OWNERS: Mark & Katherine Roberts
P.O. Box 934
Douglas, WY 82633

PURPOSE: Creation of 6 lots from two lots for commercial and residential purposes.

LOCATION: The subject property is located at 14 J Road on the north side of Highway 59.

SIZE: Area: 29.92 Acres

ZONING: N/A

EXISTING LAND USE: Vacant

PROPOSED USE: Dividing the property into 6 lots with road access to allow for future development of property.

RECOMMENDED LAND USE PER ADOPTED PLAN: N/A

PLAT DATA: Lot 1: 4.76 acres
Lot 2: 4.78 acres
Lot 3: 5.11 acres
Lot 4: 5.10 acres
Lot 5: 5.13 acres
Lot 6: 5.13 acres

SUBDIVISION STANDARDS: N/A

ADDITIONAL INFRASTRUCTURE REQUIRED: No additional infrastructure required at this time.

ANALYSIS: This application is being considered per Wyoming Statute 18-5-308, which states any part of a subdivision within one mile of the boundaries of an incorporated city must obtain the approval of its governing body.

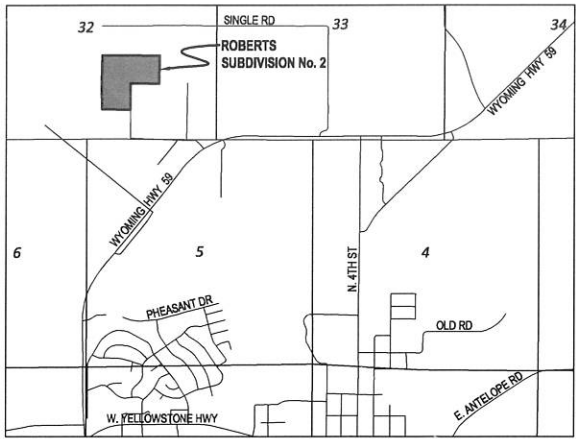
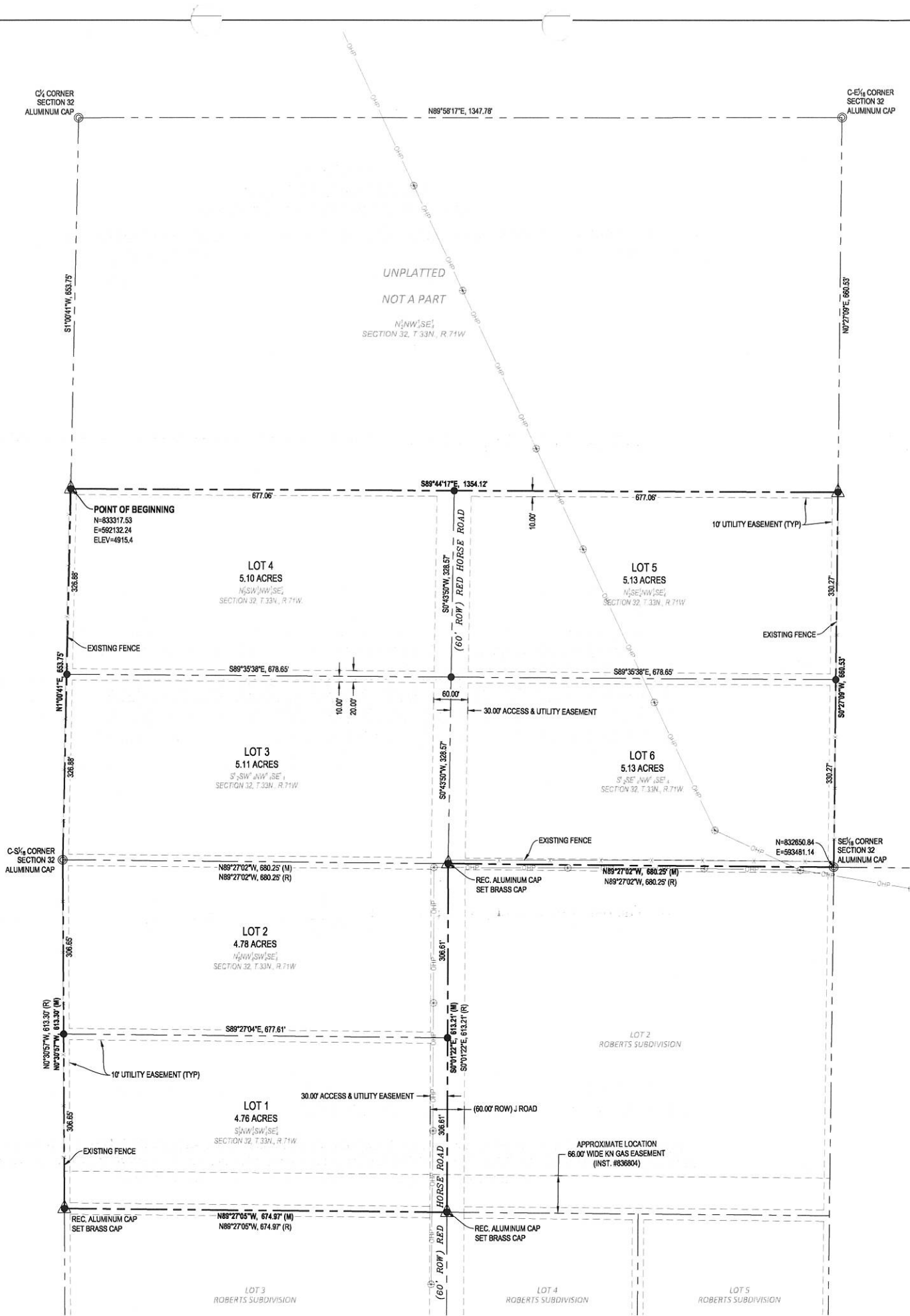
Both lots would be accessed from Powder River Road and J Road, accesses off of Highway 59. Water and sewage disposal would be provided by private wells and septic systems.

The location is in the Planning Area, as designated in the City of Douglas Master Plan, adopted in 2014. Land included in this area is anticipated to be a possible site of annexation within a 20–30-year period, making long range impacts to the property important to future City growth needs. The site is visible from Interstate Highway 59, influencing the perceptions of travelers of the community. The city’s strong preference would be for any activity to be developed in a manner similar to City of Douglas Industrial zoning standards.

STAFF RECOMMENDATION: The Planning & Community Development staff recommends approval of the Roberts No. 2 County Subdivision with reservations as to future development of the property given the lack of county zoning regulations.

PLANNING & ZONING COMMISISON RECOMMENDATION: At their regular meeting on October 21, 2024, the Douglas Planning & Zoning Commission voted unanimously to recommend approval of the Roberts County Subdivision No. 2 with staff recommendations.

M:\Land 2024\Survey\24-192 Roberts Subdivision Drawings\Survey\Plat\24-192 Roberts Subdivision NO. 2.dwg, 8/20/2024, Shannon Corbison



VICINITY MAP
1" = 2000'

APPROVALS

APPROVED BY THE CONVERSE COUNTY PLANNING AND ZONING COMMISSION,
THIS _____ DAY OF _____, 2024.

CHAIRMAN OF THE CONVERSE COUNTY
PLANNING & ZONING COMMISSION

APPROVED BY THE CONVERSE COUNTY COMMISSIONERS,
THIS _____ DAY OF _____, 2024.

CHAIRMAN OF THE BOARD OF
COUNTY COMMISSIONERS

ATTEST:
COUNTY CLERK

NOTES

1. ERROR OF CLOSURE EXCEEDS 1:350,000.
2. BASIS OF BEARINGS IS THE WYOMING STATE PLANE COORDINATE SYSTEM, EAST ZONE, NAD 1983/86.
3. NO PUBLIC MAINTENANCE OF ROADS - CONVERSE COUNTY NOT RESPONSIBLE FOR MAINTENANCE OF SUBDIVISION ROADS.
4. THE SURFACE ESTATE OF THE LAND TO BE SUBDIVIDED IS SUBJECT TO FULL AND EFFECTIVE DEVELOPMENT OF THE MINERAL ESTATE.
5. THERE IS NO CENTRALIZED SEWAGE SYSTEM PROPOSED.
6. THERE IS A CENTRALIZED WATER SYSTEM FROM THE CITY OF DOUGLAS.
7. SUBJECT PROPERTY IS LOCATED IN FLOOD ZONE "X", AS PER FIRM 56009C1400D, EFFECTIVE 11/4/2009.
8. PERMITTED SEPTIC SYSTEMS AS SHOWN AND LABELED. ALL OTHERS HAVE NOT BEEN PERMITTED AT THE TIME OF THIS PLAT.
9. SUBDIVIDER IS RESPONSIBLE FOR INSTALLING FENCE AROUND PERIMETER OF SUBDIVISION.

CERTIFICATE OF SURVEYOR

STATE OF WYOMING } SS
COUNTY OF NATRONA

I, WILLIAM R. FEHRINGER, A REGISTERED PROFESSIONAL LAND SURVEYOR, LICENSE NO. 5528, DO HEREBY CERTIFY THAT THIS PLAT WAS MADE FROM NOTES TAKEN DURING AN ACTUAL SURVEY MADE UNDER MY DIRECT SUPERVISION IN JULY, 2019, AND THAT THIS PLAT, TO THE BEST OF MY KNOWLEDGE AND BELIEF, CORRECTLY AND ACCURATELY REPRESENTS SAID SURVEY. ALL BEING TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

THE FOREGOING INSTRUMENT WAS ACKNOWLEDGED BEFORE ME BY WILLIAM R. FEHRINGER
THIS _____ DAY OF _____, 2024.

WITNESS MY HAND AND OFFICIAL SEAL.

MY COMMISSION EXPIRES _____

NOTARY PUBLIC



LEGEND

- ▲ SET BRASS CAP
- SET MONUMENT 5/8" REBAR & ALUMINUM CAP
- ⊙ FOUND MONUMENT AS NOTED



CERTIFICATE OF DEDICATION

STATE OF WYOMING } SS
COUNTY OF CONVERSE

THE UNDERSIGNED, MARK E. AND KATHERINE L. ROBERTS, TRUSTEES OF THE MARK E. AND KATHERINE L. ROBERTS FAMILY TRUST, DATED OCTOBER 19, 2018, DO HEREBY CERTIFY THAT THEY ARE THE OWNERS AND PROPRIETORS OF THE FOLLOWING DESCRIBED PARCEL OF LAND BEING THE S1/2NW1/4SE1/4 OF SECTION 32, T.33N., R.71W., 6TH P.M., CONVERSE COUNTY, WYOMING, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE CENTER 1/4 CORNER OF SAID SECTION 32 MONUMENTED BY AN ALUMINUM CAP;

THENCE S1'00'41"W, ALONG THE WEST LINE OF THE NW1/4, A DISTANCE OF 653.75 FEET TO THE POINT OF BEGINNING;

THENCE S89°44'17"E, ALONG THE NORTH LINE OF SAID S1/2NW1/4 OF SECTION 32, A DISTANCE OF 1354.12 FEET TO THE NORTHEAST CORNER OF THE PARCEL, FROM WHICH THE C-1/8 CORNER OF SAID SECTION 32 BEARS N0°27'09"E, A DISTANCE OF 660.53 FEET, MONUMENTED BY AN ALUMINUM CAP;

THENCE S0°27'09"W, ALONG THE EAST LINE OF SAID NW1/4 OF SECTION 32, A DISTANCE OF 660.53 FEET TO THE SOUTHEAST CORNER OF THE PARCEL, BEING THE SE1/8 CORNER OF SAID SECTION 32, ALSO BEING THE NORTHEAST CORNER OF LOT 2, ROBERTS SUBDIVISION, MONUMENTED BY AN ALUMINUM CAP;

THENCE N89°27'02"W, ALONG THE SOUTH LINE OF SAID NW1/4 OF SECTION 32 ALSO BEING THE NORTH LINE OF LOT 2, ROBERTS SUBDIVISION, A DISTANCE OF 680.25 FEET TO THE NORTHWEST CORNER OF LOT 2, ROBERTS SUBDIVISION, MONUMENTED BY AN ALUMINUM CAP;

THENCE S0°01'22"E, ALONG THE WEST LINE OF SAID LOT 2, ROBERTS SUBDIVISION, A DISTANCE OF 613.21 FEET TO THE SOUTHWEST CORNER OF SAID LOT 2, ALSO BEING THE NORTHEAST CORNER OF LOT 3, ROBERTS SUBDIVISION, MONUMENTED BY AN ALUMINUM CAP;

THENCE N89°27'05"W, ALONG THE NORTH LINE OF SAID LOT 3, ROBERTS SUBDIVISION, A DISTANCE OF 674.97 FEET TO THE NORTHWEST CORNER OF SAID LOT 3 AND A POINT ON THE EAST LINE OF THE SE1/8SW1/4 OF SECTION 32, MONUMENTED BY AN ALUMINUM CAP;

THENCE N0°30'57"W, ALONG THE EAST LINE OF SAID SE1/8SW1/4 OF SECTION 32, A DISTANCE OF 613.30 FEET TO THE CENTER-SOUTH 1/8 CORNER OF SAID SECTION 32, MONUMENTED BY AN ALUMINUM CAP;

THENCE N1°00'41"E, ALONG THE WEST LINE OF SAID NW1/4 OF SECTION 32, A DISTANCE OF 653.75 FEET TO THE POINT OF BEGINNING.

THE ABOVE DESCRIBED PARCEL CONTAINS 30.01 ACRES, (1,307,416 S.F.) MORE OR LESS, AND IS SUBJECT TO ANY RIGHTS-OF-WAY AND/OR EASEMENTS, RESERVATIONS, AND ENCUMBRANCES WHICH HAVE BEEN LEGALLY ACQUIRED.

THE TRACT OF LAND, AS IT APPEARS ON THIS PLAT, IS DEDICATED WITH THE FREE CONSENT AND IN ACCORDANCE WITH THE DESIRES OF THE UNDERSIGNED OWNERS AND PROPRIETORS. THE NAME OF THE SUBDIVISION SHALL BE "ROBERTS SUBDIVISION NO. 2" AND THE OWNERS HEREBY GRANT TO THE PUBLIC AND PRIVATE UTILITY COMPANIES AN EASEMENT AND LICENSE TO LOCATE, CONSTRUCT, USE AND MAINTAIN CONDUITS, LINES, WIRES, AND PIPES, ANY OR ALL OF THEM, UNDER AND ALONG THE STRIPS OF LAND MARKED "UTILITY EASEMENT" AS SHOWN ON THIS PLAT. ALL ROADS AND STREETS AS SHOWN HEREON HAVE BEEN PREVIOUSLY DEDICATED TO THE USE OF THE PUBLIC.

MARK E. & KATHERINE L. ROBERTS FAMILY TRUST
P.O. BOX 934
DOUGLAS, WYOMING 82633

MARK E. ROBERTS - TRUSTEE

THE FOREGOING INSTRUMENT WAS ACKNOWLEDGED BEFORE ME BY MARK E. ROBERTS, TRUSTEE OF THE MARK E. AND KATHERINE L. ROBERTS FAMILY TRUST, DATED OCTOBER 19, 2018, THIS _____ DAY OF _____, 2024.

WITNESS MY HAND AND OFFICIAL SEAL.
MY COMMISSION EXPIRES _____

NOTARY PUBLIC

KATHERINE L. ROBERTS - TRUSTEE

THE FOREGOING INSTRUMENT WAS ACKNOWLEDGED BEFORE ME BY KATHERINE L. ROBERTS, TRUSTEE OF THE MARK E. AND KATHERINE L. ROBERTS FAMILY TRUST, DATED OCTOBER 19, 2018, THIS _____ DAY OF _____, 2024.

WITNESS MY HAND AND OFFICIAL SEAL.
MY COMMISSION EXPIRES _____

NOTARY PUBLIC

PLAT OF
THE S1/2NW1/4SE1/4 OF SECTION 32, T.33N., R.71W.,
AND A REPLAT OF LOT 1, ROBERTS SUBDIVISION

AS
ROBERTS SUBDIVISION No. 2

BEING ALL OF THE NW1/4SE1/4 AND THE
NW1/4SW1/4SE1/4 OF SECTION 32
T.33N., R.71W., 6TH P.M.
CONVERSE COUNTY WYOMING

W.O. 24-192

RESOLUTION NO. 2024-39

A RESOLUTION APPROVING THE ROBERTS SUBDIVISION NO. 2, CONVERSE COUNTY, WYOMING

WHEREAS, Mark and Katherine Roberts have submitted a proposed subdivision plat creating the Roberts Subdivision No. 2, Converse County, Wyoming; and

WHEREAS, the proposal is to subdivide the property into six (6) lots, totaling 29.92 acres; and

WHEREAS, the proposed subdivision lies within Converse County, and is within one mile of the City of Douglas; and

WHEREAS, at the October 21, 2024, Douglas Planning and Zoning Commission meeting, the Commission considered the request for the subdivision, and voted unanimously to recommend approval with reservations due to the absence of county zoning regulations; and

WHEREAS, the City recommends that future development be constructed in a manner similar to that required in a City of Douglas Industrial Zone.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF DOUGLAS, WYOMING, that pursuant to Wyoming State Statutes 15-3-202, 18-5-308(b) and 34-12-103, the Roberts Subdivision No. 2, Converse County, Wyoming, is hereby approved, contingent upon any future development being consistent with the City of Douglas Master Plan.

PASSED, APPROVED, AND ADOPTED this 28th day of October 2024.

Kim Pexton, Mayor

Attest:

Sonya Ortega, City Clerk



Agenda Item Report

City Council – October 28, 2024

Item

Resolution 2024-40: A Resolution Authorizing A conditional Use Permit To Mike Hageman To Allow the Keeping Of Livestock In An Industrial Zoning District At The Lot East Of 308 West Poplar Street (Original Town Of Douglas, Part Of Outlot C)

Responsible Staff Contact

Clara Chaffin

Recommendation

Recommend approval of Resolution 2024-40 with Staff recommendations.

Executive Summary

An application was received from Mike Hageman for a Conditional Use Permit to keep livestock (4 sheep) in an I Industrial Zone, on the lot east of 307 W. Poplar Street, Original Town of Douglas, Part of Outlot C.

Background

This property was dedicated to the City in 1886 as a portion of the Original Town of Douglas, Part of Outlot C and was initially a portion of the railroad right-of-way. Keeping of Livestock is an approved use in this zone with approval of a Conditional Use Permit.

Alignment to Strategic Doing (SD) and/or Other Plans

2014 MASTER PLAN: The property is designated as part of the Riverside Park Subarea of the Central Douglas District. *"Riverside Park area is expected to continue to grow into an highly amenitized area. The park and river trail and its associated amenities will continue to be improved. Higher quality multi family developments should be encouraged. Industrial areas should be carefully integrated with residential areas."*

The request conforms to the Douglas Master Plan.

Budget/Fiscal Impact

n/a

Action Requested/Recommended Motion

I move to approve Resolution 2024-40 as presented.

Attachments

1. CNCL StaffReport_CUP 07-24_Hageman Livestock
2. Resolution 2024-40

**DOUGLAS CITY COUNCIL
STAFF REPORT
OCTOBER 28, 2024**

**PART OF OUTLOT C (ADJACENT TO 308 W. POPLAR STREET)
KEEPING OF LIVESTOCK – CONDITIONAL USE PERMIT**

CASE NUMBER: CUP 07-24

PREPARED BY: Heidi McCullough, Planning Technician

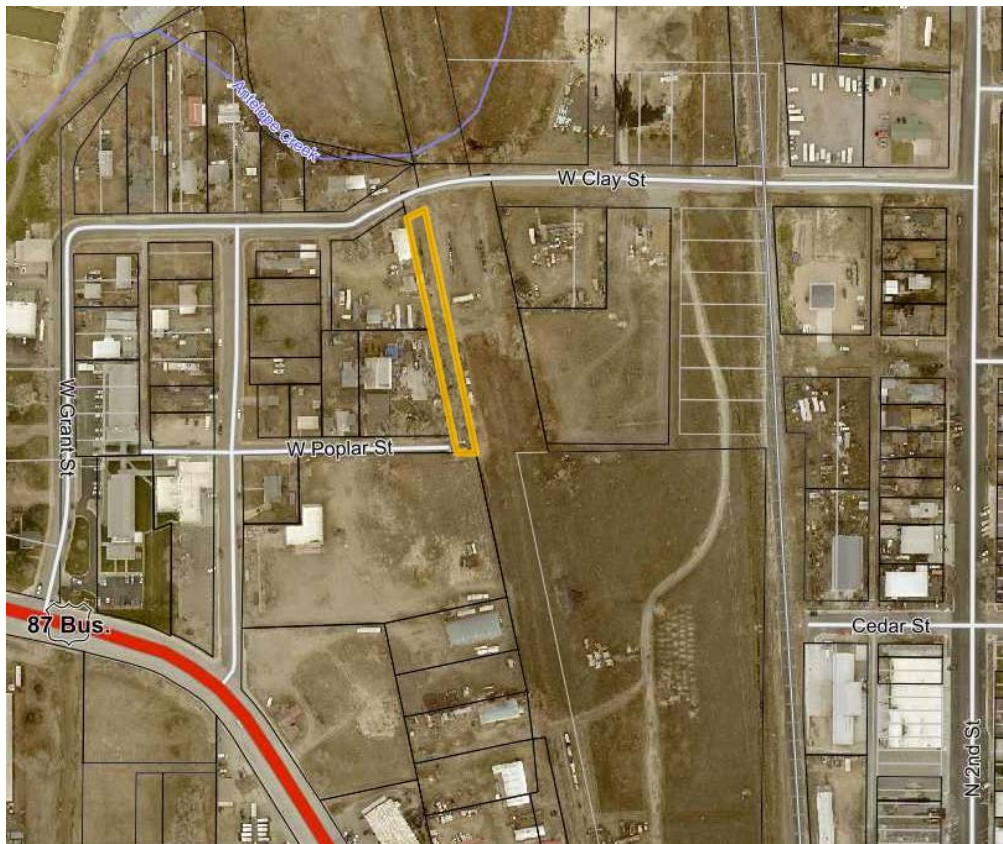
MEETING DATES: October 21, 2024 – Planning and Zoning Commission
October 28, 2024 – City Council

REQUEST: Conditional Use Permit, I Industrial Zone

PURPOSE: To operate keep 4 sheep on an undeveloped lot for weed abatement.

RECOMMENDATION: The Community Development Department recommends approval of the conditional use permit to allow the keeping of livestock at Part of Outlot C (the lot east of 308 W. Poplar Street) in an I Industrial Zone with staff recommendations.

VICINITY MAP:



OWNER: Echo Stock
307 Clay Street
Douglas, WY 82633

APPLICANT: Mike Hageman
308 W. Poplar Street
Douglas, WY 82633

LOCATION:

- (1) Legal Description: Original Town on Douglas, Part of Outlot C
- (2) General Location: The subject property is located in the undeveloped area between West Poplar Street and West Clay Street, between the railroad tracks and First Street West.
- (3) Address: n/a

LOT SIZE: 0.37 Acres

ZONING: I Industrial Zone



ZONING DATA: The property is currently zoned I, Industrial Zoning District. This district is “intended to provide for wholesale trade, storage and warehousing, trucking and transportation terminals, light and heavy manufacturing uses and similar activities.” Per the Douglas Municipal Code, keeping of livestock are permitted as a Conditional Use in an I zone.

Council approval of a conditional use permit for this type of use is a requirement of the Unified Land Development Code, due to its possible impact on neighboring properties.

EXISTING LAND USE: Vacant

PROPOSED USE: Vacant.

SURROUNDING LAND USE:		ZONING	ANNEXATION STATUS
North:	Vacant	R-2	City
South:	Industrial	I	City
East:	Vacant	I	City
West:	Residential	R-2 & I	City

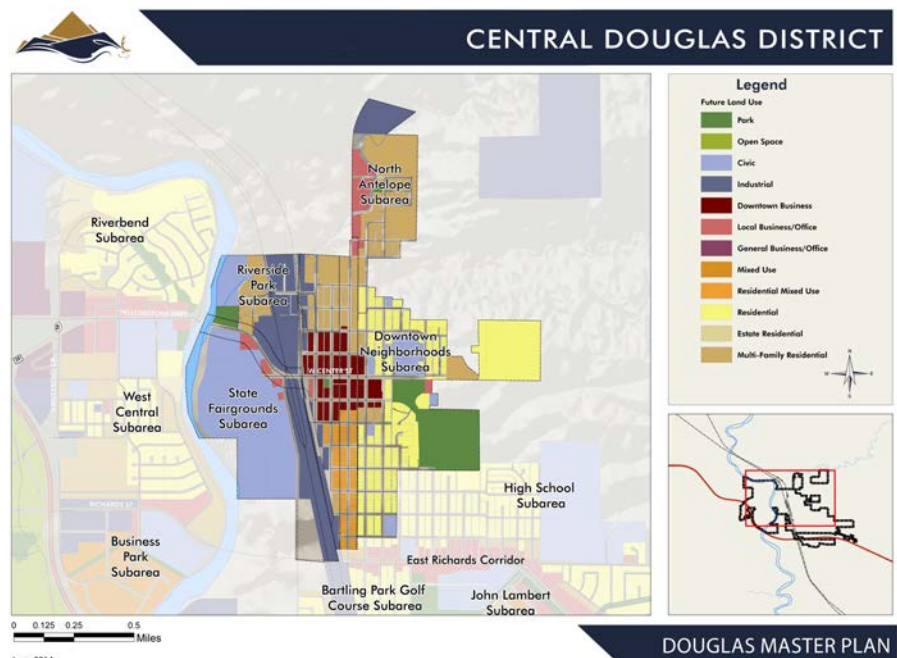
HISTORY: This property was dedicated to the City in 1886 as a portion of the Original Town of Douglas, Part of Outlot C and was initially a portion of the railroad right-of-way.

2014 MASTER PLAN:

The property is designated as part of the Riverside Park Subarea of the Central Douglas District.

”Riverside Park area is expected to continue to grow into an highly amenitized area. The park and river trail and its associated amenities will continue to be improved. Higher quality multi family developments should be encouraged. Industrial areas should be carefully integrated with residential areas.”

The request conforms to the Douglas Master Plan.



FY2025 STRATEGIC DOING: Conditional Use Permits are not referenced in the FY2025 Strategic Doing as Key Performance Indicator (KPI).

STAFF RECOMMENDATION: The Community Development Department recommends approval of the conditional use permit to allow keeping of livestock at Part of Outlot C (the lot east of 308 W. Poplar Street) in an I Industrial Zone with the following staff recommendations:

1. The conditional use permit to keep livestock is specific to Mike Hageman. If this property owner and/or agent, in the future, cease operation or moves the facility to another location, the Conditional Use Permit shall be null and void for the subject property.
2. The conditional use permit is to allow the keeping of four (4) sheep.
3. Livestock shall be kept in the southern half of the identified parcel as shown in red on the “Livestock Location Map” below.
4. An animal health certificate by a licensed veterinarian must be available for each animal upon request.
5. Animals must be kept in a safe and secure enclosure of appropriate size for the number of livestock. Appropriate shelter from the elements shall be provided.
6. Provisions must be made for the removal of excrement from the property on a regular basis and all efforts made to prevent offensive odor, an excessive number of flies or other insects, or otherwise unsanitary conditions.



PLANNING & ZONING COMMISSION RECOMMENDATION: At their regular meeting on October 21, 2024, the Douglas Planning & Zoning Commission voted unanimously to recommend approval of the conditional use permit to allow keeping of livestock at Part of Outlot C (the lot east of 308 W. Poplar Street) in an I Industrial Zone with the following staff recommendations:

1. The conditional use permit to keep livestock is specific to Mike Hageman. If this property owner and/or agent, in the future, cease operation or moves the facility to another location, the Conditional Use Permit shall be null and void for the subject property.
2. The conditional use permit is to allow the keeping of four (4) sheep.
3. Livestock shall be kept in the southern half of the identified parcel as shown in red on the “Livestock Location Map” below.
4. An animal health certificate by a licensed veterinarian must be available for each animal upon request.
5. Animals must be kept in a safe and secure enclosure of appropriate size for the number of livestock. Appropriate shelter from the elements shall be provided.
6. Provisions must be made for the removal of excrement from the property on a regular basis and all efforts shall be made to prevent offensive odors, an excessive number of flies or other insects, or otherwise unsanitary conditions.



RESOLUTION NO. 2024-40

A RESOLUTION AUTHORIZING A CONDITIONAL USE PERMIT TO MIKE HAGEMAN TO ALLOW THE KEEPING OF LIVESTOCK IN AN I INDUSTRIAL ZONING DISTRICT AT THE LOT EAST OF 308 WEST POPLAR STREET (ORIGINAL TOWN OF DOUGLAS, PART OF OUTLOT C).

WHEREAS, Mike Hageman wishes to keep a maximum of four (4) sheep at the lot east of 308 West Poplar Street; and

WHEREAS, the proposed use adheres to the Douglas Municipal Code, pertaining to the allowance of conditional use permits in an I Industrial Zone for keeping of livestock; and

WHEREAS, the Community Development staff and the Douglas Planning and Zoning Commission have reviewed the application to ensure that it shall have no adverse impact upon the welfare of the public; and

WHEREAS, notice has been duly given and a public hearing held before the Douglas Planning and Zoning Commission on October 21, 2024, where there was no public opposition to the application; and the Planning and Zoning Commission voted unanimously to recommend approval of the application to the Douglas City Council; and

WHEREAS, the following are recommended by City staff and the Planning and Zoning Commission:

1. The conditional use permit to keep livestock is specific to Mike Hageman. If this property owner and/or agent, in the future, cease operation or moves the facility to another location, the Conditional Use Permit shall be null and void for the subject property.
2. The conditional use permit is to allow the keeping of four (4) sheep.
3. Livestock shall be kept in the southern half of the identified parcel as shown in red on the “Livestock Location Map” below.



4. An animal health certificate by a licensed veterinarian must be available for each animal upon request.

- 5. Animals must be kept in a safe and secure enclosure of appropriate size for the number of livestock. Appropriate shelter from the elements shall be provided.
- 6. Provisions must be made for the removal of excrement from the property on a regular basis and all efforts made to prevent offensive odor, an excessive number of flies or other insects, or otherwise unsanitary conditions.

WHEREAS, Municipal Code requires that all conditional use permits be approved by the City Council.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF DOUGLAS, WYOMING, that Mike Hageman is granted a conditional use permit allow to keep a maximum of four (4) sheep at the lot east of 308 West Poplar Street (Original Town of Douglas, Part of Outlot C) in an I industrial Zone.

PASSED, APPROVED, AND ADOPTED this 28th day of October, 2024.

Kim Pexton, Mayor

Attest:

Sonya Ortega, City Clerk



Agenda Item Report

City Council – October 28, 2024

Item

Resolution 2024-42: A Resolution Amending the Budget of the City of Douglas, Wyoming, for the Fiscal Year 2025

Responsible Staff Contact

Mary Nicol

Recommendation

Approve budget amendments as requested.

Executive Summary

Various situations have risen resulting in a request for consideration of budget amendments for fiscal year 2025 totaling \$284,414. The source of revenue for the amendments is unappropriated surplus or additional revenue.

Account Number	Account Name	AdditionalDescription Amount
10-5111-8744	Comm Srvs-Contract-Fire Suppression	142,409Unused budgeted funding from FY 24 to use for training complex site paving and training tower garage modifications in FY 25
31-5400-2175	Refunds/Reimbursments Expense	16,717Bulk water account refunds on inactive accounts
31-5401-6542	Improvements to Building	14,969Additional for water treatment plant roof replacement. Budgeted \$60,000; project cost \$74,969
31-5856-2158	Misc Contractual	90,000Surface water treatment plant study
10-5998-4331	Transfer to Water	90,000Surface water treatment plant study
31-4310-5510	Transfer from General Fund	90,000Surface water treatment plant study
32-5850-6544	Improvements Other Than Building	7,390Wastewater Treatment Plant cell bypass project change order #2.

47-5470-6547 Equipment/Furniture

12,929 Additional cost for one Watch Guard video system \$1,366 and full cost of second video system \$11,563. Two systems were budgeted, unable to replace with current system as they are outdated and the cost for one new system is more than had budgeted for two.

Background

Alignment to Strategic Doing (SD) and/or Other Plans

SD Commitment
SD Commitment Strategy
SD Commitment KPI
SD Outcome
SD Outcome Strategy
SD Outcome KPI
2014 Master Plan
2015 Downtown Master Plan

Budget/Fiscal Impact

Fund/Department: Various
Project/Line Item(s): Various
Budgeted Amount
Anticipated Amount: \$464,414

Action Requested/Recommended Motion

Approve resolution no. 2024-42 as presented.

Attachments

1. Resolution FY 25 October 28, 2024
2. Amendment Detail FY 25 October 28, 2024

RESOLUTION NO. 2024-42

A RESOLUTION AMENDING THE BUDGET OF THE CITY OF DOUGLAS, WYOMING,
FOR THE FISCAL YEAR 2025.

WHEREAS, the budget may be increased pursuant to Wyoming Statue §16-4-113; and

WHEREAS, the source of the revenue is unappropriated surplus or additional revenue; and

WHEREAS, notice has been duly given and a public hearing was held; and

WHEREAS, it appears that the procedural requirements and conditions precedent to action by the City Council have been observed; and

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF DOUGLAS, WYOMING, that amendments are to be made to the City’s FY 2025 adopted budget as set forth on the attached listing.

PASSED, APPROVED, AND ADOPTED this 28th day October, 2024.

Kim Pexton, Mayor

Attest:

Mary Nicol, City Clerk

BUDGET AMENDMENT LISTING FY 2025 - October 28, 2024

Account Number	Account Name	Additional Amount	Description
10-5111-8744	Comm Srvc-Contract-Fire Suppression	142,409	Unused budgeted funding from FY 24 to use for training complex site paving and training tower garage modifications in FY 25
31-5400-2175	Refunds/Reimbursements	16,717	Bulk water account refunds on inactive accounts
31-5401-6542	Improvements to Building	14,969	Additional for water treatment plant roof replacement. Budgeted \$60,000; project cost \$74,969
31-5856-2158	Misc Contractual	90,000	Surface water treatment plant study
10-5998-4331	Transfer to Water	90,000	Surface water treatment plant study
31-4310-5510	Transfer from General Fund	90,000	Surface water treatment plant study
32-5850-6544	Improvements Other Than Building	7,390	Wastewater Treatment Plant cell bypass project change order #2.
47-5470-6547	Equipment/Furniture	12,929	Additional cost for one Watch Guard video system \$1,366 and full cost of second video system \$11,563. Two systems were budgeted, unable to replace with current system as they are outdated and the cost for one new system is more than had budgeted for two.



Agenda Item Report

City Council – October 28, 2024

Item

Planning & Zoning Commission Appointment

Responsible Staff Contact

Clara Chaffin

Recommendation

Recommend appointment of Carl Kusters to the Douglas Planning and Zoning Commission.

Executive Summary

Two applications have been received for the open seat on the Douglas Planning & Zoning Commission. Applicants include Carl Kusters, who is currently serving on the Converse County Tourism Promotion Board, and John O. Lund III, who previously served on the Transportation Board in the City of Fort Collins, Colorado.

Background

n/a

Alignment to Strategic Doing (SD) and/or Other Plans

n/a

Budget/Fiscal Impact

n/a

Action Requested/Recommended Motion

I move to appoint Carl Kusters to the Douglas Planning & Zoning Commission for a three-year term ending October 25, 2027.

Attachments

1. Kusters Application
2. Lund Application



CITY OF DOUGLAS
Volunteer Application

Name of Applicant:

Carl Kusters

Address:

721 S. 16th St

City/State/Zip:

Douglas, WY 82633

Mailing Address (if different from above):

Home Phone:

Cell Phone:

(307) 359-3229

Work Phone:

Email:

ckusters@hotmail.com

1. Are you a resident of the City of Douglas? ☒ Yes ☐ No

(This is a requirement for Planning & Zoning Commission/Board of Adjustments only.)

2. I am interested in serving on the following Boards/Commissions (Please all that apply):

Boards/Commissions/Committees:

- ☒ Douglas Planning & Zoning Commission/Board of Adjustments
☐ Historic Preservation Commission
☐ Converse County Tourism Promotion Board
☐ Douglas Housing Authority Board
☐ Federal Urban Systems Advisory Committee
☐ Douglas Board of Appeals
☐ Steering Committee Member (when applicable)
☐ Focus Group Member (when applicable)
☐ Other: _____

3. Have you served on any of these Boards/Commissions previously? ☐ Yes ☒ No

4. If "Yes", please indicate which Boards/Commissions and when you served:

"2018-2024"

Tourism board

5. In what community/communities did you previously serve?

County

Douglas / Converse

6. In what position(s) would you be willing to serve? (Please select all that apply.)

- ☒ Chairperson
☒ Vice Chairperson
☐ Secretary
☐ Treasurer
☒ Board, Commission, or Committee member only

7. Do you understand the attendance requirements as provided per Douglas Municipal Code and/or the Bylaws of the Board or Commission you wish to serve on? ☒ Yes ☐ No

8. If "No", please provide a description of your question(s): _____

9. Why are you seeking this appointment(s)?

I want to be more involved with the city. Some day down the road I want to run for Council and this is a good step in that direction.

Signature of Applicant

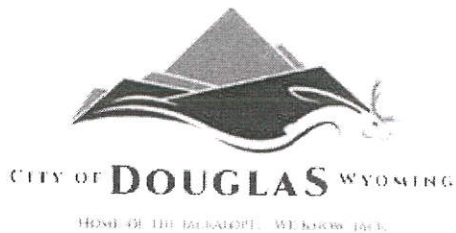
Date

For Office Use Only:

Selected for: _____

Length of Term/Dates: _____

Additional Information: _____



Planning and Zoning Commission

Applicant Questionnaire

101 N. 4th Street / P. O. Box 1030

Douglas, Wyoming 82633

307-358-2132, Fax: 307-358-2133

Name of Applicant:

Carl Kusters

This questionnaire will be utilized by the City Council in their selection process for the City of Douglas Planning and Zoning Commission. Please answer as honestly and fully as possible. Feel free to use additional pages if needed.

1) What positive steps have you noticed in making Douglas a more liveable and attractive community?

- Everything around the new Sackalopes (Sack & Harriette)
- Farmers market, Octoberfest, Sackalope days, events at the fair grounds.

2) What additional actions would you like to see happen in achieving this goal? What types of development do you think would be advantageous?

- Cleaning up some of our older buildings/businesses.
- make easier access to bikers, walkers, children to cross busy streets.
- more things for families and our youth to do in the community.

3) What do you see as the biggest challenges to future development in Douglas?

- Buy in from the community.
- Cost of building supplies.
- Consistent workforce.

4) Have you ever attended a Planning & Zoning Commission Meeting?

NO

5) What do you see as the role of the Planning & Zoning Commission?

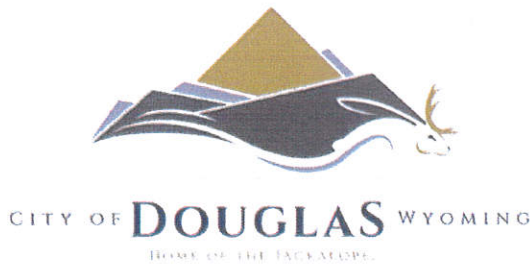
- To determine what is best for ~~the~~ Douglas when it comes to infrastructure and businesses,

6) What qualities do you possess that you believe would make you a good commissioner?

- Dedicated to Douglas & its citizens.
- Well known ~~well~~ in the community.
- Experience from other boards.

Community Development Department Comments: _____

Staff Recommendation: _____



Volunteer Application

Return to: 101 N. 4th Street / P.O. Box 1030
Douglas, WY 82633
307-358-3462, Fax: 307-358-6447

Name of Applicant: John O Lund III

Address: 1208 Townsend CT City/State/Zip: Douglas/WY/82633

Mailing Address (if different from above): _____

Home Phone:	Cell Phone: 970-227-3529	Work Phone:	Email: johnlund3@vcn.com
-------------	------------------------------------	-------------	------------------------------------

1. Are you a resident of the City of Douglas? ☒ Yes ☐ No

2. I am interested in serving on the following Boards/Commissions (Please all that apply):

Boards/Commissions/Committees:

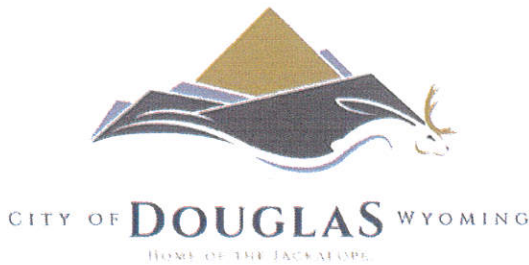
- ☒ Douglas Planning & Zoning Commission/Board of Adjustments
- ☐ Historic Preservation Commission
- ☐ Converse County Tourism Promotion Board
- ☐ Douglas Housing Authority Board
- ☐ Federal Urban Systems Advisory Committee
- ☐ Douglas Board of Appeals
- ☐ Steering Committee Member (when applicable)
- ☐ Focus Group Member (when applicable)
- ☐ Community Facility Task Force
- ☐ Arts & Culture Board of Trustees
- ☐ Recycling Task Force
- ☐ Other: _____

3. Have you served on any of these Boards/Commissions previously? ☐ Yes ☒ No

4. If "Yes", please indicate which Boards/Commissions and when you served: _____

5. In what community/communities did you previously serve? Was on the Fort Collins CO
Transprotation for 4 years.

Volunteer Application
Page 1 of 2



Volunteer Application

Return to: 101 N. 4th Street / P.O. Box 1030
Douglas, WY 82633
307-358-3462, Fax: 307-358-6447

6. In what position(s) would you be willing to serve? *(Please select all that apply.)*

- ☐ Chairperson
- ☒ Vice Chairperson
- ☐ Secretary
- ☐ Treasurer
- ☒ Board, Commission, or Committee member only

7. Do you understand the attendance requirements as provided per Douglas Municipal Code and/or the Bylaws of the Board or Commission you wish to serve on? ☒ Yes ☐ No

8. If "No", please provide a description of your question(s): _____

9. Why are you seeking this appointment(s)? I enjoyed my time on the Fort Collins CO. Transportation Board.

I like giving back to the community whenever possible. I believe my experience in the Air Force & at the USDA could be of
benefit to the Douglas community.



Signature of Applicant

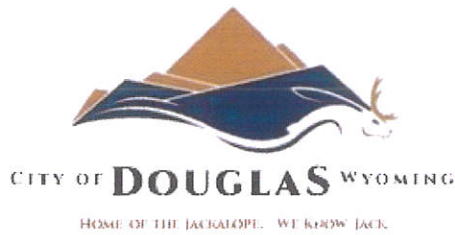
10-9-2024

Date

For Office Use Only:

Selected for: _____
Length of Term/Dates: _____
Additional Information: _____

Volunteer Application
Page 2 of 2



PLANNING AND ZONING
COMMISSION
APPLICANT QUESTIONNAIRE

101 N. 4th Street / P. O. Box 1030
Douglas, Wyoming 82633
307-358-2132, Fax: 307-358-2133

Name of Applicant: John Lund

This questionnaire will be utilized by the City Council in their selection process for the City of Douglas Planning and Zoning Commission. Please answer as honestly and fully as possible. Feel free to use additional pages if needed.

1) What positive steps have you noticed in making Douglas a more liveable and attractive community?

public walkways & access building improvements

2) What additional actions would you like to see happen in achieving this goal? What types of development do you think would be advantageous?

Street upgrades

3) What do you see as the biggest challenges to future development in Douglas?

Remote location to larger areas/cities

4) Have you ever attended a Planning & Zoning Commission Meeting?

yes in colorado

5) What do you see as the role of the Planning & Zoning Commission?

Strategic development of city & GMA

6) What qualities do you possess that you believe would make you a good commissioner?

Time pmp cert. 40+ years in Fed government

Community Development Department Comments: _____

Staff Recommendation: _____



Agenda Item Report

City Council – October 28, 2024

Item

Urban Systems Advisory Board Committee Appointment

Responsible Staff Contact

Clara Chaffin

Recommendation

Recommend appointment of John O. Lund III to the Federal Urban Systems Advisory Committee.

Executive Summary

An application was received from John O. Lund III for the Planning and Zoning Commission vacancy. Due to his previous experience on the Fort Collins, Colorado Transportation Board, Mr. Lund was contacted and asked if he would consider serving on the Federal Urban Systems Advisory Committee, to which he agreed.

Background

n/a

Alignment to Strategic Doing (SD) and/or Other Plans

n/a

Budget/Fiscal Impact

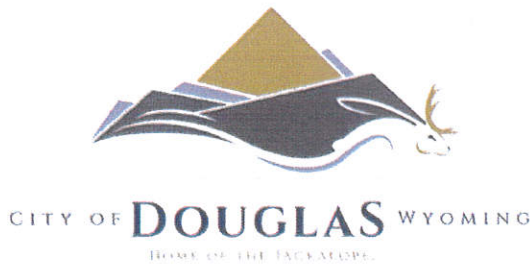
n/a

Action Requested/Recommended Motion

I move to appoint John O. Lund III to the Federal Urban Systems Advisory Committee for a four-year term ending December 31, 2028.

Attachments

1. Lund Application



Volunteer Application

Return to: 101 N. 4th Street / P.O. Box 1030
Douglas, WY 82633
307-358-3462, Fax: 307-358-6447

Name of Applicant: John O Lund III

Address: 1208 Townsend CT City/State/Zip: Douglas/WY/82633

Mailing Address (if different from above): _____

Home Phone:	Cell Phone: 970-227-3529	Work Phone:	Email: johnlund3@vcn.com
-------------	------------------------------------	-------------	------------------------------------

1. Are you a resident of the City of Douglas? ☒ Yes ☐ No

2. I am interested in serving on the following Boards/Commissions (Please all that apply):

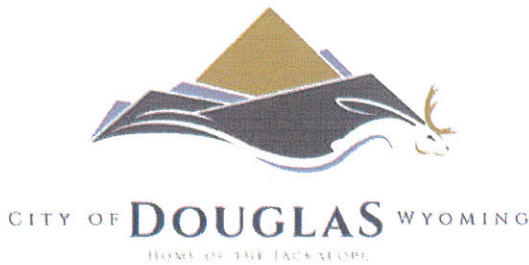
Boards/Commissions/Committees:

- ☒ Douglas Planning & Zoning Commission/Board of Adjustments
- ☐ Historic Preservation Commission
- ☐ Converse County Tourism Promotion Board
- ☐ Douglas Housing Authority Board
- ☐ Federal Urban Systems Advisory Committee
- ☐ Douglas Board of Appeals
- ☐ Steering Committee Member (when applicable)
- ☐ Focus Group Member (when applicable)
- ☐ Community Facility Task Force
- ☐ Arts & Culture Board of Trustees
- ☐ Recycling Task Force
- ☐ Other: _____

3. Have you served on any of these Boards/Commissions previously? ☐ Yes ☒ No

4. If "Yes", please indicate which Boards/Commissions and when you served: _____

5. In what community/communities did you previously serve? Was on the Fort Collins CO
Transprotation for 4 years.



Volunteer Application

Return to: 101 N. 4th Street / P.O. Box 1030
Douglas, WY 82633
307-358-3462, Fax: 307-358-6447

6. In what position(s) would you be willing to serve? *(Please select all that apply.)*

- ☐ Chairperson
- ☒ Vice Chairperson
- ☐ Secretary
- ☐ Treasurer
- ☒ Board, Commission, or Committee member only

7. Do you understand the attendance requirements as provided per Douglas Municipal Code and/or the Bylaws of the Board or Commission you wish to serve on? ☒ Yes ☐ No

8. If "No", please provide a description of your question(s): _____

9. Why are you seeking this appointment(s)? I enjoyed my time on the Fort Collins CO. Transportation Board.

I like giving back to the community whenever possible. I believe my experience in the Air Force & at the USDA could be of
benefit to the Douglas community.



Signature of Applicant

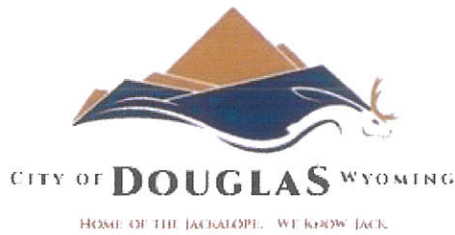
10-9-2024

Date

For Office Use Only:

Selected for: _____
Length of Term/Dates: _____
Additional Information: _____

Volunteer Application
Page 2 of 2



PLANNING AND ZONING
COMMISSION
APPLICANT QUESTIONNAIRE

101 N. 4th Street / P. O. Box 1030
Douglas, Wyoming 82633
307-358-2132, Fax: 307-358-2133

Name of Applicant: John Lund

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public walkways & access building improvements

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Street upgrades

3) What do you see as the biggest challenges to future development in Douglas?

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4) Have you ever attended a Planning & Zoning Commission Meeting?

yes in colorado

5) What do you see as the role of the Planning & Zoning Commission?

Strategic development of city & GMA

6) What qualities do you possess that you believe would make you a good commissioner?

Time pmp cert. 40+ years in Fed government

Community Development Department Comments: _____

Staff Recommendation: _____



Agenda Item Report City Council – October 28, 2024

Item

Bid Award: Clearfield Booster Station

Responsible Staff Contact

John Stearns

Recommendation

It's my recommendation that we accept the bid from Wayne Coleman for \$2,010,307.00. This project is going to span 2 Budget years and will have to be re-budgeted being this project's final completion will not be until October 2025. Clearfield Booster Station is a vital part of the distribution system and is due to be replaced.

Executive Summary

Clearfield Booster Station is aging and in need of replacement as the demand on the pumps has increased substantially for the pumps primarily due to the school's new irrigation system and the new Justice Center. Recently, we have been forced to run two pumps almost non-stop just to keep up with demand. We have had to run the third pump in the summer also. This is only a three pump station, and the station is at max capacity.

This has resulted in the need to install bigger pumps that can handle the demand and future growth.

Background

The Clearfield Booster Station pumps water up to the Clearfield Tank to supply water to the clearfield area. The clearfield area is in a high pressure zone. There are two pressure-reducing valve vaults that hold back water from the low pressure zone to the rest of Douglas. The pressure reducing valve vaults were added later in the design because of their age and all the repairs done lately.

Alignment to Strategic Doing (SD) and/or Other Plans

[SD24 Outcome](#)
Station

Begin Construction on the Clearfield Booster

[SD24 Strategy](#)
Infrastructure

Continued Investment Extension of life of

[SD24 KPI](#)

WCC-19

[2014 Master Plan](#)

[2015 Downtown Master Plan](#)

Budget/Fiscal Impact

Fund/Department	31-5840-2153
Project/Line Item(s)	Clearfield Booster Station
Budgeted Amount	\$1,400,000.00
Anticipated Amount	\$2,010,307.00

Action Requested/Recommended Motion

Accept the bid from Wayne Coleman Construction for the Clearfield Booster Station replacement project in the amount of \$2,010,307.00 and authorize the City Manager to sign associated documents.

Attachments

1. Wayne Coleman Bid
2. Recommendation for Award_Clearfield

EXHIBIT "A"
STANDARD
BID FORM

PROJECT IDENTIFICATION: City of Douglas – Clearfield Pump Station Reconstruction Project

THIS BID SUBMITTED TO: City of Douglas (OWNER)
101 North 4th Street
P.O. Box 1030
Douglas, Wyoming 82633

1. The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an Agreement with OWNER in the form included in the Contract Documents and to substantially complete all Work as specified or indicated in the Contract Documents for the Contract Price.
2. Bidder accepts all of the terms and conditions of the Instructions to Bidders, including without limitation those dealing with the disposition of Bid Bond. This Bid will remain subject to acceptance for sixty (60) days after the day of Bid opening. Bidder will sign and deliver counterparts of the Agreement, the Bonds and other documents required by the Bidding Requirements within ten (10) days after the date of OWNER's Notice of Award.
3. Notice that preferences will be granted pursuant to Wyoming Statutes Section 16-6-101, et seq., is hereby acknowledged.
4. In submitting this Bid, Bidder represents, as more fully set forth in the Agreement, that:

- A. Bidder has examined and carefully studied the Bidding Documents and the following addenda, receipt of all which is hereby acknowledged:

Addendum No. <u>1</u>	Dated <u>10/17/2024</u>
Addendum No. _____	Dated _____
Addendum No. _____	Dated _____

- B. Bidder has examined the site and locality where the work is to be performed, the federal, state and local Laws and Regulations, and the conditions affecting cost, progress, or performance of the work and has been such independent investigations as Bidder deems necessary;
- C. This Bid is genuine and not made in the interest of or on behalf of any undisclosed person, firm or corporation and is not submitted in conformity with

any agreement or rules of any group, association, organization or corporation; Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid; Bidder has not solicited or induced any person, firm or corporation to refrain from bidding; and Bidder has not sought by collusion to obtain for itself any advantage over any other Bidder or over OWNER.

5. Bidder may bid any or all schedules and will complete the Work for the bid schedule price(s) based upon materials actually furnished and installed and services actually provided, based on the lump sum and unit prices provided in the itemized bid schedule(s).
6. Bidder agrees that the work for the City of Douglas will be as provided above, substantially and finally completed.
7. Bidder accepts the provisions of the Agreement as to liquidated damages in the event of failure to complete the work on time, unless otherwise stated as provided below. Bidder agrees that such liquidated damages are not a penalty and that the amount provided is as close to an estimate as possible to the actual damages. Any exceptions or objections to this provision are stated in writing and attached hereby by Bidder.
8. The following documents are attached to and made a condition of this Bid:

Required Bid Security in the form of a Bid Bond.
Certificate of Residency (if applicable)

9. Communications concerning this Bid shall be addressed to:

Address of Bidder: Wayne Coleman Construction, Inc.
PO Box 2440, Mills, WY 82644

10. The terms used in this Bid are defined in and have the meanings assigned to them in the General Conditions, as modified by the Supplementary Conditions.

Submitted on October 22, 2024.

Bidder is bidding as a Resident (Insert Resident or Non-Resident)

IF BIDDER IS:

AN INDIVIDUAL

By: _____ (seal)
(Individual's Name)

doing business as: _____

Business Address: _____

Phone Number: _____

A PARTNERSHIP

By: _____ (seal)
(Firm's Name)

(General Partner)

Business Address: _____

Phone Number: _____

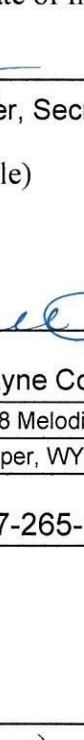
A CORPORATION OR LIMITED LIABILITY COMPANY

By: Wayne Coleman Construction, Inc. (seal)
(Corporation's or Limited Liability Company's Name)

Wyoming
(State of Incorporation or Organization)

By:  (seal)
Elizabeth Milberger, Secretary
(Title)

(Seal)

Attest: 

Business Address: Wayne Coleman Construction, Inc.
1898 Melodi Lane
Casper, WY 82601

Phone Number: 307-265-3158

A JOINT VENTURE

By: _____ (seal)
(Name)

(Address)

By: _____ (seal)
(Name)

(Address)

(Each joint venturer must sign. The manner of signing for each individual, partnership, and corporation that is a party to the joint venture should be in the manner indicated above.)

ADDENDUM #1

To the

BIDDING AND CONTRACT DOCUMENTS

For the

**City of Douglas
Clearfield Pump Station Reconstruction Project
Project No. 22-066**

Prepared for:
City of Douglas
101 North Fourth St.
Douglas, WY 82633

Date of the Addendum October 17, 2024

Receipt of this Addendum must be acknowledged by filling in the spaces provided below and including one (1) copy attached to the bid.

APPROVED:



Nick Larsen, City Engineer

ACKNOWLEDGEMENT OF RECEIPT OF
ADDENDUM

Wayne Coleman Construction, Inc.

Company

Elizabeth Milberger

Name



Signature

Secretary

Title

October 17, 2024

Receipt Date

BID SCHEDULE
CITY OF DOUGLAS
CLEARFIELD PUMP STATION RECONSTRUCTION PROJECT

Contractor shall furnish and install items as shown on the Drawings or called for in the Specifications. All costs not included in this schedule that are necessary to provide a complete, functional project as depicted in the Drawings and Specifications are to be considered incidental and merged with the costs of other related items. The following is a list of

LS = Lump Sum
SY = Square Yard

EA = Each
SF = Square Foot

LF = Linear Feet
CY = Cubic Yard

AC = Acre
Ton = Ton

Item	Description	Unit	Quantity	Unit Cost	Total Cost
1	Mobilization and Bonds	LS	1	191,362.00	191,362.00
2	Demlition and Removal	LS	1	36,000.00	36,000.00
3	Earthwork and Site Preparation	LS	1	31,000.00	31,000.00
4	Pump Station Building	LS	1	725,000.00	725,000.00
5	Mechanical Equipment	LS	1	270,000.00	270,000.00
6	Electrical and SCADA	LS	1	316,000.00	316,000.00
7	PRV Replacment	LS	1	32,000.00	32,000.00
8	12-inch DR18 PVC Waterline	LF	305	138.00	42,090.00
9	12-inch Fittings	EA	12	4,000.00	48,000.00
10	12-inch Gate Valves	EA	5	10,000.00	50,000.00
11	Fire Hydrant Assembly	LS	1	29,000.00	29,000.00
12	Connect to Existing Main	EA	2	17,500.00	35,000.00
13	4-inch PVC Drain Pipe	LS	1	5,500.00	5,500.00
14	Foundation Material	CY	25	85.00	2,125.00
15	Select Backfill	CY	100	85.00	8,500.00
16	6" Grading 'W' Base Course	SY	350	35.00	12,250.00
17	Concrete Flatwork	SY	40	141.00	5,640.00
18	Concrete Sidewalk	LF	110	58.00	6,380.00
19	Concrete Curb and Gutter	LF	110	62.00	6,820.00
20	4" Asphalt / 8" Grading 'W' Base Course	SY	200	100.00	20,000.00
21	Chain Link Fencing	LF	195	152.00	29,640.00
22	Irrigation Adjustment	LS	1	45,000.00	45,000.00
23	Landscaping Repair	LS	1	29,000.00	29,000.00
24	Traffic Control	LS	1	14,000.00	14,000.00
25	Force Account	FA	20,000	\$1.00	\$20,000.00
Total Base Bid					2,010,307.00

**STANDARD
BID BOND**

KNOW ALL MEN BY THESE PRESENTS, that we, the undersigned, Wayne Coleman Construction, Inc.
as Principal, and The Ohio Casualty Insurance Company Surety, are hereby held and firmly
bound, pursuant to Wyoming Statute Section 15-1-113(f), unto the City of Douglas, as OWNER,
in the penal sum of Five Percent of Amount Bid
Dollar(s) (\$ 5%) for the payment of which, well and truly to be made, we
hereby jointly and severally bind ourselves, successors and assigns.

The Condition of the above obligation is such that whereas the Principal has submitted to
the City of Douglas, a certain BID, whereby it has offered to enter into an Agreement in
writing with OWNER, for the City of Douglas – Clearfield Pump Station

Reconstruction Project

NOW, THEREFORE,

- A. If said BID shall be rejected; or,
- B. If said BID shall be accepted and the Principal shall execute and deliver the
Agreement to OWNER within ten (10) days after Notice of Award (which shall
constitute presentation of the Agreement to the Principal for the purpose of
execution) and shall furnish Bonds in forms furnished by OWNER for Principal's
faithful performance of said Agreement and for the payment of all persons
performing labor or furnishing materials in connection therewith, and shall
otherwise proceed with the performance of said Agreement, then this obligation
shall be void, otherwise the same shall remain in full force and effect and
OWNER may proceed against the BOND. It is expressly understood and agreed,
however, that the liability of Surety for any and all claims hereunder shall, in no
event, exceed the penal amount of this obligation as herein stated.

The Surety, for value received, hereby stipulates and agrees that the obligations of said Surety
and its BOND shall be in no way impaired or affected by an extension of the time within which
the OWNER may accept such BID, to a maximum of sixty (60) days after its submission to
OWNER; and said Surety does hereby waive notice of any such extension.

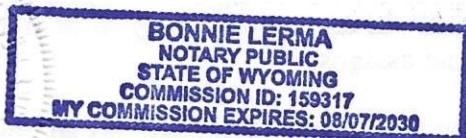
IN WITNESS WHEREOF, the Principal and the Surety have hereunto set their hands and seals,
and such of them as are corporations have caused their corporate seals to be hereto affixed and
these
presents to be signed by their proper officers, this 10th day of October, 2024.



Attest:

Secretary or Authorized Witness for Corporate Bidder

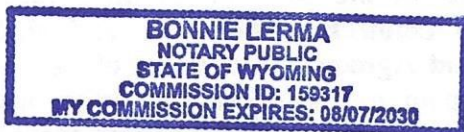
(Seal)



State of Wyoming)
County of Natrona) ss.

The foregoing Bid Bond was executed before me by Caleb J. Coleman
on behalf of Wayne Coleman Construction, Inc., this 22nd day of October, 2021.

My Commission Expires: August 7, 2030



State of Wyoming)
County of Natrona) ss.

The foregoing Bid Bond was executed before me by Denise Sherwin
who represented that he/she was the Attorney-in-Fact for the above named Surety, this
10th day of October, 2024.

My Commission Expires: March 8, 2025



Wayne Coleman Construction, Inc.
Principal (Corporation, Partnership, Individual)

BY: [Signature]
(Authorized Representative or Partnership)

Caleb J. Coleman
(Print or Type Name)
P.O. Box 2440
Mills, WY 82644
(Address)

[Signature]
Notary Public

The Ohio Casualty Insurance Company
Surety

BY: [Signature]
Attorney-in-Fact for Surety

Denise Sherwin, Attorney-in-Fact
175 Berkeley Street
(Address)
Boston, MA 02116





POWER OF ATTORNEY

Liberty Mutual Insurance Company
The Ohio Casualty Insurance Company
West American Insurance Company

KNOWN ALL PERSONS BY THESE PRESENTS: That The Ohio Casualty Insurance Company is a corporation duly organized under the laws of the State of New Hampshire, that Liberty Mutual Insurance Company is a corporation duly organized under the laws of the State of Massachusetts, and West American Insurance Company is a corporation duly organized under the laws of the State of Indiana (herein collectively called the "Companies"), pursuant to and by authority herein set forth, does hereby name, constitute and appoint Denise Sherwin all of the city of Casper, state of WY its true and lawful attorney-in-fact, with full power and authority hereby conferred to sign, execute and acknowledge the following surety bonds, undertakings, recognizances, contracts of indemnity, and all other surety obligations related thereto, the execution of which shall be binding upon the Companies as if it had been duly signed and executed by its own officers:

Principal Name: Wayne Coleman Construction, Inc.
Obligee Name: City of Douglas
Surety Bond Number: Bid Bond

Bond Amount: See Bond Form

IN WITNESS WHEREOF, this Power of Attorney has been subscribed by an authorized officer or official of the Companies and the corporate seals of the Companies have been affixed thereto this 9th day of September, 2024.



Liberty Mutual Insurance Company
The Ohio Casualty Insurance Company
West American Insurance Company

By: Nathan J. Zangerle
Nathan J. Zangerle, Assistant Secretary

STATE OF PENNSYLVANIA ss
COUNTY OF MONTGOMERY

On this 9th day of September, 2024, before me personally appeared Nathan J. Zangerle, who acknowledged himself to be the Assistant Secretary of Liberty Mutual Insurance Company, The Ohio Casualty Company, and West American Insurance Company, and that he, as such, being authorized so to do, execute the foregoing instrument for the purposes therein contained by signing on behalf of the corporations by himself as a duly authorized officer.

IN WITNESS WHEREOF, I have hereunto subscribed my name and affixed my notarial seal at Plymouth Meeting, Pennsylvania, on the day and year first above written.



Commonwealth of Pennsylvania - Notary Seal
Teresa Pastella, Notary Public
Montgomery County
My commission expires March 28, 2025
Commission number 1126044
Member, Pennsylvania Association of Notaries

By: Teresa Pastella
Teresa Pastella, Notary Public

This Power of Attorney is made and executed pursuant to and by authority of the following By-laws and Authorizations of The Ohio Casualty Insurance Company, Liberty Mutual Insurance Company, and West American Insurance Company which resolutions are now in full force and effect reading as follows:

ARTICLE IV – OFFICERS: Section 12. Power of Attorney.

Any officer or other official of the Corporation authorized for that purpose in writing by the Chairman or the President, and subject to such limitation as the Chairman or the President may prescribe, shall appoint such attorneys-in-fact, as may be necessary to act in behalf of the Corporation to make, execute, seal, acknowledge and deliver as surety any and all undertakings, bonds, recognizances and other surety obligations. Such attorneys-in-fact, subject to the limitations set forth in their respective powers of attorney, shall have full power to bind the Corporation by their signature and execution of any such instruments and to attach thereto the seal of the Corporation. When so executed, such instruments shall be as binding as if signed by the President and attested to by the Secretary. Any power or authority granted to any representative or attorney-in-fact under the provisions of this article may be revoked at any time by the Board, the Chairman, the President or by the officer or officers granting such power or authority.

ARTICLE XIII – Execution of Contracts: Section 5. Surety Bonds and Undertakings.

Any officer of the Company authorized for that purpose in writing by the chairman or the president, and subject to such limitations as the chairman or the president may prescribe, shall appoint such attorneys-in-fact, as may be necessary to act in behalf of the Company to make, execute, seal, acknowledge and deliver as surety any and all undertakings, bonds, recognizances and other surety obligations. Such attorneys-in-fact, subject to the limitations set forth in their respective powers of attorney, shall have full power to bind the Company by their signature and execution of any such instruments and to attach thereto the seal of the Company. When so executed such instruments shall be as binding as if signed by the president and attested by the secretary.

Certificate of Designation – The President of the Company, acting pursuant to the Bylaws of the Company, authorizes Nathan J. Zangerle, Assistant Secretary to appoint such attorneys-in-fact as may be necessary to act on behalf of the Company to make, execute, seal, acknowledge and deliver as surety any and all undertakings, bonds, recognizances and other surety obligations.

Authorization – By unanimous consent of the Company's Board of Directors, the Company consents that facsimile or mechanically reproduced signature of any assistant secretary of the Company, wherever appearing upon a certified copy of any power of attorney issued by the Company in connection with surety bonds, shall be valid and binding upon the Company with the same force and effect as though manually affixed.

I, Renee C. Llewellyn, the undersigned, Assistant Secretary of Liberty Mutual Insurance Company, The Ohio Casualty Insurance Company, and West American Insurance Company do hereby certify that this power of attorney executed by said Companies is in full force and effect and has not been revoked.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed the seals of said Companies this 10th day of October, 2024.



By: Renee C. Llewellyn
Renee C. Llewellyn, Assistant Secretary



STATE OF WYOMING

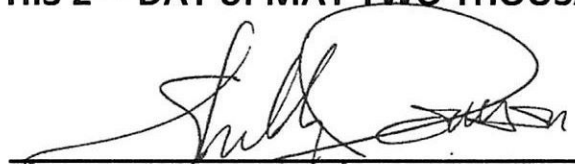
CERTIFICATE OF RESIDENCY



Contractor Number: 0344

WAYNE COLEMAN CONSTRUCTION, INC.

HAS BEEN GRANTED RESIDENCY STATUS PURSUANT TO WYOMING STATUTE 16-6-101, AS AMENDED. FIVE PERCENT PREFERENCE SHALL BE ALLOWED WHEN BIDDING ON ANY PUBLIC WORKS CONTRACT FOR A PERIOD OF ONE (1) YEAR FROM THE DATE CERTIFICATION IS GRANTED.
GRANTED THIS 2ND DAY of MAY TWO THOUSAND AND 24



Michele Johnson, Program Manager

EXPIRATION DATE: 5/1/2025



To verify the authenticity of the certificate,
please contact our office at 307-777-7261 or visit
wyomingworkforce.org/businesses/labor/info

CERTIFICATE SERIAL NUMBER: 0205202432



October 23, 2024

JD Cox, City Manager
City of Douglas
P.O. Box 1030
Douglas, Wyoming 82633

Re: Recommendation of Award – Clearfield Pump Station Reconstruction Project

Dear Mr. Cox:

Bids were received for the City of Douglas Clearfield Pump Station Reconstruction Project on October 22, 2024 at 2:00PM MDT. One bid was received. Wayne Coleman Construction, Inc. submitted a bid with a Total Base bid price of \$2,010,307.00. A detailed breakdown of the bid is provided in the enclosed bid tabulation. There were no alternate bid items on this project. The budgeted amount for the project is \$1,400,000.00.

We have thoroughly reviewed the bid provided by Wayne Coleman Construction, Inc. The bid was accurate and complete. There are no discrepancies in their bid and the documents were completed properly.

Wayne Coleman Construction, Inc. (WCCI) has recently completed several projects for the City of Douglas. They were all successful projects, and we did not encounter any issues working with WCCI.

Even though we only received one bid, I do not believe that rebidding the project will generate more interest in the project. The pre-bid meeting was well attended and there were 20 contractors and/or suppliers on the plan holders list.

If possible, CEPI recommends award of the contract for the Clearfield Pump Station Reconstruction Project to Wayne Coleman Construction, Inc. in the full amount of \$2,010,307.00.

Please feel free to contact me if you have any questions or concerns.

Sincerely,
Civil Engineering Professionals, Inc.

A handwritten signature in black ink, appearing to read "Nick Larsen", is positioned below the typed name.

Nick Larsen, P.E.

Cc: John Harbarger, Public Works Director
Enc.



Agenda Item Report City Council – October 28, 2024

Item

Resolution 2024-41: Adopting The 2024 Update To The Hazard Mitigation Plan For Wyoming Region 2 Including Converse, Natrona, & Niobrara Counties

Responsible Staff Contact

Clara Chaffin

Recommendation

Recommend approval of Resolution 2024-41 as presented.

Executive Summary

Over the last year Converse County and partners including the City of Douglas have developed the 2024 Update to the Hazard Mitigation Plan for Wyoming Region 2 Including Converse, Natrona, & Niobrara Counties. Participation in this process and completion of all of the Tasks now enables the City of Douglas to received funding from FEMA.

To comply with FEMA Requirements, the consultant followed the Local Mitigation Planning Policy Guide FP 206-21-0002 (effective April 19, 2023) and 44 C.F.R. 201.6.

Fourteen tasks were required including:

Task 1: Initial Requests (Recent Community Plans / Relevant Hazard Studies, Disaster / Mitigation Photos, Notable Hazard Event Details, and HMPC Roster Additions).

Task 2: Past Mitigation Action Reporting.

Task 3: Mitigation Capability Assessment (Planning & Regulatory, Administrative & Technical, Financial, and Education & Outreach).

Task 4: HMP Incorporation.

Task 5: Hazard Risk Ranking.

Task 6: Local Vulnerability.

Task 7: Population Change & Development.

Task 8: Mitigation Action Ideas.

Task 9: New Mitigation Actions.

Task 10: Future Integration.

Task 11: Continued Public Engagement.

Task 12: Changing Priorities.

Task 13: Mitigation Successes.

Task 14: Other.

That document has now been approved by the Wyoming Office of Homeland Security and the Federal Emergency Management Agency (FEMA).

Converse County adopted the plan via Resolution No. 19-24 on October 15, 2024.

The adoption of this plan is the final item necessary for the City of Douglas National Flood Insurance Program (NFIP) Community Rating System (CRS) 5-year Recertification.

Background

Alignment to Strategic Doing (SD) and/or Other Plans

SD Commitment

SD Commitment Strategy

SD Commitment KPI

SD Outcome

SD Outcome Strategy

SD Outcome KPI

2014 Master Plan: Goal B4. Plan for and mitigate natural hazards.

2015 Downtown Master Plan

Budget/Fiscal Impact

Fund/Department

Project/Line Item(s)

Budgeted Amount

Anticipated Amount

Action Requested/Recommended Motion

I move to approve Resolution 2024-41 as presented.

Attachments

1. 2024-41 Resolution Adopting the Hazard Mitigation Plan
2. WY R2 HMP final 20241009 (no adoptions)

RESOLUTION NO. 2024-41

ADOPTING THE 2024 UPDATE TO THE HAZARD MITIGATION PLAN FOR WYOMING REGION 2 INCLUDING CONVERSE, NATRONA, & NIOBRARA COUNTIES

WHEREAS, the City of Douglas recognizes the threat that natural hazards pose to people and property within our community, and undertaking hazard mitigation actions will reduce the potential for harm to people and property from future hazard occurrences; and

WHEREAS, the U.S. Congress passed the Disaster Mitigation Act of 2000 (“Disaster Mitigation Act”) emphasizing the need for pre-disaster mitigation of potential hazards, and the Disaster Mitigation Act made available hazard mitigation grants to state and local governments; and

WHEREAS, the “2024 Update to the Hazard Mitigation Plan for Wyoming Region 2 Including Converse, Natrona, & Niobrara Counties” has been prepared in accordance with FEMA requirements at 44 C.F.R. 201.6; and

WHEREAS, an adopted Multi-Hazard Mitigation Plan is required as a condition of future funding for mitigation projects under multiple FEMA pre- and post-disaster mitigation grant programs; and

WHEREAS, the City of Douglas fully participated in the FEMA-prescribed mitigation planning process to prepare this Multi-Hazard Mitigation Plan; and

WHEREAS, the Wyoming Office of Homeland Security and the Federal Emergency Management Agency Region VIII officials have reviewed the “2024 Update to the Hazard Mitigation Plan for Wyoming Region 2 Including Converse, Natrona, & Niobrara Counties”, and approved it contingent upon this official adoption of the participating governing body; and

WHEREAS, the City of Douglas desires to comply with the requirements of the Disaster Mitigation Act and to augment its emergency planning efforts by formally adopting the “2024 Update to the Hazard Mitigation Plan for Wyoming Region 2 Including Converse, Natrona, & Niobrara Counties”; and

WHEREAS, adoption by the governing body for the City of Douglas demonstrates the jurisdiction’s commitment to fulfilling the mitigation goals and objectives outlined in this Multi-Hazard Mitigation Plan; and

WHEREAS, adoption of this legitimacies the plan and authorizes responsible agencies to carry out their responsibilities under the plan.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF DOUGLAS, WYOMING, adopts the “2024 Update to the Hazard Mitigation Plan for Wyoming Region 2 Including Converse, Natrona, & Niobrara Counties.”

PASSED, APPROVED, AND ADOPTED this 28th day of October, 2024.

Kim Pexton, Mayor

Attest:

Sonya Ortega, City Clerk

WYOMING REGION 2

CONVERSE, NATRONA, &
NIOBRARA COUNTIES



2024 UPDATE HAZARD MITIGATION PLAN

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EXECUTIVE SUMMARY

The Disaster Mitigation Act (DMA) is federal legislation that requires proactive, pre-disaster hazard mitigation planning as a prerequisite for some funding available under the Robert T. Stafford Act. The DMA encourages state and local authorities to work together on pre-disaster planning. The planning network called for by the DMA helps local governments articulate accurate needs for mitigation, resulting in faster allocation of funding and more cost-effective risk reduction projects.

Hazard mitigation is the use of long- and short-term strategies to reduce or alleviate the loss of life, personal injury, and property damage that can result from a disaster. It involves strategies such as planning, policy changes, programs, projects, and other actions that can mitigate the impacts of hazards. It is impossible to predict exactly when and where disasters will occur or the extent to which they will impact an area, but with careful planning and collaboration among public agencies, stakeholders, and citizens, it is possible to minimize losses that disasters can cause. The responsibility for hazard mitigation lies with many, including private property owners; business and industry; and local, state, and federal government.

This plan is the product of a 2023-24 planning process undertaken by the three counties in Wyoming Office of Homeland Security Region 2 – Converse, Natrona, and Niobrara. It is an update to the 2019 Region 2 Hazard Mitigation Plan (HMP) and is considered a living document.

The three counties, and a partnership of local governments and organizations within each, have developed and maintained this HMP to reduce risks from natural disasters and to comply with the DMA. This 2024 plan update builds upon the community's previous efforts and identifies the mitigation strategy that Region 2 will follow over the next five years.

Hazard Mitigation is a sustained action taken to reduce or eliminate long-term risk to people and property from hazards and their effects.

MITIGATION STRATEGY

MITIGATION GOALS

The Hazard Mitigation Planning Committee (HMPC) has identified the following hazard mitigation goals as the overarching framework for Region 2's hazard mitigation strategy. These goals are broad and express the overall, long-term vision for mitigating natural hazards throughout the county.

1. Reduce the human impacts, economic losses, and property damages caused by hazards
2. Implement mitigation actions and projects to reduce hazard impacts
3. Improve local mitigation capabilities
4. Reduce local costs for response and recovery following a natural disaster
5. Improve coordination across all local governments in implementing hazard mitigation
6. Strengthen public infrastructure and reduce hazard impacts on community lifelines
7. Increase public awareness and implementation of hazard mitigation

IDENTIFICATION AND ANALYSIS OF MITIGATION ACTIONS

As part of the HMP update, the HMPC developed a refreshed list of mitigation actions (i.e. – projects) to work towards accomplishing over the HMP's next five-year lifespan. Throughout the plan update process, the HMPC was informed of the comprehensive range of mitigation action types to consider. These types of action can include: natural systems protection, education & awareness programs, structure & infrastructure projects, and local plans & regulations. Additionally, it was acknowledged that nature-based solutions can be incorporated into many of these mitigation types.

HMPC workshops held over the course of the planning process focused on educating committee members of the multitude of mitigation idea resources available. Emphasis was placed on identifying actions that would help to mitigate the vulnerabilities of both new and existing structures, and infrastructure. As a final resource, the HMPC was also provided a "Mitigation Strategy Action Idea" document which was developed over the course of the planning process (**APPENDIX C: MITIGATION ACTION IDEAS GUIDE**). This document presented a number of suggested actions based on community input received, conversations amongst the HMPC over the course of the plan's development, and existing community plans.

Following the identification of the 2024 mitigation actions, prioritization of each action was conducted by each local government. According to the Federal Emergency Management Agency (FEMA) mitigation planning requirements, any prioritization system should have a special emphasis on the extent to which benefits are maximized. The HMPC reviewed

FEMA's STAPLEE methodology, in addition to a number of additional criteria, to determine those that the county would utilize. Ultimately, it was decided that the following criteria would be considered when prioritizing mitigation efforts, following a determination of positive cost-benefit:

- Social considerations – life / safety impact
- Administrative considerations – administrative / technical capability
- Economic considerations – project cost / reductions in future disaster costs
- Alignment with other local objectives
- Environmental considerations
- Lifeline protection
- Legal considerations
- Benefits to underserved communities

During the planning process, it was decided by the HMPC that mitigation actions would ultimately be prioritized by each government using a three-tiered High, Moderate, or Low methodology.

“High” priority was primarily designated to those actions with a:

- Moderate to High risk ranking
- Potential high risk to life safety, property, or the environment
- Consideration for the impacts of new development and growth

“Moderate” priority was in general designated to actions for hazards that were:

- Slow onset
- Localized impact events
- Larger impact hazards with a sporadic occurrence

A “Low” priority was assigned to those remaining actions that typically address low probability or low impact hazards, ensuring they are not prioritized above or compete with other more practical actions.

To ensure this updated HMP meets FEMA policy, one mitigation action has been identified, per natural hazard profiled in this HMP, for all participating local governments.

UPDATED MITIGATION ACTION PLAN

All counties and participating governments have reported on the status of the 2019 HMP actions and have created new mitigation actions for this 2024 HMP. These both are found in each individual county annex.

MITIGATION CAPABILITIES

The mitigation capability assessment examines the ability of Region 2 local governments to implement and manage the comprehensive mitigation strategy laid out in this HMP. The

strengths, weaknesses, and resources of each local government are identified here as a means for evaluating and maintaining effective and appropriate management of the region's hazard mitigation program.

Local governments are encouraged to utilize this assessment to identify those capabilities that they want to expand and improve upon, to enhance implementation efforts towards the region's mitigation strategy. The ability to do so is dictated by each local government's elected leadership, management, and available funding and staffing. It is also noted that grant funding opportunities are available to improve these capabilities.

Mitigation capabilities are classified into the following types:

- Planning & Regulatory
 - Plans
 - Building Code, Permitting, & Inspection
 - Land Use Planning & Ordinances
- Administrative & Technical
 - Administration
 - Staff
 - Technical
- Financial
 - Funding Resources
- Education & Outreach
 - Programs & Organizations

All counties and participating governments have reassessed their mitigation capabilities for this 2024 HMP. These are found in each individual county annex.

COMPLIANCE WITH FLOODPLAIN REQUIREMENTS

The National Flood Insurance Program (NFIP) makes federally backed flood insurance available to homeowners, renters, and business owners in participating communities. Base flood elevations and the boundaries of the 100- and 500-year floodplains are shown on Flood Insurance Rate Maps (FIRM), when available, which are the principal tool for identifying the extent and location of the flood hazard. FIRMs are the most detailed and consistent data source available, and for many communities they represent the minimum area of oversight under their floodplain management program.

Participants in the NFIP must, at a minimum, regulate development in floodplain areas in accordance with NFIP criteria. Before issuing a permit to build in a floodplain, participating jurisdictions must ensure the following criteria are met:

- New buildings and those undergoing substantial improvements must, at a minimum, be elevated to protect against damage by the 100-year flood.
- New floodplain development must not aggravate existing flood problems or increase damage to other properties.

The NFIP looks to reduce flood risk after a flood event. It does this through substantial damage / substantial improvement rules. These rules apply when a structure is more than 50% damaged or improved (by cost). The owner must build in a way that complies with current building codes and ordinances. This applies even if the structure was exempt from those rules before the damage or improvement. It also applies to damage from non-flood events like fire or wind. Substantial damage / substantial improvement allows communities to require owners of structures built before they joined the NFIP to comply with current standards. Communities are responsible for making substantial damage/substantial improvement determinations and notifying property owners.

All counties and participating governments have documented their NFIP compliance within each individual county annex.

PLANNING PROCESS

BACKGROUND

The 2024 Region 2 HMP is an update to the 2019 HMP. HMPs are community-led efforts designed to identify, manage, and avoid risks through pre-disaster event planning. This plan is designed to reduce the risks posed by hazards that affect Region 2 communities and must be updated and approved by FEMA every five years to maintain eligibility for FEMA Hazard Mitigation Assistance (HMA) Program Grants.

PURPOSE

The State of Wyoming's Office of Homeland Security (WOHS) coordinated with Region 2 counties to create a cross-regional Hazard HMP. The purpose of the HMP is to help plan for and implement hazard mitigation projects and activities, with the goal of reducing or eliminating losses from future hazard events. The counties of Converse, Natrona, and Niobrara, and with their respective local governments and communities, led these efforts to conduct local hazard assessment and analysis. Their efforts have demonstrated a commitment and perseverance to mitigating future risk. This plan will be used as a tool for Region 2 communities to guide resiliency and help decision makers direct mitigation activities.

BACKGROUND AND SCOPE

No community is immune from disasters. Past disasters within and around the region have caused loss of life, damaged property and infrastructure, and have impacted local communities' economic, social, and environmental well-being. Local hazard mitigation planning is a process of organizing community resources, identifying and assessing hazard risks, and determining how to best minimize or manage those risks. This process results in the HMP, which identifies specific mitigation actions that are designed to achieve both short-term objectives and long-term community goals.

Hazard Mitigation Planning helps to reduce a community's risks and produce long-term and recurring benefits to break the cycle of disaster loss. This includes the identification of policies, capabilities, activities, and tools necessary to implement successful and sustainable risk reduction actions. Benefits of mitigation planning can be seen in many ways, including;

- Protecting lives and property
- Safeguarding economic health and public and private investments
- Ensuring quick and effective recovery following disasters
- Reducing future vulnerability through wise development and post-disaster recovery and reconstruction
- Enhancing coordination within and across participating jurisdictions

- Enabling and expediting the receipt of pre-disaster and post-disaster grant funding
- Demonstrating a firm commitment to improving community health and safety
- Allowing the jurisdictions to integrate hazard mitigation planning across all levels of government

A core assumption of hazard mitigation is that pre-disaster investments will significantly reduce the demand for post-disaster assistance by lessening the need for emergency response, repair, recovery, and reconstruction. Furthermore, mitigation practices enable local residents, businesses, and industries to re-establish themselves in the wake of a disaster, getting the community economy back on track sooner and with less interruption.

The benefits of mitigation planning go well beyond reducing hazard vulnerability. Measures such as the acquisition or regulation of land in known hazard areas can help achieve multiple community goals, such as preserving open space, improving water quality, maintaining environmental health, and enhancing recreational opportunities. Thus, it is vitally important that any local mitigation planning process be integrated with existing local planning efforts. It's also important that any proposed mitigation strategies take into account broader community goals.

During the last two decades, emergency management has evolved considerably. A renewed emphasis has been placed on planning for disasters before they occur as a complement to effective response and recovery. As a result, hazard mitigation has gained increasing prominence as a critical part of emergency management. By taking sustained mitigation actions to reduce or eliminate the long-term risk to human life and property, hazard risks can be proactively combated in a systematic manner. This approach to emergency management is much more effective than reacting to a hazard once it has occurred.

This HMP is the result of continuing work by the citizens and stakeholders of Converse, Natrona, and Niobrara Counties to guide these communities towards greater disaster resistance, but also respect the character and needs of local governments and their residents.

SCOPE

This 2024 HMP has been prepared to meet requirements set forth by FEMA in order for Region 2 local governments to be eligible for funding and technical assistance from state and federal hazard mitigation programs. This HMP will be updated and FEMA-approved within its five-year expiration date.

AUTHORITY

This HMP has been adopted by Region 2 counties and their participating local governments in accordance with the authority granted to counties and local governments by the State of Wyoming. This HMP was developed in accordance with current state and federal rules and regulations governing local HMPs and shall be monitored and updated on a routine basis to maintain compliance with the following legislation and guidance:

- Robert T. Stafford Disaster Relief and Emergency Assistance Act, 42 U.S.C., Section 322, Mitigation Planning, as enacted by Section 104 of the Disaster Mitigation Act of 2000 (P.L. 106-390) and by FEMA’s Interim Final Rule published in the Federal Register on February 26, 2002, at 44 CFR Part 201

The following FEMA guides and reference documents were used to prepare this document:

- FEMA. Local Mitigation Planning Policy Guide. April 19, 2022.
- FEMA. Local Mitigation Planning Handbook. May 2023.

UPDATE PROCESS AND METHODOLOGY

The planning process involved a series of meetings and workshops with the hazard mitigation planning committee (HMPC), coupled with public engagement efforts and development of an updated risk assessment. The culmination of this process was an updated mitigation strategy for Region 2 counties and their local governments to work towards implementing over the next five years. A high-level summary of the components that contributed to the updated HMP is presented in **FIGURE 1**.

Figure 1 HMP Components

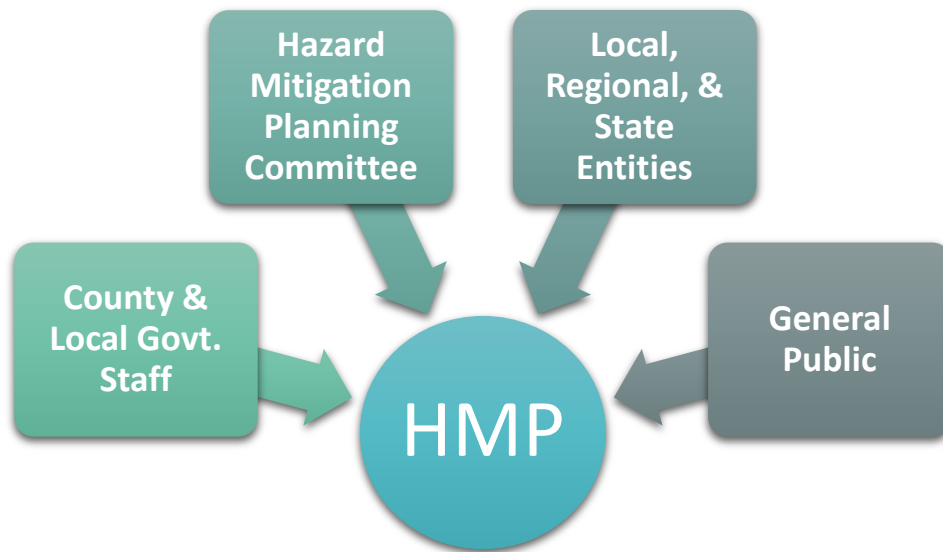


From a 'big picture' standpoint, the HMPC identified the following overarching project goals:

- Obtaining FEMA Approval
- Broadening jurisdictional collaboration and participation
- Improving public engagement
- Increasing mitigation grant funding pursuits

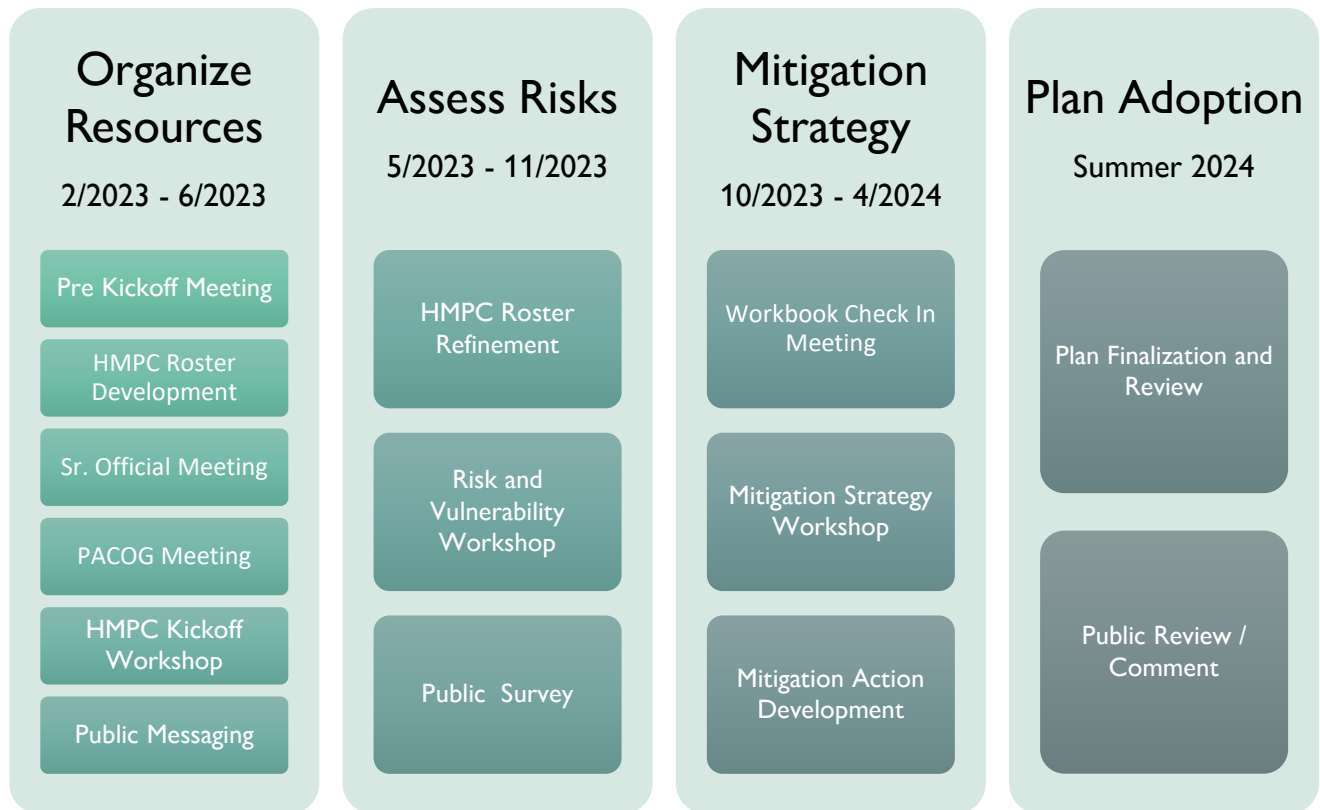
Input into the planning process came from a number of entities, shown in **FIGURE 2**.

Figure 2 Planning Process Inputs



TIMELINE OF ACTIVITIES

FIGURE 3 summarizes the HMP's planning process schedule, including all HMPC and public touchpoints.

Figure 3 Project Milestones

PARTICIPATING LOCAL GOVERNMENTS

All local governments in Region 3 were invited, via email, one-on-one conversations, and during other community meetings, by each County Homeland Security Coordinator to participate in the planning process. They were informed of the participation requirements and the formation of the HMPC. The following organizations were formal participants in the planning process and have formally adopted this HMP:

- Converse County
 - City of Douglas
 - Town of Glenrock
 - Town of Rolling Hills
- Natrona County
 - City of Casper
 - City of Mills
 - Town of Bar Nunn
 - Town of Evansville
 - Natrona County Fire District
 - Casper Mountain Fire District

- Niobrara County
 - Town of Lusk
 - Town of Manville
 - Town of Van Tassel

Local governments that decided to not be formal participants include:

- Within Converse County
 - Town of Lost Springs
 - Converse County School District #1
 - Converse County School District #2
 - LaPrele Irrigation District
 - Converse Conservation District
- Within Natrona County
 - Town of Edgerton
 - Town of Midwest

Participation in the planning process was closely tracked to ensure all entities remained engaged across the planning process. **TABLE 1** shows organizational participation at HMPC meetings and webinars. Addition individual on-on-one discussions, emails, and meetings were also utilized as needed throughout the process. Event agendas can be found in each county annex.

Table 1 Local Government Participation

Local Government	Pre Kickoff	Kickoff Workshop	Risk Assessment Workshop	Workbook Check-In	Mitigation Strategy Workshop	Work Sessions
Converse County	●	●	●	●	●	●
City of Douglas	●	●	●	●	●	●
Town of Glenrock		●	●		●	●
Town of Rolling Hills	●	●		●	●	●
Natrona County	●	●	●	●	●	●

Local Government	Pre Kickoff	Kickoff Workshop	Risk Assessment Workshop	Workbook Check-In	Mitigation Strategy Workshop	Work Sessions
City of Casper		●	●	●	●	●
City of Mills		●	●			●
Town of Bar Nunn				●		●
Town of Evansville		●	●	●	●	●
Natrona County Fire District			●		●	●
Casper Mountain Fire District		●	●	●		●
Niobrara County	●	●	●	●	●	●
Town of Lusk		●	●		●	●
Town of Manville		●	●		●	●
Town of Van Tassel					●	●

In addition to participating in planning events, formal participants were also required to complete a "Local Government HMP Workbook". This document, referenced at all planning events, requested those local inputs that are vital for a successful and ultimately, FEMA-Approvable HMP. Workbook responses were solicited over the course of the planning process.

HAZARD MITIGATION PLANNING COMMITTEE

The full HMPC roster is included in **APPENDIX B: HAZARD MITIGATION PLANNING COMMITTEE**. This roster shows all of the invitees who were contacted via email to participate in, and contribute to, the planning process. The roster also highlights those primary community sectors that each individual represents. A summary of those sectors invited to the planning process includes:

- Emergency Management
- Economic Development
- Land Use & Development
- Housing
- Health & Social Services
- Infrastructure (Lifelines)
- Natural & Cultural Resources
- Underserved Communities & Socially Vulnerable Populations
- Management
- Elected Leadership
- Education
- Large Employers
- Neighboring Counties
- State Agencies
- Federal Agencies

STAKEHOLDERS

In addition to the HMPC, which included representatives from all local governments across the region, a number of other stakeholders were involved in the HMP update. **TABLE 2** highlights these stakeholder's contributions to the HMP.

Table 2 Stakeholder Involvement

Organization	Involvement
Wyoming Office of Homeland Security (WOHS)	Participated in HMPC workshops / Provided data utilized in the risk assessment / Provided guidance relating to the new FEMA planning policy / Reviewed the updated draft HMP
Wyoming State Geological Survey (WSGS)	Provided data utilized in the risk assessment

Organization	Involvement
Wyoming State Forestry Division	Provided data utilized in the risk assessment
Wyoming State Engineer's Office (WSEO)	Invited to participate in HMPC workshops / Provided inundation data utilized in the risk assessment / Provided opportunity to review the updated draft HMP
Wyoming Law Enforcement Academy (WLEA)	Invited to participate in HMPC workshops / Provided opportunity to review the updated draft HMP
Wyoming Game & Fish	Invited to participate in HMPC workshops / Provided opportunity to review the updated draft HMP
Wyoming Department of Public Health	Invited to participate in HMPC workshops / Provided opportunity to review the updated draft HMP
Wyoming Highway Patrol	Invited to participate in HMPC workshops / Provided opportunity to review the updated draft HMP
Wyoming Department of Agriculture	Invited to participate in HMPC workshops / Provided opportunity to review the updated draft HMP
Wyoming Department of Transportation (WYDOT)	Invited to participate in HMPC workshops / Provided opportunity to review the updated draft HMP
Federal Landowners	The US Bureau of Land Management and US Forest Service were invited to participate in HMPC workshops / Provided opportunity to review the updated draft HMP
Local & Regional Employers	Invited to participate in HMPC workshops / Provided opportunity to review the updated draft HMP (see full roster for details)
Local & Regional Non-Profits	Invited to participate in HMPC workshops / Provided opportunity to review the updated draft

Organization	Involvement
	HMP (see full roster for details)
Local Dam Owners	Select dam owners were invited to participate in HMPC workshops / Provided opportunity to review the updated draft HMP (see full roster for details)

PLANNING ACTIVITIES

The following section details activities, including meetings and workshops, that were utilized as part of the HMP update. Major points of discussion and decisions made are provided. Detailed agendas and participation tracking documentation is included in in each county annex.

PRE-KICKOFF MEETING

A pre kickoff meeting was held between all county designated project managers and the planning consultant in February 2023. Important discussions are summarized in the following list:

- Schedule – A detailed schedule was coordinated, including regular monthly meetings between the counties and consultant.
- Participating Local Governments – It was determined that all local governments within each county’s boundary would be invited to participate in the HMP update.
- HMPC Roster – The new FEMA planning policy was reviewed, specifically as it related to the roster. A detailed roster would be drafted following the meeting.
- Project Communication – It was determined that all project-related communications would come directly from each county.
- Hazards to Profile – An initial conversation about hazards to include or remove was had. This topic would be further discussed at the HMPC Kickoff Workshop.
- Past Events – Hazard events occurring since the last HMP was developed were reviewed.
- Public Engagement – An initial conversation about the project’s public engagement plan was had. This topic would be further discussed at the HMPC Kickoff Workshop.
- High Hazard Potential Dams – It was determined that the updated HMP would aim to meet FEMA’s HHPD planning policy requirements.
- Next Steps – It was agreed that the next step in the planning process would involve the kickoff meeting with the full HMPC.

HMPC KICKOFF WORKSHOP

The HMPC kickoff workshop was held in June of 2023. The entire HMPC roster was invited to attend this hybrid-style workshop. Important discussions included:

- Participating Local Governments – All participants were informed of participation requirements necessary to receive FEMA-Approval of the updated HMP. At this point in time, all local governments were planning to fully participate in the process.
- HMPC Roster – The new FEMA planning policy was reviewed, specifically as it related to the roster. HMPC members were encouraged to help to further build out the roster, to ensure all community sectors were invited to the planning process.
- Hazards to Profile – Hazards from the previous HMP and the 2021 Wyoming State Hazard Mitigation Plan were reviewed for inclusion in the updated HMP. The final list is documented in the **IDENTIFIED HAZARDS OF CONCERN** section.
- Past Events – Hazard events occurring since the last HMP was developed were reviewed.
- Public Engagement –The project’s public engagement plan was reviewed and the HMPC concurred with the proposed approach.
- Local Government HMP Workbook – This tool was presented to the HMPC, explaining how this would help to guide and capture those local inputs that are vital for a successful and ultimately, FEMA-Approvable, HMP.
- An online instant poll was also made available for those attending virtually and in-person. Responses helped to guide future HMPC workshop discussions and updates to the HMP.

HMP RISK ASSESSMENT WORKSHOPS

The individual, county-specific HMPC risk assessment workshops were held in November of 2023. The entire HMPC roster was invited to attend these in-person workshops. Important discussions included:

- Participating Local Governments – All participants were again informed of participation requirements necessary to receive FEMA-Approval of the updated HMP.
- Draft Risk Assessment Chapter – Comments were requested on the draft plan chapter that would be shared with the HMPC. Additional past hazard events were discussed to be added to the HMP.
- Local Government HMP Workbook – This tool and the next round of local government input requests was reviewed with the HMPC.
- Mitigation Strategy – Initial conversations relating to the updated mitigation strategy focused on the HMP’s mitigation goals.

HMPC WORKBOOK CHECK-IN MEETING

The HMPC workbook check in meeting was held in January of 2024. All participating local governments were invited to attend this online meeting. This provided participating local governments with a chance to ask questions about and review the various inputs being requested.

HMPC MITIGATION STRATEGY WORKSHOPS

The individual, county-specific HMPC mitigation strategy workshops were held in March of 2024. The entire HMPC roster was invited to attend these in-person workshops. Important discussions included:

- Participating Local Governments – All participants were again informed of participation requirements necessary to receive FEMA-Approval of the updated HMP. At this point in time, a total of 15 local governments across the region were planning to fully participate in the process.
- Underserved Communities and Socially Vulnerable Populations – The HMPC discussed previous and potential future HMP outreach directed specifically towards these groups. The primary population that the HMPC determined would be targeted for engagement is the elderly communities across each county.
- Review of the Mitigation Strategy – The HMPC reviewed the updated mitigation goals which the committee agreed to align across all counties in the region. Ideas for potential new mitigation actions were reviewed, including public input from the public survey.
- Local Government HMP Workbook – This tool and the next round of local government input requests was reviewed with the HMPC.

HMPC WORK SESSIONS

Each county also facilitated individual, county-specific work sessions leading up to and following the final mitigation strategy workshops. All participating local governments were invited to attend these in-person meetings. This provided participating local governments with a chance to ask questions about and review the various inputs being requested.

PLANNING COMMITTEE DRAFT PLAN REVIEW

Upon completion of the final draft plan, the HMPC was provided an opportunity to review and comment on the document in May of 2024. All comments received from the HMPC were incorporated.

PUBLIC AND STAKEHOLDER PARTICIPATION

Public involvement is crucial to a representative hazard mitigation plan update. Each county assisted in community messaging via various channels including print, websites, and social media and provided residents and businesses with multiple opportunities to contribute to informing the HMP update. Following are some examples of postings.



UNDERSERVED COMMUNITIES

During the HMP update, the HMPC roster was carefully crafted to ensure extensive representation from organizations supporting underserved and vulnerable populations in the county. This roster includes local hospitals & health care providers, local emergency medical service providers, the Veterans Administration, senior centers & care providers, non-profits, and voluntary organizations active in disasters (VOAD). A full list of these organizations can be found in **APPENDIX B: HAZARD MITIGATION PLANNING COMMITTEE**.

Those priority vulnerable populations that were identified to be specifically engaged during the planning process include the region's elderly communities. Engagement occurred in the following ways for each county:

- Converse – County Public Health attends regular lunches at the senior citizen centers (Douglas and Glenrock). During the planning process, project updates were provided to these communities, as well as opportunities for individuals to contribute input to the plan update. Additionally, the Esterbrook community,

which has a large percentage of elderly residents, were specifically invited to participate in the public survey by a local resident involved with the HMPC.

- Natrona – Within Natrona County there is continuous partnership efforts with all stakeholders within the community, including those who serve those who can be considered underserved and vulnerable. Invitations for multiple workgroup opportunities were sent to agencies and organizations from the onset of the project. Those participating were engaged throughout the planning process and are documented in the previously mentioned HMPC Roster Appendix.
- Niobrara - Within Niobrara County there is continuous partnership efforts with all stakeholders within the community, including those who serve those who can be considered underserved and vulnerable. Invitations for multiple workgroup opportunities were sent to agencies and organizations from the onset of the project. Those participating were engaged throughout the planning process and are documented in the previously mentioned HMPC Roster Appendix.

COMMUNITY SURVEY

The community online survey was open to the public from July through November 2023 and received over 240 responses. These responses from the public were reviewed during HMPC workshops and helped to inform the mitigation strategy, planning process, and risk assessment chapters of this HMP. A summary of the results can be found in **APPENDIX C: MITIGATION ACTION IDEAS GUIDE** and **APPENDIX D: PUBLIC SURVEY RESPONSES**.

PUBLIC PLAN REVIEW AND COMMENT

Following development of the updated HMP a public review and comment period was held. Announcements of the public review were posted widely to county websites and social media accounts. Additionally, the targeted vulnerable elderly communities were informed of this opportunity to review and contribute to the HMP in the following ways:

- Converse – County Public Health attends regular lunches at the senior citizen centers (Douglas and Glenrock). During the public review period, the county specifically requested input from these communities.
- Natrona – Natrona County widely solicited feedback and comments during the HMP update, specifically inviting workgroup participation from those who serve those who can be considered underserved and vulnerable. Additional individual feedback was requested via distributed surveys. Those participating were engaged throughout the planning process, encouraged to provide comments on the updated HMP, and are documented in the HMPC Roster Appendix.
- Niobrara - Niobrara County widely solicited feedback and comments during the HMP update, specifically inviting workgroup participation from those who serve those who can be considered underserved and vulnerable. Additional individual feedback was requested via distributed surveys. Those participating

were engaged throughout the planning process, encouraged to provide comments on the updated HMP, and are documented in the HMPC Roster Appendix.

There were two public comments received through the online survey that was advertised along with a link to the updated document. Both were addressed in coordination with the HMPC.

HAZARD IDENTIFICATION AND RISK ASSESSMENT

IDENTIFIED HAZARDS OF CONCERN

Building a clear understanding of the hazards that pose risks to the communities of Region 2 is a key step in preventing disaster losses. For the purpose of this plan, the following terms facilitate comparisons between communities and can be found throughout the risk assessments and mitigation strategies.

- **Hazard:** Event or physical conditions that have the potential to cause fatalities, injuries, property damage, infrastructure damage, agricultural loss, damage to the environment, interruption of business, other types of harm or loss.
- **Vulnerability:** The degree of susceptibility to physical injury, harm, damage, or economic loss; depends on an asset's construction, contents, and economic value of its functions.
- **Exposure:** The people, property, systems, or functions that could be lost to a hazard. Generally, exposure includes what lies in the area the hazard could affect.
- **Risk:** A hazard's likelihood of occurrence and its consequences to society; the estimated impact that a hazard would have on people, services, facilities, and structures in a community.

The Hazard Identification and Risk Assessment (HIRA) section involves a method for evaluating risk which is defined by probability and frequency of occurrence of a hazard event, exposure of people and property to the hazard, and consequences of that exposure. Different methodologies exist for assessing the risk of hazard events, ranging from qualitative to quantitative approaches.

Region 2 communities are vulnerable to a wide range of natural and human-caused hazards that threaten life, property, and the environment. The hazards identified by the HMPC for inclusion in the plan are those determined to be of potential threat to residents, businesses, visitors, and commuters. The hazards profiled for the 2024 Plan are:

- Dam / Levee Incident
- Drought
- Earthquake
- Expansive Soils
- Flood
- Landslide / Rockfall / Debris Flows
- Mine and Land Subsidence
- Severe Weather (Thunderstorm, Lightning, Hail, Wind, Tornado)
- Wildfire
- Winter Storm

Two hazards profiled in the State of Wyoming HMP, Avalanche and Volcano, are not being included due to these event's very low probability and minimal vulnerability posed to Region 2 communities.

It should be noted that many of these hazards are interconnected and discussion of how these hazards overlap occurs throughout the risk assessment. For example, prolonged drought impacts the likelihood of wildfire.

DISASTER DECLARATION HISTORY

TABLE 3 details Federal disaster declarations in Region 2.

Table 3 Federal Disaster Declarations

Declaration Number	Hazard	Year	Declaration Type	Affected County
DR-155-WY	Flooding	1963	Presidential – Major Disaster	Statewide
DR-557-WY	Severe Storms, Flooding, Mudslides	1978	Presidential – Major Disaster	Region 2 Counties
DR-1268-WY	Severe Winter Storm	1999	Presidential – Major Disaster	Niobrara County
FM-2315-WY	Dead Horse Fire	2000	Fire Management Assistance	Natrona County
FM-2427-WY	Hensel Fire	2002	Fire Management Assistance	Converse County
FM-2665-WY	Jackson Canyon Fire	2006	Fire Management Assistance	Natrona County
FM-2992-WY	Arapahoe Fire	2012	Fire Management Assistance	Converse County
FM-5014-WY	Sheep Herder Hill Fire	2012	Fire Management Assistance	Natrona County
DR-4227-WY	Severe Storms and Flooding	2015	Presidential-Major Disaster	Niobrara County
FM-5115-	Station Fire	2015	Fire Management	Natrona County

Declaration Number	Hazard	Year	Declaration Type	Affected County
WY			Assistance	
EM-3479-WY	COVID-19	2020	Emergency Declaration	Region 2 Counties
DR-4535-WY	COVID-19	2020	Presidential – Major Disaster	Region 2 Counties

TABLE 4 details USDA disaster declarations that have impacted Region 2.

Table 4 USDA Disaster Declarations

Declaration Number	Hazard	Year	Affected County
S3319	Drought, High Wind, Fire, Excessive Heat, Insects	2012	Converse and Niobrara Counties
S3350	Drought, High Wind, Fire, Excessive Heat, Freeze	2012	Converse and Natrona Counties
S3508	Drought, High Wind, Fire, Excessive Heat, Insects	2013	Region 2 Counties
S3842	Severe Flooding and Hail	2015	Niobrara County
S4002	Drought, High Wind, Fire, Excessive Heat, Insects	2016	Niobrara County
S4753	Drought	2020	Natrona County
S4764	Drought	2020	Niobrara County
S4785	Drought	2020	Converse County
S4926	Drought	2021	Region 2 Counties
S5177	Drought	2022	Natrona County
S5223	Drought	2022	Converse and Niobrara Counties

HAZARD RISK SUMMARY

A qualitative risk ranking was performed by each participating local government for the hazards profiled in this plan. This risk ranking assessed the probability of each hazard's occurrence, as well as its likely impact on the people, property / environment, and economy of the planning area. The responses were collected utilizing a four-category qualitative scale. For probability of the hazard this included "unlikely (1)" "possible (2)", "probable (3)", and "likely (4)". For the impacts of the hazard to the three community sectors, the scale included "minor (1)", "limited (2)", "critical (3)", and "catastrophic (4)". The responses were then calculated into a quantitative range by combining the impact scores and multiplying by the probability score, which correlates with the "high," "moderate," and "low" risk rankings. **TABLE 5** presents each county's hazard risk ranking. The counties consider severe weather, wildfire, and winter storm to be the highest risk hazards facing the Region.

Table 5 Region 2 County Hazard Risk Rankings

Hazard	Converse County	Natrona County	Niobrara County
Dam/Levee Incident	Moderate	Moderate	Low
Drought	Moderate	Moderate	High
Earthquake	Low	Moderate	Low
Expansive Soils	Low	Low	Low
Flood	Moderate	Moderate	Low
Landslide	Low	Low	Low
Mine and Land Subsidence	Moderate	Low	Low
Severe Weather	High	High	High
Wildfire	High	High	High
Winter Storm	High	High	High

A public risk perception survey was also conducted as part of the risk assessment planning process in the form of an online survey. The results of which were factored into the overall hazard risk rankings. Each county took the initiative to distribute information and provide a link to the survey to local community members. The survey produced a great number of results, with a total number of 241 participants. The following table presents the results of this survey and how the public perceives risk for the identified hazards. The

public survey results (**TABLE 6**) rather clearly segmented hazards into a high / moderate / low risk grouping. This shows that the public considers drought, severe weather, wildfire, and winter storm to be the highest risk hazards facing the Region.

Table 6 Public Hazard Risk Perceptions

Hazard	Perceived Risk
Dam / Levee Incident	Moderate
Drought	High
Earthquake	Low
Expansive Soils	Low
Flood	Moderate
Landslide / Rockfall / Debris Flows	Low
Mine and Land Subsidence	Low
Severe Weather	High
Wildfire	High
Winter Storm	High

COUNTY APPENDIXES

County-specific appendixes have been developed as part of this plan, to both streamline this document and to provide each county with an individualized and succinct version of the vulnerability assessment results. Readers are encouraged to review these annexes for information and data specific to each county and their local governments.

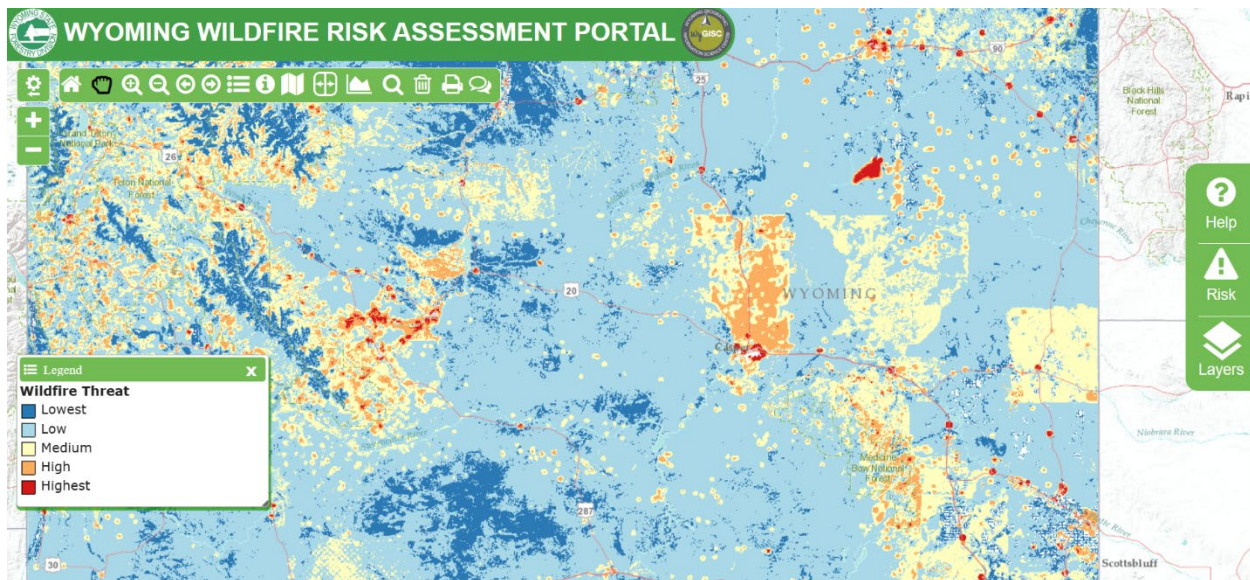
HAZARD DATA VIEWERS

All of the information contained in the following risk and vulnerability assessments is considered a snapshot in time, based upon the best available data during this plan's development. It is expected that over the 5-year life of this updated plan many of these data sets will continue to be updated and enhanced, while new data sources will become available. In order for communities to ensure they are referencing the latest and greatest hazard data, it is important that they are aware of how to access this information.

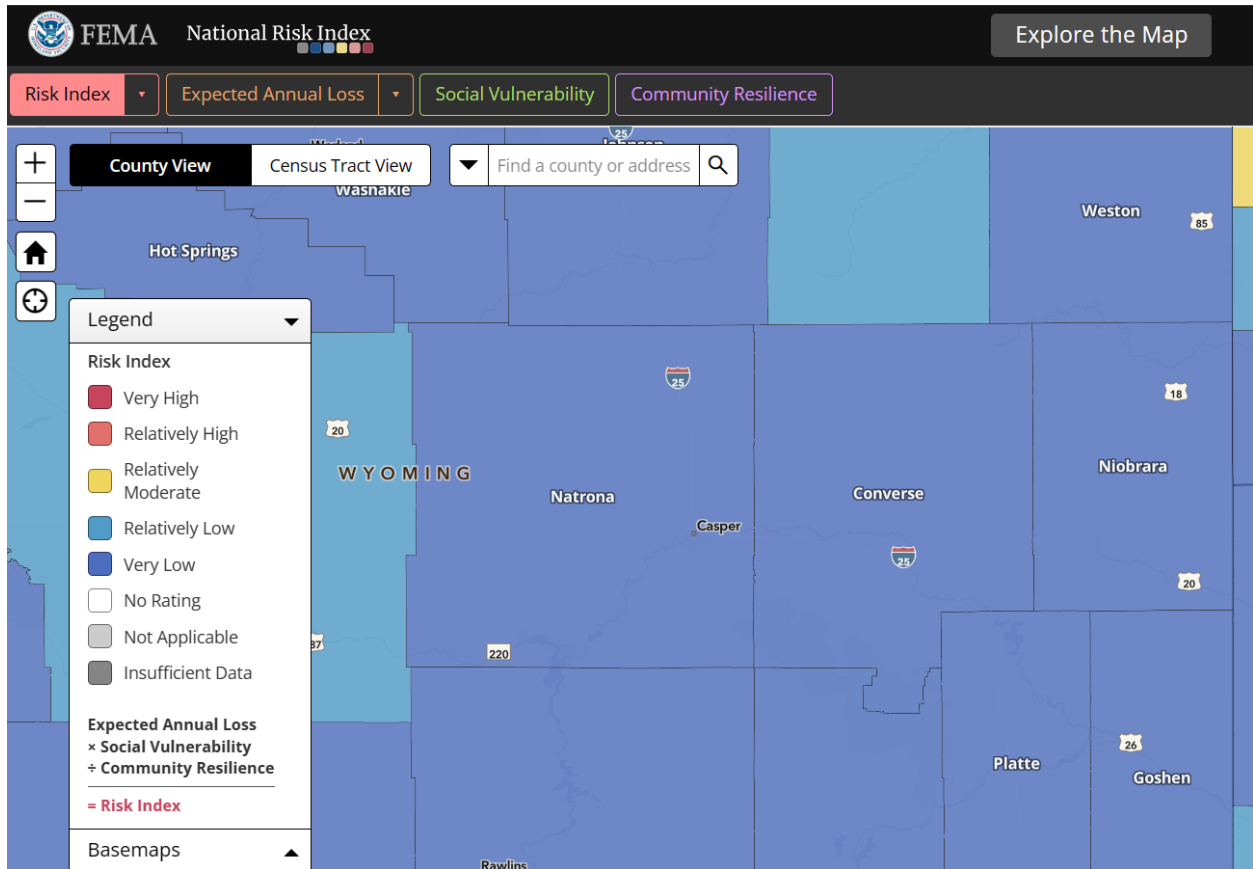
Fortunately, communities are now able to leverage state and federal web map viewers to assess the most current hazard mapping available for many of the hazards profiled in this

plan. Details on these currently available tools are shared below and you can access the platforms by clicking on the title of each viewer.

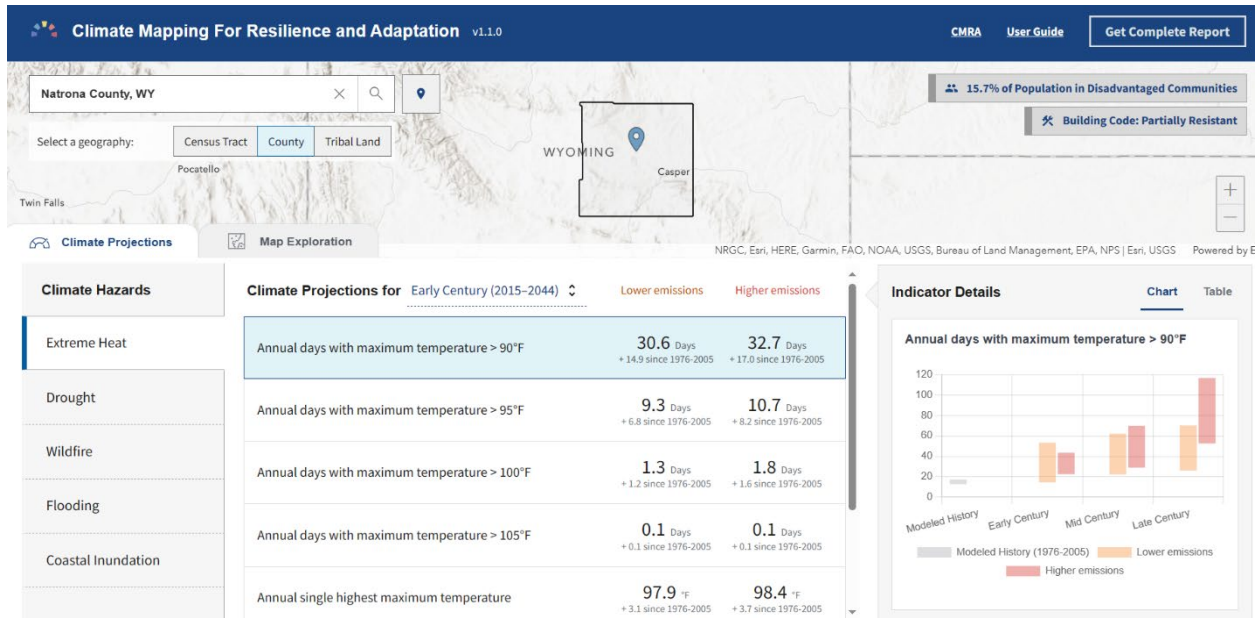
Wyoming Wildfire Risk Assessment Portal – The Wyoming Wildfire Risk Assessment Portal (WYWRAP) delivers a web-based application designed to provide immediate, on-line access to Wyoming calibrated West Wide Wildfire Assessment data to help communities, fire departments, emergency planners, and land management agencies collectively prepare for and be resilient to wildfires by facilitating effective, efficient, and consistent data and information exchange. This allows for an enhanced public awareness of wildfire and helps to build capacity for planning efforts and develop fuels treatment priorities at all levels. WYWRAP provides information designed to reduce the potential for catastrophic wildland fires through educating the public and assisting decision makers to make informed choices regarding wildfire hazards, ecosystem enhancement, and public safety. West Wide Wildfire Assessment data was developed to cover the seventeen Western States. WYWRAP was specifically designed from the larger set of data for use in Wyoming.



FEMA National Risk Index (NRI) – is a tool to help illustrate the communities most at risk for 18 natural hazards. The Risk Index leverages available source data for natural hazard and community risk factors. The risk equation behind the Risk Index includes three components: a natural hazards component (Expected Annual Loss), a consequence enhancing component (Social Vulnerability), and a consequence reduction component (Community Resilience).



Climate Mapping for Resilience and Adaptation (CMRA) Assessment – is a tool that provides current and future climate hazard information to assist with prioritizing, identifying, and implementing climate-informed infrastructure investments. As a single source of historical and future climate data, the tool covers exposure of multiple hazards, status of disadvantaged communities, and building codes. The information can support the planning and implementation of climate resilient projects.



Climate Risk and Resilience Portal (ClimRR) – is a collection of tools and data related to estimated future climate-related variables: annual and seasonal averages of the maximum and minimum daily temperatures, annual total precipitation, drought (consecutive days with no precipitation) and annual average wind speed.

Climate Risk & Resilience Portal (ClimRR)

National Map Explorer



ClimRR's National Map Data Explorer allows users to view over 100 different climate visualizations in an interactive map.

[Visit](#)

Local Climate Projections



ClimRR's Local Climate Projections allow users to generate and export a report of climate projections at a given point on the map.

[Visit](#)

Data Catalog

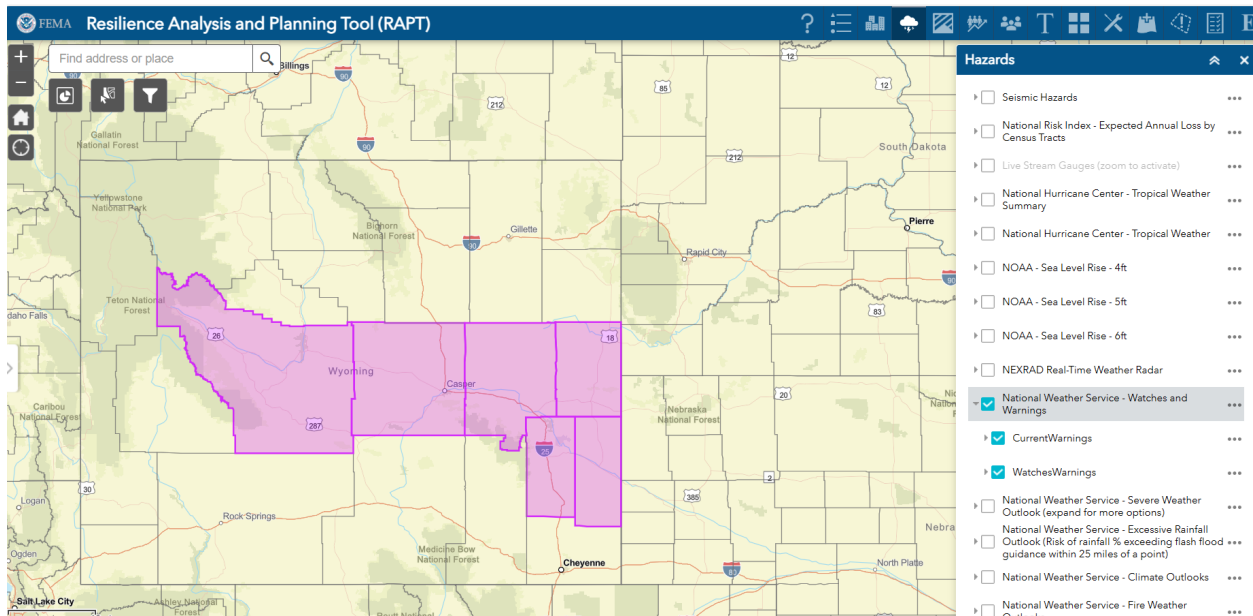


ClimRR's Data Catalog allows users to download all, or just a selection, of the available climate dataset.

[Visit](#)

Now Available! [Heat Index Projections](#)

Resilience Analysis and Planning Tool (RAPT) – is a geographic information systems (GIS) tool to help emergency managers and community partners at all GIS skill levels visualize and assess potential challenges to community resilience. Hazard data include data layers of real-time radar and watch and warning notifications from the National Weather Service, live stream gauges, current wildfires, historical hazard data for tornadoes, flood, and seismic risk.



EXPOSURE ANALYSIS

Throughout the risk and vulnerability assessment, exposure analysis was conducted for hazards as best available data permitted. FEMA's *Hazus Inventory National Database* was utilized for all Lifeline analysis. The US Army Corps of Engineers *National Structure Inventory* was utilized for all structure assessments. Additional details are provided in the individual county annexes.

DAM / LEVEE INCIDENT

GENERAL BACKGROUND

Dams and levees are man-made structures built for a variety of uses, including flood protection, power, agriculture, water supply, and recreation. These structures are typically constructed of earth, rock, concrete, or mine tailings. Dams, levees, and reservoirs serve a critical role for Wyoming residents and regional industry by controlling flooding and conserving water for summer months when rainfall is limited.

Dam failures can be classified into four categories: overtopping, foundation failure, structural failure, and other unforeseen failures. According to the Wyoming State Hazard Mitigation Plan (2021-2026), flood and overtopping, which is the uncontrolled flow of water over, around, and adjacent to the dam, incidents make up approximately 70% of events. Older dams are most susceptible to overtopping incidents. Foundation and structural incidents are usually tied to seepage through the foundation of the main structure of the dam, and seepage or piping account for about 12% of incidents. Erosion, deterioration, and deformation of the foundation or settling of the embankment can also result in dam failure.

Populations downstream that are especially at risk of an incident include residents living in inundation areas or nearby areas that may be affected and those with access and

functional needs (AFN). This population can include the elderly and very young; those living in long-term care facilities; mobile homes; low-income housing areas; temporary shelters; people with limited English proficiency; tourists and visitors; and those with cognitive, mobility, or sensory disabilities. These populations may have issues with evacuation and be disproportionately impacted by the effects of an incident due to limitations of movement, fiscal income, challenges in receiving and understanding warnings, or unfamiliarity with surroundings.

Property vulnerabilities include structural damage, damage to vehicles, and damage to the contents of homes, storage units, warehouses, and businesses. Critical facilities, roads, Lifelines, and other community assets would likely be impacted. First responders and emergency personnel would likely be affected due to impassible transportation routes, damaged critical facilities, and/or disrupted communications systems. The populations downstream of a dam are at risk of varying levels of damage and threat to public safety depending on the dam classification. The magnitude of impacts could be similar to that of a flood and could be potentially worse if the incident occurs during a flood event, due to overtopping.

Dam / levee incidents can have higher velocity flows, debris, and greater depths of flooding as compared to normal riverine flooding, all of which could contribute to higher losses.

An indirect impact, such as an extended power outage, presents a challenge for all of the populations in the Region. Those who may need more assistance obtaining information and resources, such as those with mobility issues, powered medical equipment, and chronic illness, are especially at risk from extended power outages.

Damaged utilities including leaking gas lines, open electrical cables, and wastewater contamination pose tremendous risk to homes, businesses, and people. The potential for explosions and fires, exposed electrical currents, and exposure to contaminated water can cause fatalities and illness. Domestic and wild animals forced out of their homes and brought into contact with humans by floodwaters can also pose a threat.

Depending on the number of people impacted, there may be a strain on public sheltering operations. The hospitals may see patients ranging from minor injuries to life threatening conditions. Secondary effects may come later in the form of injuries during recovery and potential illness due to contaminated water exposure.

Dam / levee incidents can potentially impact economic revenue if roads or businesses are closed or destroyed. Property damages can close a business for an extended period or permanently. The economy of a community can be rapidly impacted if businesses are unable to reopen in a timely manner.

While the probability of such an event is low, the failure of one of the high hazard dams could result in millions of dollars of damage and potential loss of life.

SEVERITY

Dams are classified based upon hazard potential as high, significant, or low hazard. This classification is based on the consequences if a dam were to fail, not on the potential of

failure, or the existing condition of the dam. The Corps of Engineers bases the hazard potential designation on such items as acre-feet capacity of the dam, distance from nearest community downstream, population density of the downstream community, and age of the dam. The potential consequences of a dam failure are:

- **High Hazard**– Probable loss of life
- **Significant Hazard**– No probable loss of human life but can cause economic loss, environment damage, disruption of lifeline facilities, or other major impacts; often located in predominantly rural or agricultural areas but could be located in areas with population and significant infrastructure
- **Low Hazard**– No probable loss of human life and low economic and/or environmental losses; losses are principally limited to the owner's property

Impacts from a dam incident (controlled or uncontrolled release) will be downstream of the dam and similar to flood impacts, based on depth, extent and velocity of the inundation. Risk will be dependent on the depth and velocity of water and its proximity to people and property.

WARNING TIME

People living downstream of a dam or levee and exposed to the potential inundation areas are at greatest risk. Evacuations and timely warning are critical to reduce loss of life and injury. Accurate warning delivery and lead time are dependent upon the detection of the issue and the rapid communication of evacuation orders to areas at risk of inundation.

SECONDARY HAZARDS

Although dam and levee incidents, either complete or partial compromise of the structure, are rare events, when they do occur they pose a significant hazard to communities downstream. Two factors that influence the potential severity of a structure compromise incident are the amount of water impounded and the density, type, and value of development and infrastructure located downstream.

Dam and levee incidents can result from any one or a combination of the following causes:

- Prolonged periods of rainfall and flooding, which result in overtopping
- Earthquake
- Failure of upstream dams on the same waterway

CLIMATE CHANGE IMPACTS

With a potential for increases in extreme precipitation events, climate change may result in large floods that could stress dams and levees, and thus potentially increase the risk of failure of these structures. Dams and other hydrologic containment structures are designed based on calculations of a river's flow behavior, and any changes in weather patterns can have significant effects on the hydrologic information used for the design of a dam or levee.

Climate change may alter the dam/levee profile and affect the designed margin of safety. If freeboard is reduced, dam operators may be forced to release increased volumes of water to maintain the required safety parameters. Such early releases can increase flood potential downstream and possibly involve the spillway.

Additionally, the structural integrity of earthfill dams may be compromised by climate change impacts such as drought and severe storms. Changes in vegetation and prolonged drying due to drought, embankment erosion due to severe storms, and more extreme fluctuations in water levels due to severe storms and increased frequency of drought all make earthfill dams vulnerable to climate change. The structural integrity of non-erodible dams or levees, such as concrete, are less vulnerable to climate change, but extreme temperatures may lead to cracking or joint movement.

DROUGHT

GENERAL BACKGROUND

Drought is a normal part of virtually all climates, including areas with high and low average rainfall. Drought events are caused by a deficiency of precipitation and can be aggravated by other factors such as high temperatures, high winds, and low relative humidity.

Droughts can be grouped as meteorological, hydrologic, agricultural, and socioeconomic. Representative definitions commonly used to describe the various types of drought are summarized below.

- **Meteorological** drought is defined solely on the degrees of dryness. It is expressed as a departure of actual precipitation from an expected average or normal amount based on monthly, seasonal, or annual time scales.
- **Hydrologic** drought is related to the effects of precipitation shortfalls on stream flows and reservoir, lake, and groundwater levels.
- **Agricultural** drought is defined principally in terms of soil moisture deficiencies relative to water demands of plant life, usually crops.
- **Socioeconomic** drought associates the supply and demand of economic goods or services with elements of meteorological, hydrologic, and agricultural drought. Socioeconomic drought occurs when the demand for water exceeds the supply as a result of a weather-related supply shortfall. The incidence of this type of drought can increase because of a change in the amount of rainfall, a change in societal demands for water (or vulnerability to water shortages), or both.

The Standardized Precipitation Index (SPI) and the National Drought Mitigation Center (NDMC) drought category classifications. The use and data timescales of all three indices differ in multiple ways. The SPI uses monthly precipitation input data, can be created for between 1-36 months, and is useful in comparison across different climate areas. The NDMC categories (D0- abnormally dry to D4- exceptional drought) are found in the United States Drought Monitor (USDM), which has both daily and long-term data. The data is based on precipitation and is the primary source used by the USDA when determining declaration eligibility for counties.

SEVERITY

There are several methods for determining drought extent or intensity. One of the most popular is known as the Palmer Drought Severity Index (PDSI) in which temperature and rainfall information are used in a formula to determine dryness. However, in the west much of the surface water is derived from mountain snowpack [i.e., the snow-water equivalent (SWE) as measured at a number of snow telemetry (SNOTEL) sites.

The Palmer Drought Severity Index (PDSI) is a "meteorological drought" index that responds to weather conditions that have been abnormally dry or abnormally wet. The index is calculated based on precipitation, temperature, and available water content (AWC) of the soil. The Palmer Index varies from +6.0 to -6.0 with a classification scale indicating relative meteorological and hydrological development cycles.

WARNING TIME

Only generalized warning can take place due to numerous variables. Currently, scientists are unable to predict drought more than a month in advance for most locations. Predicting drought depends on the ability to forecast precipitation and temperature. Anomalies of precipitation and temperature may last from several months or potentially several decades, depending on interactions between the atmosphere and the oceans, soil moisture and land surface processes, topography, internal dynamics, and the accumulated influence of weather systems on the global scale.

SECONDARY HAZARDS

Typically, people are not directly vulnerable to drought, though secondary or indirect impacts can occur. Drought can contribute to wildland fire risk.

CLIMATE CHANGE IMPACTS

The presence of droughts across the nation is due to the changing climate which affects weather patterns and temperature fluctuations. As hotter weather increases in duration and precipitation is less predictable, droughts will likely continue to be a common occurrence, potentially being experienced more regularly.

EARTHQUAKE

GENERAL BACKGROUND

An earthquake is defined as the motion or trembling of the ground produced by sudden displacement of rock usually within the upper 10 – 20 miles of the Earth's crust. Earthquakes can affect hundreds of thousands of square miles, cause damage to property measured in the tens of billions of dollars, result in loss of life and injury to hundreds of thousands of people, and disrupt the social and economic functioning of the affected area. Most property damage and earthquake-related deaths are caused by the failure and collapse of structures due to ground shaking which is dependent upon amplitude and duration of the earthquake.

Regardless of the source of the earthquake, the associated energy travels in waves radiating outward from the point of release. When these waves travel along the surface, the ground shakes and rolls, fractures form, and water waves may be generated. Earthquakes generally last a matter of seconds, but the waves may travel for long distances and cause damage well after the initial shaking at the point of origin has subsided.

Breaks in the crust associated with seismic activity are known as “faults” and are classified as either active or inactive. Faults may be expressed on the surface by sharp cliffs, very steep slopes, or may be buried below surface deposits.

“Foreshocks,” minor releases of pressure or slippage, may occur months or minutes before the actual onset of the earthquake. “Aftershocks,” which range from minor to major, may occur for months after the main earthquake. In some cases, strong aftershocks may cause significant additional damage, especially if the initial earthquake weakened structures or impacted emergency management and response functions.

SEVERITY

The impact an earthquake event has on an area is typically measured in terms of earthquake intensity. Intensity is most commonly measured using the Modified Mercalli Intensity (MMI) Scale based on direct and indirect measurements of seismic effects.

Another way to express an earthquake’s severity is to compare its acceleration to the normal acceleration due to gravity. Peak ground acceleration (PGA) measures the strength of ground movements in this manner and represents the rate in change of motion of the earth’s surface during an earthquake as a percent. PGA can be partly determined by what soils and bedrock characteristics exist in the region. Unlike the Richter scale, PGA is not a measure of the total energy released by an earthquake, but rather of how hard the earth shakes at a given geographic area (the intensity). PGA is measured by using multiple instruments including accelerographs, is represented as a percentage of gravity (%g), and correlates well with the Mercalli scale. Peak velocity is the greatest speed of shaking recorded at a particular point during an earthquake. **TABLE 7** shows a detailed description of the Modified Mercalli Intensity (MMI) scale including the correlating peak acceleration, peak velocity, and Richter magnitude.

The Richter Scale is the most commonly used scale for measuring earthquake magnitudes and potential impacts. The Richter Scale coupled with PGA is utilized for the hazard risk assessment.

According to the Wyoming State Hazard Mitigation Plan, about 47,000 earthquakes have been recorded in Wyoming over the past 145 years, but only a small percentage have been felt by people. Historically, earthquakes have occurred in every county in Wyoming, and are likely to occur in the future. The first reported event occurred in Yellowstone National Park, which is one of the more seismically active areas in the U.S., in 1871.

Table 7 Modified Mercalli Intensity Scale

Scale	Intensity	Description of Effects	PGA (g)	Richter Scale Magnitude
I	Instrumental	Detected mostly by instruments.	<0.0017	<4.2
II	Feeble	Some people feel it	0.0018-0.014	
III	Slight	Felt by people indoors, like a truck rumbling by		
IV	Moderate	Felt by people walking	0.015-0.039	<4.8
V	Slightly Strong	Sleepers are awakened, dishes and windows disturbed	0.040-0.092	<5.4
VI	Strong	Trees sway, suspended objects swing, objects fall off shelves	0.093-0.18	<6.1
VII	Very Strong	Mild alarm, walls crack, plaster falls	0.19-0.34	<6.9
VIII	Destructive	Moving cars are uncontrollable, poorly constructed buildings greatly damaged	0.35-0.65	
IX	Ruinous	Some houses collapse, ground cracks, pipes are break open.	0.66-1.24	<7.3
X	Disastrous	Significant ground cracks and many buildings destroyed. Liquefactions and landslides occur.	>1.24	<8.0
XI	Very Disastrous	Buildings and bridges collapse, roads, railways, pipes, and cables destroyed, other hazards triggered	>1.24	<8.1
XII	Catastrophic	Buildings and bridges collapse, roads, railways, pipes, and cables destroyed, other hazards triggered	>1.24	>8.1

The properties of earthquakes vary greatly from event to event. Some seismic activity is localized (a small point of energy release), while other activity is widespread (e.g., a major fault shifting or slipping all at once). Earthquakes can be very brief (only a few seconds) or last for a minute or more. The depth of release and type of seismic waves generated also play roles in the nature and location of damage. Shallow quakes will hit the area close to the epicenter harder but tend to be felt across a smaller region than deep earthquakes.

The surface geology and soils of an area influence the propagation (conduction) of seismic waves and how strongly the energy is felt. Generally, stable areas (e.g., solid bedrock) experience less destructive shaking than unstable areas (e.g., fill soils). The siting of a community or even individual buildings plays a strong role in the nature and extent of damage from an event.

Often, the most dramatic evidence of an earthquake results from the vertical and/or horizontal displacement of the ground along a fault line. This displacement can sever transportation, energy, utility, and communications infrastructure potentially impacting numerous systems and persons. These ground displacements can result in severe and complete damages to structures situated on top of the ground fault. However, most damage from earthquake events is the result of shaking.

WARNING TIME

Earthquakes are extremely difficult to predict and the recurrence rate is determined using historical evidence of events or geologic feature information. If geologists can find evidence of distinct, datable earthquakes in the past, the number of these ruptures is used to define a recurrence rate. If evidence of ruptures is not available, geologists estimate fault slip rates from accumulated scarp heights (very steep bank or slope) and estimated date for the oldest movement on the scarp. Because a certain magnitude earthquake is likely to produce a displacement (slip) of a certain size, the rate of recurrence of earthquakes of that magnitude can be estimated.

Recurrence rates are different for each assumed magnitude thought to be “characteristic” of that fault type. Generally, a smaller magnitude quake will produce a faster recurrence rate, and for moderate levels of ground motion, a higher hazard risk. Future earthquakes are assumed to be likely to occur where earthquakes have produced faults in the geologically recent past. Quaternary faults are faults that have slipped in the last 1.8 million years and it is widely accepted that they are the most likely source of future large earthquakes. For this reason, quaternary faults are used to make fault sources for future earthquake models.

SECONDARY HAZARDS

Dam and bridge failures are significant risks during stronger earthquake events, and the potential consequences include considerable property damage and loss of life. In areas of severe seismic shaking hazard, shaking intensity levels of VII or higher (Table 3.6) can be experienced even on solid bedrock. In these areas, older buildings especially are at significant risk.

Small earthquake events can cause landslides. Rock falls are common during seismic activity as unstable material on steep slopes is shaken loose, but significant landslides or debris flows can be generated if conditions are conducive. Roads may be blocked by landslide activity, hampering response and recovery operations. Avalanches are possible when the snowpack is sufficient and the necessary factors are present.

Liquefaction and subsidence of soils are possible when impacted by the seismic waves. Fill and previously saturated soils are especially at risk. The failure of the soils has the potential to cause widespread structural damage. The oscillation and failure of the soils may result in increased water flow and/or failure of wells as the subsurface flows are disrupted and sometimes permanently altered. Increased flows may be dramatic, resulting in geyser-like water spouts and/or flash floods. Similarly, septic systems may be damaged creating both inconvenience and health concerns.

Seismic waves may rock an enclosed body of water (e.g., lake or reservoir), creating an oscillating wave referred to as a "seiche." Although not a common cause of damage, there is a potential for large, forceful waves similar to a tsunami ("tidal waves") to be generated on the large reservoirs. A seiche would be a hazard to shoreline development and pose a significant risk on dam-created reservoirs, potential for overtopping or damage to a dam could lead to downstream flash flooding.

Environmental impacts of earthquakes can be numerous, widespread, and devastating, particularly if indirect impacts are considered. These impacts can include induced flooding and landslides, damage to vegetation, poor water quality, and damage to sewage and hazardous materials.

CLIMATE CHANGE IMPACTS

The impacts of global climate change on earthquake probability are unknown.

Secondary impacts of earthquakes could be magnified by climate change. Soils saturated by repetitive storms could experience liquefaction during seismic activity due to the increased saturation. Dams storing increased volumes of water due to changes in the hydrograph could fail during seismic events. There are currently no models available to estimate these impacts.

EXPANSIVE SOILS

GENERAL BACKGROUND

While not typically a widely known hazard, expansive soils are located across Wyoming and Region 2. Soil composition varies greatly across geographies and expansive soils should be identified by engineering geologists and soil engineers. The extensive damage caused by these soils occurs slowly and is not connected to a singular event.

These expansive soils contain specific clay minerals that expand upon contact with moisture. The more water the clay is exposed to the greater the expansion, as the minerals can grow in volume 10% or more. The force from this expansion can be

anywhere from 15,000 to 30,000 pounds per square foot, which easily affects the integrity of foundations, slabs, and structures.

The swelling due to moisture is one side of the negative impacts of these soils, as the threat posed when they begin to dry out and shrink is also significant. This shrinkage can result in dangerous subsidence and interfere with the support of structures. As soils shrink, cracks and fissures are created which present an opportunity for more moisture to enter deeper into the soils during the next wet event. A vicious cycle of swelling and shrinking creates repetitive stress on buildings and infrastructure, ultimately resulting in uninhabitable properties and relocation of infrastructure.

Multiple factors affect the expansion of a specific soil. The type and amount of clay mineral content is fundamental to the extent of moisture that soil can retain. The concentration of clay particles will affect the quantity of moisture captured and not all clay types absorb large amounts of water. Particle arrangement, permeability, and density of the soil impact the degree to which a soil can expand. Moisture availability, either through natural precipitation or human interference, and the cyclical patterns of wet and dry periods is key to how much expansion occurs. Human interference can cause soil expansion for a variety of reasons, such as leakage from water supply pipes or drains, changes to surface drainage, and in some cases artificial wetting during construction of new buildings.

SEVERITY

Expansive soils cause significant amounts of damage to homes, buildings, roads, and pipelines. Expansive soils vary by the potential for linear extensibility or shrink-swell potential. Linear extensibility refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. The volume change is reported as percent change for the whole soil. The amount and type of clay minerals in the soil influence volume change.

The shrink-swell potential is low if the soil has a linear extensibility of less than 3 percent; moderate if 3 to 6 percent; high if 6 to 9 percent; and very high if more than 9 percent. If the potential is moderate or higher, shrinking and swelling can cause damage to buildings, roads, other structures, and to plant roots. Special considerations for structural design are common to mitigate against expansive soils.

WARNING TIME

Expansive soils are a slow onset hazard but it is possible to monitor structures and infrastructure that are potentially at risk because hazard areas are generally known and identified.

SECONDARY HAZARDS

Drought, flood, and severe weather can all exacerbate the impacts of expansive soils.

CLIMATE CHANGE IMPACTS

Climate change could impact the frequency of expansive soil events. As a result of extreme temperature fluctuations and unpredictable precipitation patterns, the speed of cycling and duration of wet and dry periods is difficult to gauge. Areas exposed to expansive soils that may have a typically dry climate throughout the year can see unseasonable amounts of rain during precipitation events as weather patterns are affected. As the climate returns to the typical dry state, likely with higher than normal temperatures, episodes of swelling and shrinking can occur more rapidly and more often. The increased cyclical impacts can quicken the damage potential of expansive soils.

FLOOD

GENERAL BACKGROUND

A flood is a naturally occurring event for rivers and streams and occurs when a normally dry area is inundated with water. Excess water from snowmelt or rainfall accumulates and overflows onto the stream banks and adjacent floodplains. Floodplains are lowlands, adjacent to rivers, streams, and creeks that are subject to recurring floods. Flash floods, usually resulting from heavy rains or rapid snowmelt, can flood areas not typically subject to flooding, including urban areas. Additionally, extreme cold temperatures can cause streams and rivers to freeze, creating ice jams and subsequent flood conditions.

Floods are considered hazards due to the risk to public safety and property. Hundreds of floods occur each year nationwide and flooding is one of the most common hazards across all states and U.S. territories. Most injuries and deaths from flooding happen when people are swept away by flood currents and most property damage results from inundation by sediment-filled water, often causing extensive damages to basements of homes. Fast-moving water can wash buildings off of their foundations and sweep vehicles downstream. Pipelines, bridges, and other infrastructure can be impacted when high water combines with flood debris. Damage to crops and the loss of livestock can heavily impact the agriculture sector in a community.

Riverine flooding originates from a body of water, typically a river, creek, or stream, as water levels rise onto normally dry land. Water from snowmelt, rainfall, freezing streams, ice flows, or a combination thereof, causes the river or stream to overflow its banks into adjacent floodplains. Winter flooding usually occurs when ice in a river creates dams, or streams freeze from the bottom up during extreme cold spells. Spring flooding is usually the direct result of melting winter snow packs, heavy spring rains, or a combination of the two.

Flash floods can occur anywhere that a large volume of water flows or melts over a short time period, usually from slow moving thunderstorms or rapid snowmelt. Because of the localized nature of flash floods, it is difficult to define specific hazard areas. These types of floods typically occur quickly and bring significant impacts. Rapidly moving water, only a few inches deep can lift people off their feet, and a depth of a foot or two is enough to sweep cars away. Most flood deaths result from flash floods.

The type of property damage caused by flood events depends on the depths and velocity of the floodwaters. Faster moving floodwaters can wash buildings off their foundations and sweep cars downstream. Pipelines, bridges, and other infrastructure can be damaged when high waters combine with flood debris. Landslide likelihood increases due to soil saturation from flood events and poses more risk of damages.

Extensive damage can be caused by basement flooding and seepage into basements is common during flood events. Most flood damage is caused by water saturating materials susceptible to loss (e.g., wood, insulation, wallboard, fabric, furnishings, floor coverings, and appliances). Homes in flooded areas can also suffer damage to septic systems and drain fields. In many cases, flood damage to homes renders them uninhabitable.

Flood events impact businesses by damaging property and by interrupting business operations. Flood events can limit or halt customer access to a business, as well as close a business for an extended period or permanently. The economy of a community can be rapidly impacted if businesses are unable to reopen in a timely manner.

Damaged utilities, including leaking gas lines, open electrical cables, and wastewater contamination pose tremendous risk to homes, businesses, and people. The potential for explosions and fires, exposed electrical currents, and exposure to contaminated water can cause fatalities and illness. Domestic and wild animals forced out of their homes and brought into contact with humans by floodwaters can also pose a threat.

In rural areas, property damage caused by flooding can be devastating to ranchers and farmers. When flooding occurs during the growing season, farmers can suffer widespread crop loss. Stock growers may lose livestock if they are unable to find safety from rising floodwaters. Flooding may also cause damage to pasture land, fences, barns, and out buildings.

Public buildings have particular importance as they house critical assets for government response and recovery activities and damage to these building could slow various agency efforts significantly. Damage to public water and sewer systems, transportation networks, flood control facilities, emergency facilities, and offices can hinder the ability of the government to deliver services. Loss of power and communications can be expected. Drinking water and wastewater treatment facilities may be temporarily out of operation.

Populations especially at risk of flooding include residents living in known flooding areas or near areas susceptible to flash floods. Residents that may have access and functional needs (AFN) include the elderly and very young; those living in long-term care facilities; mobile homes; low-income housing areas; temporary shelters; people with limited English proficiency; tourists and visitors; and those with cognitive, mobility, or sensory disabilities. These populations may have issues with evacuation and be disproportionately impacted by flooding due to limitations of movement, fiscal income, challenges in receiving and understanding warnings, or unfamiliarity with surroundings.

SEVERITY

Several factors determine the severity of floods including rainfall intensity and duration, topography, and ground cover. Floods can be slow or fast rising, but generally develop

over a period of many hours or days. There are many factors that cause or worsen flooding including dam failure, extended, localized, and heavy precipitation, especially in a wildfire burn scar area, as well as issues with stormwater drainage systems.

The frequency and severity of flooding are measured using a discharge probability, which is the probability that a certain river discharge (flow) level will be equaled or exceeded in a given year. Flood studies use historical records to estimate the probability of occurrence for the different discharge levels. The 100-year discharge has a 1% chance of being equaled or exceeded in any given year. It is possible for two or more floods with a 100-year or higher recurrence interval to occur in a short period, since these measurements reflect statistical averages only. The same flood can have different recurrence intervals at different points on a river.

The extent of flooding associated with a 1% annual probability of occurrence (the base flood or 100-year flood) is used as the regulatory boundary by FEMA and many other agencies. Also referred to as the special flood hazard area (SFHA), this boundary is a convenient tool for assessing vulnerability and risk in flood-prone communities.

WARNING TIME

Public warning can be given in an adequate amount of time if the riverine flood is slow rising, which reduces risk to life safety. While slow rise and extended flooding causes more property damage, flash flooding is associated with more injuries and deaths due to lack of notice.

SECONDARY HAZARDS

Flood can cause or exacerbate numerous hazards including dam / levee incidents, expansive soils, mine and land subsidence, and landslide / debris flow / rockfall.

Floods may result from or be made worse by multiple hazards including dam / levee incidents, earthquake, erosion / deposition, thunderstorm / lightning, and wildfire.

CLIMATE CHANGE IMPACTS

Climate change has drastically impacted weather patterns and temperature fluctuations and these impacts contribute to the potential for increased extent and frequency of floods in the future. The unpredictable nature of precipitation patterns and drought creates conditions conducive for flooding from heavy rains and/or rapid snowmelt. Wildfires are occurring more often due to drier conditions and the effects of these fires also lead to more severe and frequent flooding.

LANDSLIDE / ROCKFALL / DEBRIS FLOWS

GENERAL BACKGROUND

LANDSLIDE

According to the United States Geological Survey (USGS), a landslide is the movement of a mass of rock, debris, or earth down a slope under the direct influence of gravity. The term "landslide" encompasses five modes of slope movement: falls, topples, slides, spreads, and flows. These are further subdivided by the type of geologic material (bedrock, debris, or earth). In Region 2, the focus is on landslides, debris flows and rock falls.

Significant landslide events are influenced by seasonal temperature and precipitation patterns. These events typically occur in the spring after periods of above-average precipitation over an extended duration, which is then followed by several days of intense rainfall. Slides are more likely on the days of intense rainfall or those with extensive snowmelt. Landslide triggering rainstorms often produce damaging floods which can be made worse by the effects of the landslide. Other contributing factors include erosion and alternating freezing and thawing. Vibrations or earth shaking from construction and earthquakes are also known to trigger landslides and rockfalls.

Areas that are generally prone to landslide hazards include: existing old landslides; the bases of steep slopes; the bases of drainage channels; and developed hillsides where leach-field septic systems are used. Landslides are often a secondary hazard related to other natural disasters. In areas burned by forest and brush fires, a lack of stabilizing vegetation can increase the risk of landslides.

ROCKFALL

A rockfall is the falling of a detached mass of rock from a cliff or down a very steep slope. Weathering and decomposition of geological materials produce conditions favorable to rockfalls. Rockfalls are caused by the loss of support, from underneath, through erosion or are triggered by ice wedging, root growth, or ground shaking. Manmade changes to an area or slope, such as cutting and filling activities, can also increase the risk of a rockfall. The dimensions of the rocks in a rockfall can vary significantly,

Landslides pose a risk to life safety and any property or infrastructure exposed in the area. Injuries, deaths, and damages are potential impacts, however landslide events are typically isolated to a geographic area minimizing the severity of damages. Although, depending on the event, damages may be extensive, such as with a debris flow where the geographic area impacted is larger, while a landslide may create localized damages that are difficult to repair, such as infrastructure buried in a landslide.

Disruption of Lifelines can impact day-to-day operations, of communities, local government, and response agencies. Power outages and communications failure can put community members at increased risk, limiting the ability of first responders to receive valuable information.

Roadways can be closed for extended periods of time due to a landslide, possibly requiring extensive debris removal and repairs. Any closures could impact commuters, and first responders, ability to travel.

DEBRIS FLOW

Debris flows are sometimes referred to as mudslides, mudflows, or debris avalanches. A debris flow occurs when a combination of fast-moving water and a great volume of sediment and debris surges down slope with tremendous force. Similar to a flash flood, these events generally occur during periods of intense rainfall or rapid snowmelt and may occur with little warning. Vegetation and soil changes after a fire increase the runoff and erosion in a watershed, and significantly increase the likelihood of debris flows and flash flooding. Flash flooding and debris flows can initiate during even moderate rainstorms over burn areas. The consistency of debris flow ranges from watery mud to thick, rocky mud that can carry large items such as boulders, trees, and cars.

Debris flows typically start on steep hillsides, as shallow landslides that liquefy and accelerate to speeds of about 10 miles per hour but can exceed 35 miles per hour. Their destructive power may be greatly increased if debris flows from many different sources combine in channels. Once they reach more level or flatter ground, debris flows spread over a broad area. This can result in the accumulation of thick deposits that can drastically impact developed areas. Debris flows are covered under the National Flood Insurance Program (NFIP); however, landslides are not.

SEVERITY

All three of these “mass wasting” hazards destroy property and infrastructure and can take the lives of people. It is likely that past events have resulted in isolated deaths or multiple injuries, as well as major or long-term property damage.

WARNING TIME

Mass movements can occur suddenly or slowly. The velocity of movement may range from a slow creep of inches per year to many feet per second, depending on slope angle, material, and water content. Some methods used to monitor mass movements can provide an idea of the type of movement and the amount of time prior to failure. It is also possible to identify what areas are at risk during general time periods. Assessing the geology, vegetation, and amount of predicted precipitation for an area can help in these predictions. However, there is no practical warning system for mass wasting events. The current standard operating procedure is to monitor situations on a case-by-case basis and respond after the event has occurred.

SECONDARY HAZARDS

Mass wasting events have the potential to cause: dam / levee incidents and flood. These hazards may be the result of dam / levee incidents, earthquakes, flood, and wildfire.

CLIMATE CHANGE IMPACTS

The conditions required for mass wasting events are greatly affected by climate, including the melt speed and level of snowpack, rapid temperature fluctuations, and erratic amounts of precipitation. The integrity of the soil and rock is affected with each freeze and thaw cycle, which are occurring more often and more rapidly due to unseasonable temperature swings. As mass wasting events are more likely to occur after heavy precipitation and rapid snowpack melt, the unpredictable weather leads to dangerous conditions more frequently. The increased climate variability being experienced is expected to continue and with that the trend towards an environment more conducive to these hazards.

MINE AND LAND SUBSIDENCE

GENERAL BACKGROUND

Land subsidence according to the USGS¹ is the lowering of the land-surface elevation from changes that take place underground, including the collapse of underground mines. The voids created during these environmental changes, man-made or naturally occurring, causes significant stress on the surrounding rocks, eventually the pressure forces the walls of the void to collapse inward and the ceiling to fall. Some deformations can be elastic and rebound once the deforming forces are removed, while others are non-elastic forming over long period of time and do not recover once deforming forces are removed.

Mine subsidence refers to the effects of an existing mining tunnel collapsing and altering the ground surface above, in the form of a sinkhole or trough. Coal mining, which began in Wyoming in the 1860s, resulted in the creation of tunnels across the state and voids below the ground where coal was extracted. Over the long history of coal mining, many tunnels have not been recorded on current maps, which has led to the development of properties and structures over precarious surfaces.

Mines are supported by pillars, typically timber, which can fail leading to mine subsidence events. Collapse can happen for a variety of reasons, including pillars losing integrity and failing to support the weight of the earth above, removal or damage of pillars during mining operations, or the mine roof or floor can be too soft to provide stability for the pillars. These collapses manifest in two different ways. A sinkhole subsidence, also called a pit, is the most common, or a trough subsidence, which is also called a sag. A sinkhole, or pit, is limited to a localized area, however the size can range greatly depending on the characteristics of the mine below. The steep sided hole is very different from a trough, or sag, which creates a much broader depression in the ground surface but is relatively shallow in its effect.

Many of these older mines are shallow, which contributes to the likelihood of an event since most sinkholes develop where the vertical distance between the coal seam and the surface is less than 50 feet. Poor design and construction of the mine initially can lead to

¹ <https://geochange.er.usgs.gov/sw/changes/anthropogenic/subside/>

later events. However, it is difficult to predict where subsidence might happen as collapses can occur decades after mining is completed.

Documented mined-out areas, some of which are susceptible to subsidence in Wyoming are shown in **FIGURE 4**. **FIGURE 5** shows only coal mine sites which are generally more susceptible to subsidence than mines for other materials because many of these were underground mines.

Figure 4 Known Abandoned Mine Sites of All Types in Wyoming

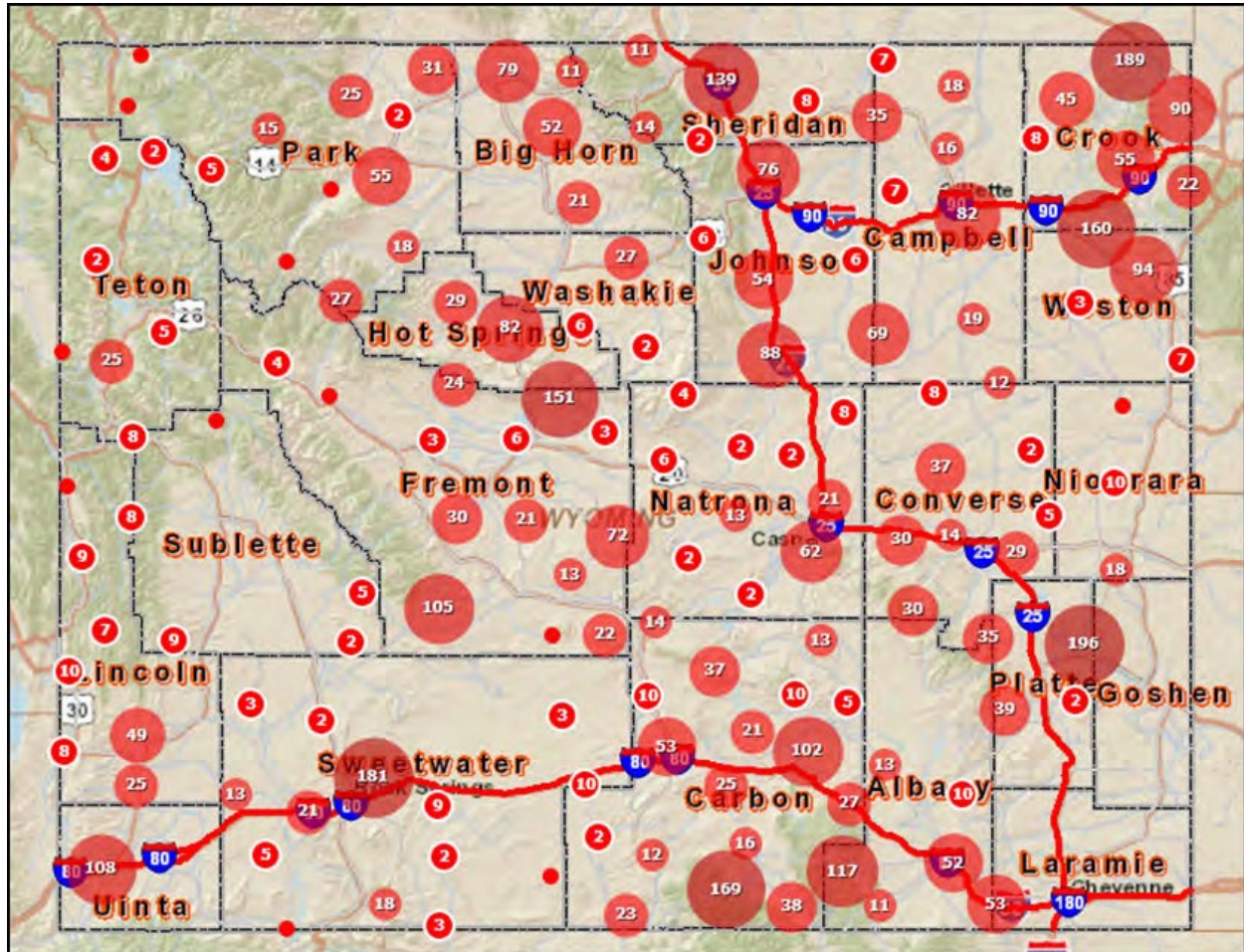
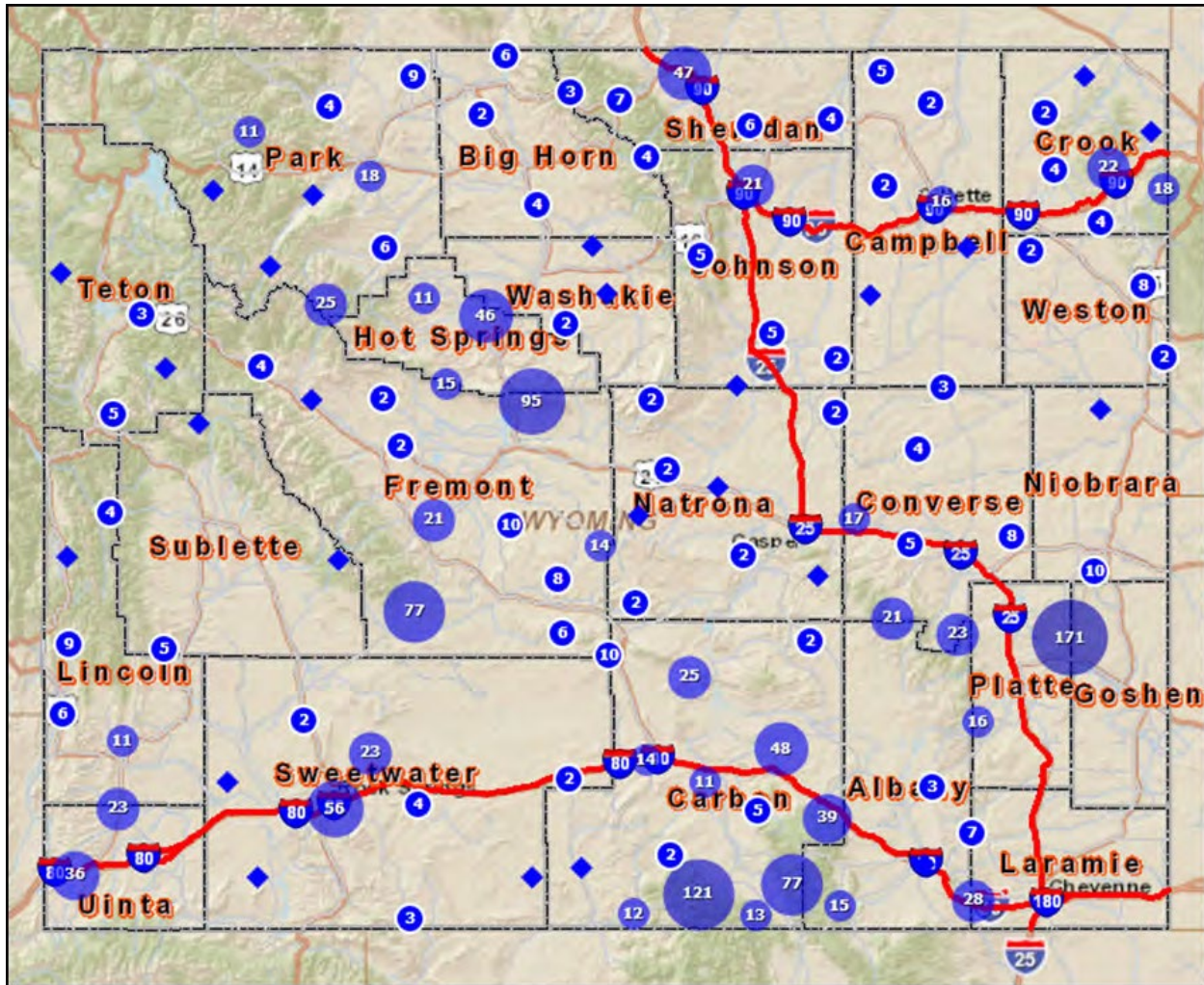


Figure 5 Known Abandoned Coal Mines in Wyoming

The extent of abandoned mines is not fully known, as records were not well maintained over the decades of mining. Therefore, more areas at risk of subsidence are likely to be identified. Sites where mine subsidence may occur are located throughout the state in both populated and unpopulated areas. Development in locations where mine subsidence occurs certainly has the potential to put individual homes or neighborhoods at risk of subsidence damage. The uncertainty regarding the locations of more potential subsidence areas means there is the possibility development may occur in a subsidence-prone location without the knowledge of contractors or developers prior to development. Given this fact, there is no way to determine with certainty the likelihood development will occur in a subsidence-prone location and therefore it's difficult to put a risk factor to this hazard as it relates to development within Wyoming's borders.

Mine subsidence events impacting future development can be minimized if proper steps are taken to assess the area being developed. To identify any possible subsidence risks, all areas should be evaluated by experts and compared to local mapping, as well as any

information available from the AML. Growth in the region has not been rapid and new development has been minimal as a result. If an area is found to have subsidence risk, but development is still planned, proper reclamation work must take place. This involves reporting sites to the AML to obtain guidance and support and ensuring contractors understand their role in safely building on a site. These steps are not only for buildings, but also for utility infrastructure. Business owners have a responsibility to assess sites through an environmental review process with the AML before installing pipelines, developing well sites, or installing power transmission lines.

Depending on the location of an event, mine subsidence could affect multiple Lifelines. Transportation could be obstructed or immobilized completely for an extended duration if a subsidence event altered the integrity of a roadway, especially a critical transit route. Energy has the potential to be disrupted if a pipeline or utility infrastructure is damaged by an event. Communication similarly could be impacted if essential equipment is affected. Food, Water & Shelter could be a large concern if an event were to include water supply infrastructure and displacement of community members stressing shelter capabilities.

SEVERITY

Mine subsidence events range greatly in magnitude, from small sinkholes in open fields to large troughs, which affect multiple homes or roadways. Depending on the event, the costs can be devastating to individuals and significant to local communities. County economies may be impacted if subsidence affects the integrity of roadways, infrastructure, and public buildings. Slowing or halting of transportation across a critical transit route, while repairs are completed, can have negative impacts on important transit and commuters. Damage to infrastructure or buildings may require extensive repairs or relocation to be available for use. Homeowner's insurance does not typically cover subsidence events and the burden, which can be substantial, falls to the property owner. Regionally, mine subsidence events are not likely to have a large economic impact, as they are localized to specific areas. While mine subsidence has the potential to cause extensive property damage, the reclamation work of the abandoned mines has a local benefit beyond safety.

WARNING TIME

Mine and land subsidence are slow onset hazards but it is possible to monitor structures and infrastructure that are potentially at risk because hazard areas are generally known and increasingly identified.

SECONDARY HAZARDS

There are no secondary hazard directly associated with mine and land subsidence

CLIMATE CHANGE IMPACTS

It is likely there will be future mine subsidence events in Region 2. Since it is possible properties are built near or on unidentified abandoned mines, future subsidence events could affect property. Climate change impacts the likelihood of mine subsidence events in

multiple ways. Unpredictable precipitation and weather patterns can lead to unexpected runoff from heavy precipitation and temperature fluctuations leading to rapid snowmelt can fill mine tunnels. The inconsistent cycles of very wet periods and extended dry periods from drought can affect the integrity of the mine supports and the earth above which is likely to be compromised. After a very dry period, the weight of moisture in the soil from an extended precipitation event can challenge the mine roof's ability to stay intact. If a temperature fluctuation freezes saturated soil, the effects of the expanding and contracting ice over rapid freeze and thaw can also impact the integrity of the structure.

SEVERE WEATHER

GENERAL BACKGROUND

THUNDERSTORM

A thunderstorm is a rain event that includes thunder and lightning. A thunderstorm is classified as "severe" when it contains one or more of the following: hail with a diameter of three-quarter inch or greater, winds gusting in excess of 50 knots (57.5 mph), or tornado.

Thunderstorms are dangerous electrical storms capable of producing high winds, heavy rains, lightning, and hail. The typical thunderstorm is 15 miles in diameter and is formed in what is known as a cumulonimbus cloud. Thunderstorms often occur in large groups, or fronts, and are often felt over an entire county or regional area within a state. Per the National Weather Service (NWS) of the estimated 100,000 thunderstorms that occur each year in the United States, about 10 percent are classified as severe. Every thunderstorm needs three basic components:

- Moisture to form clouds and rain;
- Unstable air which is warm air that rises rapidly; and,
- Lift, which is a cold or warm front capable of lifting air to help form thunderstorms.

LIGHTNING

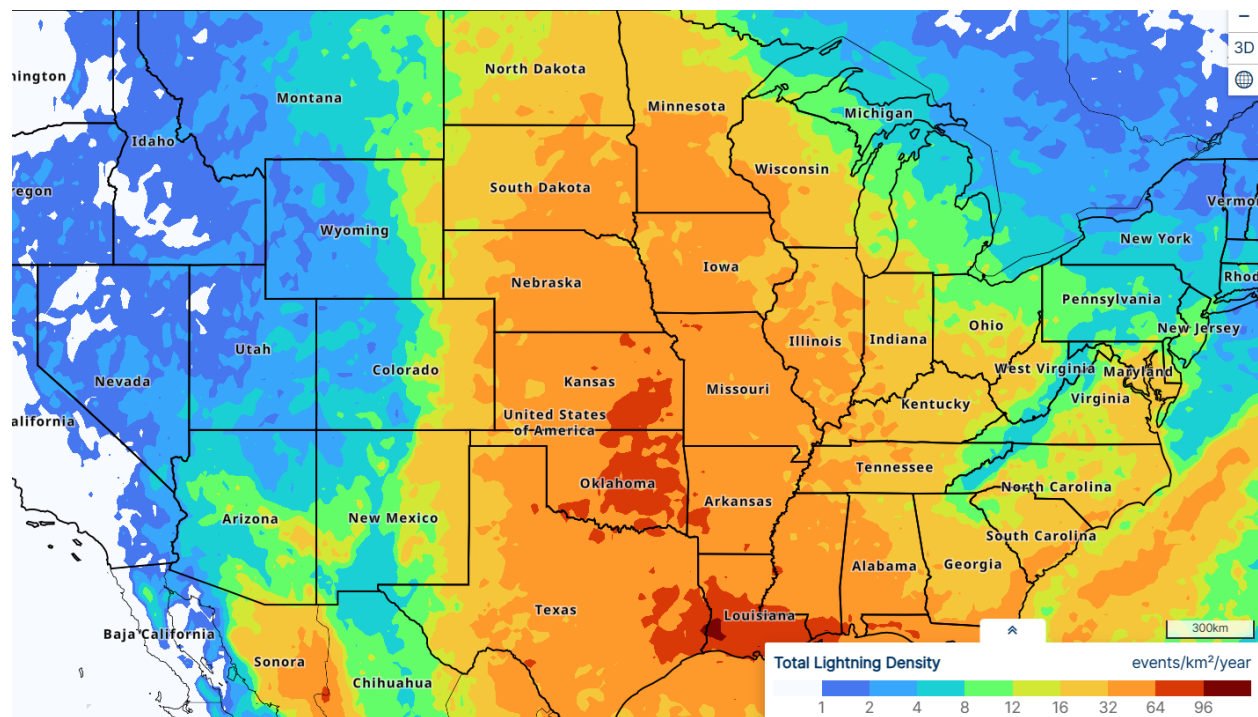
Lightning is an electrical discharge between positive and negative regions of a thunderstorm. Intra-cloud lightning is the most common type of discharge and occurs between oppositely charged centers within the same cloud.

The less common type, cloud-to-ground lightning, is the most damaging and dangerous form. Most flashes originate near the lower-negative charge center and deliver negative charge to earth. However, a minority of flashes carry positive charge to earth and these positive flashes tend to occur during the dissipating stage of a thunderstorm's life. Positive flashes are more common during the winter months, as a percentage of total ground strikes. Cloud-to-ground lightning frequently strikes away from the rain core, either ahead of or behind the thunderstorm and strike up to 10 miles from the storm, in areas that may be considered out of harm's way. Positive lightning has a longer duration and usually carries a high peak electrical current, potentially resulting in greater damage and increasing the likelihood of igniting a fire.

According to the National Lightning Safety Institute, lightning causes more than 26,000 fires in the United States each year. The institute estimates property damage, increased operating costs, production delays, and lost revenue from lightning and secondary effects to be in excess of \$6-7 billion per year. Impacts can be direct or indirect, as people or objects can be directly struck, or damage can occur indirectly when the current passes through or near the object or person.

The geographic extent for lightning can be a regional hazard measured by the possible places of occurrence, or referred to a single-point occurrence and measured according to density. While anywhere in the planning area is susceptible to lightning, examining the density of the lightning flashes can assist in identifying the potential impacts of the hazard. According to data in the 2021 report from Vaisala's U.S. National Lightning Detection Network (NLDN), Wyoming ranked 31st in the nation, for 2021, for total cloud-to-ground and cloud pulse lightning counts with over 1.5 million strokes and pulses. In the 2020 lightning report, Wyoming ranked 29th with 1.2 million strikes which was 46% of the average density compared with the averages from 2015-2019, shown in **Figure 6** Region 2 overall has an average cloud-to-ground flash density of between 4 to 16 flashes per km² per year, based on data from 2016-2022.

Figure 6 Average US Cloud-to-ground Flash Density 2016-2022



In Wyoming, outdoor enthusiasts venturing to high and exposed areas should be especially cautious because rapid thunderstorm development with associated lightning can place even the most experienced climbers in jeopardy without warning. Hikers and climbers above the timberline should plan to be off exposed mountain tops and ridges by

2 p.m. during the summer months to avoid being struck by lightning unless proper shelter is available (Wyoming Climate Atlas).

HAIL

Hail is a form of precipitation that occurs when updrafts in severe storms carry raindrops upward into extremely cold areas of the atmosphere. The super cooled raindrops grow into balls of ice, posing a hazard to property, people, livestock, and crops when they fall back to the earth. The process of falling, thawing, moving up into the updraft, and refreezing before failing again may repeat many times, increasing the size of the hailstone. Typically, hailstones are less than 2" in diameter, although much larger have been reported and hailstones may fall at speeds of up to 120 mph. Hail causes nearly \$1 billion in damage to crops and property each year across the nation and is one of the primary natural disasters resulting in USDA Secretarial disaster designations.

Hailstorms occur during severe storms and are therefore regional in nature. The amount of precipitation in the form of snow or rain may vary significantly within a single storm, and so may the amount, size, and duration of hail within a severe storm. This can have a wide range of impacts as the storm travels and the effects on life safety and property can vary greatly across the region. Region 2 communities are located in what is considered to be the nation's "Hail Alley." Together with adjacent portions of Colorado and Nebraska, the southeast area of Wyoming is battered by more hailstorms than any other part of the United States. Climatological data shows this area of Wyoming averages five to nine days annually when hail is reported. It is worth noting that hail frequency may be difficult to quantify, as it is most commonly reported in populated areas eliminating many storms from record.

WIND

The risk assessment for wind includes windstorms, thunderstorm winds, and other high wind events, as well as the resulting windblown deposits. The following sections further define high wind events that are discussed in each county's risk assessment section.

Non-thunderstorm, widespread "high wind" behind cold-frontal passages in the wake of strong synoptic-scale low pressure systems can bring extensive wind damage. Severe thunderstorms develop powerful updrafts and downdrafts. An updraft of warm, moist air helps to fuel a towering cumulonimbus cloud reaching tens of thousands of feet into the atmosphere. A downdraft of relatively cool, dense air develops as precipitation begins to fall through the cloud. Winds in the downdraft can reach in excess of 87 knots (kts) or 100 miles per hour (mph). When the downdraft reaches the ground, it spreads out forming a gust front: the strong, often refreshing wind that kicks up just before the storm hits. As the thunderstorm moves through the area, the full force of the downdraft in a severe thunderstorm can be felt as horizontal, straight-line winds with speeds well over 44 kts (50 mph). Severe thunderstorms in Wyoming can produce wind gusts to 50 to 91 kts (58 to 105 mph) per NWS and NCEI data.

Straight-line winds are currents of air in which the ground-relative motion does not have any significant curvature. They are used in the context of surface winds that inflict

damage and are distinguished from winds in tornadoes, which have significant curvature. Straight-line winds are often responsible for most of the damage associated with a severe thunderstorm. Damaging straight-line winds occur over a range of scales. At one extreme, a severe single-cell thunderstorm may cause localized damage from a microburst, which is a severe downdraft extending less than two miles across. In contrast, a powerful thunderstorm complex that develops as a squall line can produce damaging winds that carve a path as much as 100 miles wide and 500 miles long. Severe thunderstorm wind events can inflict considerable damage on trees, power lines, and other wooden structures.

The non-thunderstorm, widespread “high wind” events usually occur during the cooler part of the year, from October through April. During this time of the year, the atmospheric pressure differences between high pressures and low pressures are maximized. This results in tighter pressure gradients which generate stronger surface winds. These non-thunderstorm “high wind” events usually have wind gusts from 50 to 87 knots (58 to 100 mph) that can persist for 6 to 18 hours over large areas. Non-thunderstorm winds account for most high wind events within the planning area.

Damaging windstorm events may occur anywhere in Region 2. However, damaging winds may not affect all jurisdictions equally, as damage associated with a severe thunderstorm tends to be a geographically isolated event, affecting only small areas of several square miles at any one time. On the other hand, widespread, non-thunderstorm high winds can affect much of the planning area.

Windblown deposits, also called loess, form when very small particles of sand, silt, or clay materials are carried by wind and deposited on the ground. Windblown deposits are considered a part of the wind hazard, as the Wyoming State Geological Survey (WSGS) states they have the potential to damage property. They can also affect water supplies, agriculture, and infrastructure. While some counties in the Region have a considerable number of locations identified for windblown deposits, they do not pose a notable risk to the populations in the Region. The majority of locations for deposits are outside of municipal areas, although there are homes in unincorporated areas which sit in identified windblown deposits locations. Increased development of identified areas can potentially destabilize soil, contributing to more deposit movement occurring.

TORNADO

A tornado is a mobile, violently rotating column of air that extends from the base of a thunderstorm to the ground. They are visible once condensation forms within the funnel shaped column and collects dust and debris. Tornadoes occur primarily between May and July but can happen any time of year. While most occurrences are between 4 pm and 9 pm, tornadoes can happen day or night. Every tornado has the potential to threaten lives, property, crops and livestock. The strongest tornadoes are capable of ripping structures apart, destroying trees, and lifting vehicles.

The amount of destruction and injury caused by a tornado varies significantly depending on several factors. Location is one of the key determinants of damages a tornado can cause, an unpopulated rural area will not see the same extent of damages or threats to

life safety as an urban area with dense development. The factors of strength, duration, and if the funnel contacts the ground influence the severity of repercussions from the tornado. The size of the tornado and length of the path, if it travels, also greatly impact potential devastation. Some tornados stay stationary while others travels miles at great speeds. A low rated tornado, which lasts for a few minutes and touches down briefly may still cause extensive damage but is likely to wreak less havoc that a higher rated storm, which lasts for an hour makes ground contact and travels.

Tornadoes can travel at up to 70 mph, while the vortex itself can produce rotating winds over 200 mph. It is possible for a tornado to be over 1000 yards wide and travel as much as 50 miles. However, most tornadoes are short lived, have wind speeds less than 100 mph, are around 50 yards wide, and the typical speed of travel is around 30 mph.

Wyoming lies just west of "Tornado Alley," and is fortunate to experience less frequent and intense tornadoes than its neighboring states to the east. Although, tornadoes remain a significant hazard in the state. Tornadoes are possible anywhere in Wyoming, especially in the plains region where Region 2 communities are located. The severe weather conditions that spawn tornadoes are regional events which may impact any extent of the planning area at a given time. However, tornadoes, as a stand-alone event are single-point (or limited point) occurrences, are more likely to have a localized impact than affecting the overall region.

SEVERITY

THUNDERSTORM

The Storm Prediction Center (SPC) a part of the National Weather Experience uses a scale from 1 to 5 to measure the severity of thunderstorms shown in **Figure 7**.

Figure 7 Severe Thunderstorm Risk Categories

THUNDERSTORMS (no label)	1 - MARGINAL (MRGL)	2 - SLIGHT (SLGT)	3 - ENHANCED (ENH)	4 - MODERATE (MDT)	5 - HIGH (HIGH)
No severe* thunderstorms expected	Isolated severe thunderstorms possible	Scattered severe storms possible	Numerous severe storms possible	Widespread severe storms likely	Widespread severe storms expected
Lightning/flooding threats exist with <u>all</u> thunderstorms	Limited in duration and/or coverage and/or intensity	Short-lived and/or not widespread, isolated intense storms possible	More persistent and/or widespread, a few intense	Long-lived, widespread and intense	Long-lived, very widespread and particularly intense
					

LIGHTNING

Lightning is measured by the Lightning Activity Level (LAL) scale, created by the National Weather Service to define lightning activity into a specific categorical scale. The LAL is a common parameter that is part of fire weather forecasts nationwide. Due to the high elevation and varied topography of the State, various areas of the state are at risk of experiencing lightning in any of these categories. The LAL is reproduced in **Table 8**.

Table 8 Lightning Activity Levels Scale

Lightning Activity Level	
LAL 1	No thunderstorms
LAL 2	Isolated thunderstorms. Light rain will occasionally reach the ground. Lightning is very infrequent, 1 to 5 cloud to ground strikes in a five-minute period
LAL 3	Widely scattered thunderstorms. Light to moderate rain will reach the ground. Lightning is infrequent, 6 to 10 cloud to ground strikes in a five-minute period.
LAL 4	Scattered thunderstorms. Moderate rain is commonly produced. Lightning is frequent, 11 to 15 cloud to ground strikes in a five minute period.
LAL 5	Numerous thunderstorms. Rainfall is moderate to heavy. Lightning is frequent and intense, greater than 15 cloud to ground strikes in a five-minute period.
LAL 6	Dry lightning (same as LAL 3 but without rain). This type of lightning has the potential for extreme fire activity and is normally highlighted in fire weather forecasts with a Red Flag warning.

Lightning can cause deaths, injuries, and property damage, including damage to buildings, communications systems, power lines, and electrical systems. It also causes forest and brush fires.

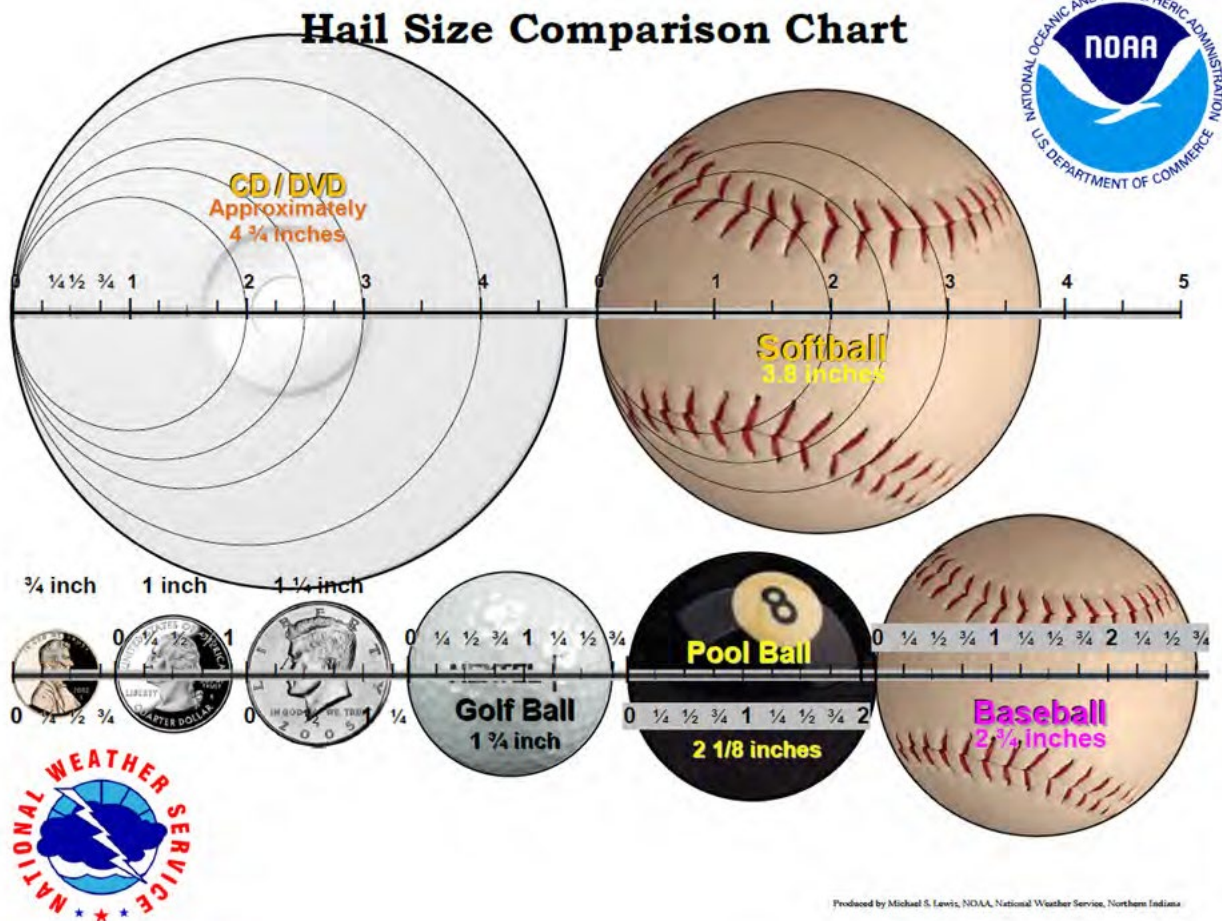
HAIL

The National Weather Service (NWS) classifies hail by diameter size, and corresponding everyday objects to help relay scope and severity to the population. **TABLE 9** and **FIGURE 8** below shows the hailstone measurements utilized by the NWS.

Table 9 Hail Size Description Chart

Hail Stone Size	Measurements (inches)
Pea	0.25
Peanut	0.50
Penny	0.75
Nickle	0.88
Quarter	1
Half Dollar	1.25
Golf ball	1.75
Lime	2
Tennis Ball	2.5
Baseball	2.75
Large Apple	3
Softball	4
Grapefruit	4.50

Figure 8 Hail Size Comparison Chart



There is no clear distinction between storms that do and do not produce hailstones. Nearly all severe thunderstorms probably produce hail aloft, though it may melt before reaching the ground. Multi-cell thunderstorms produce many hailstones, but not usually the largest hailstones. In the life cycle of the multi-cell thunderstorm, the mature stage is relatively short so there is not much time for growth of the hailstone. Supercell thunderstorms have sustained updrafts that support large hail formation by repeatedly lifting the hailstones into the very cold air at the top of the thunderstorm cloud. In general, golf ball sized hail or larger is associated with supercells, but non-supercell storms are also capable of producing golf ball size hail.

WIND

The Beaufort Wind Scale, summarized in **Table 10**, is used to measure the severity of high winds. Hurricane force winds are defined as a speed equal to or greater than 64 knots (74 mph) or Beaufort Number 12 (Force 12). Hurricane-force winds are not exclusive to hurricanes; they occur quite often in strong non-tropical storms such as the northeaster, or even in severe thunderstorms.

Table 10 Beaufort Wind Scale

Force	Wind Speed (KTS)	WMO Classification	Appearance of Wind Effects (on Land)
0	< 1	Calm	Calm, smoke rises vertically
1	1-3	Light Air	Smoke drift indicated wind direction, still wind vanes
2	4-6	Light Breeze	Wind felt on face, leaves rustle, vanes begin to move
3	7-10	Gentle Breeze	Leaves and small twigs constantly moving, light flags extended
4	11-16	Moderate Breeze	Dust, leaves, and loose paper lifted, small tree branches move
5	17-21	Fresh Breeze	Small trees in leaf begin to sway
6	22-27	Strong Breeze	Larger tree branches moving, whistling in wires
7	28-33	Near Gale	Whole trees moving, resistance felt walking against wind
8	34-40	Gale	Twigs breaking off trees, generally impedes progress
9	41-47	Strong Gale	Slight structural damage occurs, slate blows off roofs
10	48-55	Storm	Seldom experienced on land, trees broken or uprooted, "considerable structural damage"
11	56-63	Violent Storm	
12	64+	Hurricane	

While many people correlate wind damage with tornadoes, straight-line winds associated with severe thunderstorms can cause extensive damage as well. These winds can become hurricane-force in the worst cases. The following table (**Table 11**) lists relative wind speeds and anticipated effects.

Table 11 Wind Speeds and Effects

Wind Speed (knots)	Wind Speed (MPH)	Wind Effects
22-27	25-31	Large branches in motion.
28-33	32-38	Whole trees in motion, inconvenience in walking against the wind.
34-47	39-54	Twigs and small branches break off trees, difficulty in walking against the wind, high profile vehicles such as trucks and motor homes may be difficult to control.
48-64	55-74	Potential damage to antenna structures, wind may push over shallow rooted trees, especially if the soil is saturated.
65-83	75-95	Potential for minor structural damage, particularly to manufactured homes, power lines, trees, and signs may be blown down.
84-96	96-110	Moderate structural damage to walls, roofs, and windows, trees blown down, and manufactured homes may be destroyed.
97-113	111-130	Extensive damage to walls, roofs, and windows, trees blown down, moving vehicles pushed off roads.
114-135	131-155	Extreme damage to structures and roofs, trees uprooted or snapped.
> 135	> 155	Catastrophic damage, structures destroyed.

The entire population of the Region is vulnerable to high winds and thunderstorm winds. The availability of sheltered locations such as basements, buildings constructed using tornado-resistant materials and methods, and public storm shelters, all reduce the exposure of the population. Extended power outages present a challenge for all of the population in the Region. Those who may need more assistance obtaining information and

resources, such as those with mobility issues, powered medical equipment, and chronic illness, are especially at risk from extended power outages. Without a back-up power source, rural residents and agricultural operations that are reliant on electricity for heating, cooling, and water supplies are especially vulnerable to power outages.

In terms of property losses caused by any high-wind hazard, the damages will depend on the building density and quality of construction in the impacted area. Buildings that are close to large trees or overhead power lines are at greater risk of suffering more extensive damages. Damages could be significant to local residential structures and commercial buildings, as well. Construction practices can help maximize the resistance of the structures to damage.

In terms of crop losses, the damages that occur will depend on the type of crop and the growth stage of the plants. A wind storm in a rural area in the early spring when the plants are just emerging will have much less of an impact than a storm of the same intensity occurring later in the growing season when the plants are more susceptible to damage and when there is no time to replant if the crop is a total loss.

High wind events have the potential to wreak havoc on above-ground infrastructure, such as power and communication lines. Downed power and communications transmission lines, coupled with disruptions to transportation, create difficulties in reporting and responding to emergencies.

It is not uncommon for semi-trailers to blow over in high wind events and multiple events listed this occurrence in the NCEI narrative. Other potential damages due to high wind events include power pole and power line downing, leading to power outages that can be significant and extended. For property, damaged roofs, toppled trees, broken branches, and blown-out windows are possible and crops may be destroyed in an event.

Windblown deposits have the potential to cause air quality issues for people outdoors during an instance of loess being carried. Damage to infrastructure and property are possible as the silt or small sand particles may create issues if they infiltrate sensitive areas. Large movement of deposits or dunes can cover roads or build up against a structure, much like a snow drift.

New development in areas of windblown deposits have the potential to destabilize the deposit, which can create movement of a large amount of deposits. Mobile, large deposits have been known to cover roads, and in some cases build up around homes.

TORNADO

The amount of destruction and injury caused by a tornado varies significantly depending on several factors. Location is one of the key determinants of damages a tornado can cause, an unpopulated rural area will not see the same extent of damages or threats to life safety as an urban area with dense development. The factors of strength, duration, and if the funnel contacts the ground influence the severity of repercussions from the tornado. The size of the tornado and length of the path, if it travels, also greatly impact potential devastation. Some tornadoes stay stationary while others travels miles at great speeds. A low rated tornado, which lasts for a few minutes and touches down briefly may

still cause extensive damage but is likely to wreak less havoc than a higher rated storm, which lasts for an hour makes ground contact and travels.

Tornadoes can travel at up to 70 mph, while the vortex itself can produce rotating winds over 200 mph. It is possible for a tornado to be over 1000 yards wide and travel as much as 50 miles. However, most tornadoes are short lived, have wind speeds less than 100 mph, are around 50 yards wide, and the typical speed of travel is around 30 mph.

Tornadoes are classified on an intensity scale and prior to 2007 this scale was the Fujita (F) Scale, which has seven categories (F0-F6). The Fujita Scale was used to rate the intensity of a tornado by examining the damage caused by the tornado after it has passed over a man-made structure.

On February 1, 2007, the Fujita scale was decommissioned in favor of the more accurate Enhanced Fujita Scale (EF Scale). The EF Scale measures tornado strength and associated damages and classifies tornadoes into six intensity categories, as shown in **TABLE 12**. The EF Scale better reflects examinations of tornado damage surveys, so as to align wind speeds more closely with associated storm damage. The new scale takes into account how most structures are designed and is thought to be a much more precise representation of the surface wind speeds in the most violent tornadoes.

Table 12 Enhance Fujita (EF) Scale

Enhanced Fujita Category	Wind Speed (MPH)	Potential Damages
EF 0	65-85	Light damage: Peels surface off some roofs; some damage to gutters or siding; branches broken off trees; shallow-rooted trees pushed over.
EF 1	86-110	Moderate damage: Roofs severely stripped; mobile homes overturned or badly damaged; loss of exterior doors; windows and other glass broken.
EF 2	111-135	Considerable damage: Roofs torn off well-constructed houses; foundations of frame homes shifted; mobile homes completely destroyed; large trees snapped or uprooted; light-object missiles generated; cars lifted off ground.
EF 3	136-165	Severe damage: Entire stories of well-constructed houses destroyed; severe damage to large buildings such as shopping malls; trains overturned; trees debarked; heavy cars

Enhanced Fujita Category	Wind Speed (MPH)	Potential Damages
		lifted off the ground and thrown; structures with weak foundations blown away some distance.
EF 4	166-200	Devastating damage: Well-constructed houses and whole frame houses completely leveled; cars thrown, and small missiles generated.
EF 5	>200	Incredible damage: Strong frame houses leveled off foundations and swept away; automobile-sized missiles fly through the air in excess of 100 m (109 yds.); high-rise buildings have significant structural deformation; incredible phenomena will occur.

The NWS, along with the Texas Tech University Wind Science and Engineering Research Center, developed 28 damage indicators to be used with the Enhanced Fujita Scale for different types of buildings and ranges of wind speeds. Some of these indicators include type of building, number of floors, construction material, building purpose, and types of trees.

Tornadoes can wreak havoc on all aspects of a community. Life safety, property, livestock, crops, and Lifelines are all at risk of impacts from a tornado event.

General damages are both direct, what the tornado physically destroys, and indirect. Indirect focuses on additional costs, damages, and losses attributed to secondary hazards and/or damages caused by the tornado. Depending on the size of the tornado, its path, and the length of time on the ground, a tornado is capable of damaging or destroying almost anything in its path. Buildings that are close to large trees or overhead power lines are at greater risk of more extensive damages. Construction practices can help maximize the resistance of the structures to damage.

WARNING TIME

Meteorologists can often predict the likelihood of a severe thunderstorm. This can give several days of warning time. However, meteorologists cannot predict the exact time of onset or severity of the storm including the possibility and size of hail, the time of onset or severity of a storm, or the strength of wind gusts. Some storms may come on more quickly and have only a few hours of warning time.

NOAA's storm prediction center issues tornado watches and warnings for Region 2:

- Tornado Watch - Tornadoes are possible. Remain alert for approaching storms. Watch the sky and stay tuned to NOAA Weather Radio, commercial radio, or television for information—

- Tornado Warning - A tornado has been sighted or indicated by weather radar. Take shelter immediately.

Once a warning has been issued, residents may have only a matter of seconds or minutes to seek shelter.

SECONDARY HAZARDS

Severe weather can result in various additional hazards. Lightning strikes and severe wind can cause wildfires and thunderstorms can cause flooding and dam / levee incidents.

CLIMATE CHANGE IMPACTS

Climate change has the potential to increase the frequency of and severity of severe weather events. As humidity is lowered, due to rising temperatures, extended drought, and extreme heat events, convective instability increases. The movement of dry air into thunderstorms can increase the likelihood and size of hail due to evaporate cooling which lowers the elevation of the freezing level in thunderstorm clouds. This creates an opportunity for hailstones to grow larger and become more dangerous, as well as appear in areas where hail was uncommon previously, due to unpredictable weather patterns. The unpredictable number of storms and their characteristics indicate the amount of lightning they bring could change drastically. With the changing weather patterns, the potential increase in thunderstorms events can result in increased lightning occurrences.

The changes in weather patterns include increases in warm, moist air and wind shear, as well as an unstable atmosphere which create more favorable environments for tornadoes. These trends can possibly increase future occurrences and as climate change effects continue that likelihood grows.

WILDFIRE

GENERAL BACKGROUND

As defined by the National Interagency Fire Center (NIFC), a “wildland fire” is any non-structure fire, other than prescribed fire, that occurs in the wildland. Wildland Urban Interface (WUI) is a widely used term within the wildland fire management community to describe any area where man-made buildings are constructed close to or within a boundary of natural terrain and fuel, where high potential for wildland fires exists.

As the population and the WUI development in Wyoming increases, the higher the risk of wildland fire hazard becomes. The past 100 years of wildland fire suppression has led to heavy vegetation growth and thus has greatly increased the potential fuel-load for a wildfire to burn. As the WUI has grown into these densely packed forests, the potential for catastrophic wildland fires has increased as well.

Although different reports, assessments, plans, and programs have been developed by different organizations at all levels of government, interagency coordination has proven to be more effective, and today Wyoming wildland fires are managed and supported to varying extents through these cooperative efforts.

Historical wildfire incidents are reported through the Wyoming Wildfire Risk Assessment Portal (WYWRAP) and the Historic Fires Database, which were used to identify incidents that have occurred within or near the planning area. For this plan, population risk was analyzed using the footprint of structures exposed to the top 20% highest risk areas for wildfire. These data sets are considered the best-available data for assessing the planning area's previous occurrences of wildfires and their associated risk.

Fuels (combustible material) to wildfires are subject to a variety of ignition sources, including natural and human caused variations. Another important aspect of fuel quality is the total surface area of the material that is exposed to heat and air. Fuels with large area-to-volume ratios, such as grasses, leaves, bark and twigs, are easily ignited when dry. Historically, fire starts have been contained quickly with minimal loss to property and structures. Several factors can contribute to a fire spreading quickly, including drought, Red Flag conditions (warm temperatures, very low humidity, and stronger winds), and high wind events. Due to the arid climate within the planning area, wildland fires can and do occur on a year-round basis.

Climatic and meteorological conditions that influence wildfires include solar insulation, atmospheric humidity, and precipitation, all of which determine the moisture content of wood and leaf litter. Dry spells, heat, low humidity, and wind increase the susceptibility of vegetation to fire. Additional natural agents can be responsible for igniting wildfires, including lightning, sparks generated by rocks rolling down a slope, friction produced by branches rubbing together in the wind, and spontaneous combustion.

Arson and accidents, including sparks from equipment and vehicles, cause wildfires and human-caused wildfires are typically worse than those caused by natural agents. Arson and accidental fires usually start along roads, trails, streams, or at dwellings that are generally on lower slopes or bottoms of hills and valleys. Nurtured by updrafts, these fires can spread quickly uphill. Arson fires are often set deliberately at times when factors such as wind, temperature, and dryness contribute to the spread of flames.

Wildfire is unpredictable and can change direction and intensity level in a matter of minutes, as well as make large runs which burn acres rapidly. Due to this, property damage ranges drastically even within a small area. In some cases, a small portion, or the roof, of a house may be damaged by hot embers that are blown onto the structure and ignite the materials, while the house next door may burn completely.

Wildfire has the potential to contaminate water supply and burn crops in a prairie fire. Fires can lead to debris flows and flooding, affecting the landscape and the habitats in the area, as well as any communities in the flow path.

Lifelines could be affected by wildfire. Transportation can be affected by roads closing due to the fire itself, the responders needing access, or evacuated areas that are not open for the public. Communication equipment and infrastructure can be damaged, hindering the abilities of responders. Power can be affected if infrastructure is damaged and depending on the length of the outage, can impact the ability of residents to stay at home. This can be especially dangerous for those who rely on powered medical equipment.

Wildfires have the potential to impact the economy in all counties in the Region. If a large number of public buildings and businesses were damaged within a community it could result in negative economic impacts until cleanup, repair work, and necessary construction is completed.

SEVERITY

The magnitude of wildfires is typically measured by how many acres they burn. In total 479,160 acres have been burned by wildfires in R2. The acreage burned by the largest wildfire event in the region exceeded 50,000, while many events are below 100, indicating that the region experiences a range of wildfire severity.

WARNING TIME

Wildfires are often caused by humans, either intentionally or accidentally. There is no way to predict when one might break out. Because fireworks often cause brush fires, extra diligence is warranted around the Fourth of July when the use of fireworks is highest. Dry seasons and droughts are factors that greatly increase fire likelihood. Dry lightning may trigger wildfires. Severe weather can be predicted, so special attention can be paid during weather events that may include lightning. Reliable National Weather Service lightning warnings are available on average 24 to 48 hours before a significant electrical storm.

If a fire does break out and spreads rapidly, residents may need to evacuate within hours or minutes. A fire's peak burning period generally is between 1 p.m. and 6 p.m. Once a fire has started, fire alerting is reasonably rapid in most cases. Improvements to communication technologies have further contributed to a significant improvement in warning time.

Fuels, weather, and topography all contribute to fire spread rate. When considering fuels, there are multiple factors including type, especially dry and small vegetation, the quantity, and spacing of fuels (both horizontal and vertical). Weather influences spread based on wind and moisture. Topography includes slope, aspect, and terrain that each impact rate of spread in a variety of ways. Topography can increase the rate of spread up steep slopes, the amount of sunlight a fire gains heat from, and influence the behavior of winds. Topography can also affect responder's ability to access certain areas and suppress fire activity.

SECONDARY HAZARDS

Hazards that cause or contribute to wildfire are drought and severe weather. Wildfire can cause or worsen flood events and landslide / debris flow / rockfall events.

Public health can also be affected, even significant distances away, by the smoke and ash from a nearby fire. This is dangerous for the entire population, but especially hazardous to those with respiratory conditions, children, and the elderly.

CLIMATE CHANGE IMPACTS

Climate change (coupled with past forest management practices) has steadily increased the frequency and intensity of wildfires around the nation. Continued unpredictable precipitation and weather patterns will lead to increased occurrence, extended durations, and magnified severity. The patterns of drought, brought by drier and hotter climate, create conditions that wildfires thrive in, and these fires have begun to consistently spread faster and farther. Wildfires will continue to thrive on the lack of humidity and dry vegetation created by drought, often perpetual. Hotter conditions fuel fires, the extreme temperature fluctuations and unseasonable increases in heat have and will continue to create longer wildfire seasons.

WINTER STORM

GENERAL BACKGROUND

Winter storms, which include blizzards, ice storms, and snow squalls, threaten life safety, property, crops, and livestock. Winter storms can bring various types of precipitation including snow, sleet, and freezing rain, along with extreme cold and strong winds. The duration of a storm can affect its categorization, such as storms labeled as blizzards which produce winds over 35 mph with snow and blowing snow, reduce visibility to 1/4 mile or less, and last for at least 3 hours.

During an ice storm, accumulation of ice can occur quickly, because of freezing rain, creating a thick layer of ice on the ground, roads, trees, and power lines. The weight of this accumulation can lead to downed trees and power lines. Heavy snow, or snow with a high moisture content, can fall rapidly and damage infrastructure, property, and impact transportation routes. Strong winds also pose a threat to utility poles and trees, as well as contributing to blowing snow and snow drifts.

All winter storms affect the safety of roads and can result in vehicle accidents and stranded motorists. Livestock and crops can be affected by all winter storms, particularly unsheltered livestock. The duration and amount of precipitation are critical factors in the severity and danger a storm presents, as well as the presence of extreme cold.

While most winter storms have the potential to cause disruption to daily operations, not all of them have disastrous effects. In Region 4, where winter storms are an annual occurrence, communities often continue to function with minimal adjustments. However, storms that present greater risk to public safety, Lifelines, and property can halt day-to-day activities and transportation, possibly for an extended period. Winter storms typically affect a large area and if much of the region has been impacted by the same storm returning to normal functionality can be more difficult.

EXTREME COLD

Extreme cold is relative to the normal temperatures in an area and can vary drastically depending on location. For the region, events as low as -60°F have been recorded, but any temperatures which drop much lower than average for the time of year can be

considered extreme cold. This is especially the case when wind speeds pick up and the wind chill factor creates more life-threatening temperature drops. Extreme cold presents a threat to life safety, property, crops, and livestock. Exposure to extreme cold, with or without precipitation can rapidly lead to frost bite, hypothermia, and death.

SEVERITY

In 2001, the National Weather Service (NWS) implemented an updated Wind-Chill Temperature index (Figure 3.4). Wind-chill is not a direct measurement of temperature, this index was developed to describe the relative discomfort/danger resulting from the combination of wind and temperature. Wind chill is based on the rate of heat loss from exposed skin caused by wind and cold. As the wind increases, it draws heat from the body, driving down skin temperature and eventually the internal body temperature, increasing the likelihood of severe injury or death to exposed persons and animals.

WARNING TIME

The forecasting of winter storms allows the public to prepare for the type of storm through Watch and Warning notifications. These are issued by the National Weather Service (NWS), depending on the characteristics of the weather conditions. A Winter Storm Watch is issued 12 to 48 hours in advance of the onset of the conditions and may upgrade to a Warning depending on the development of the storm. A Winter Storm Warning is issued 12 to 24 hours before the expected event and is issued when a combination of hazardous weather elements, including heavy snow, heavy freezing rain, or heavy sleet are imminent.

SECONDARY HAZARDS

The most significant secondary hazards associated with severe winter storms are falling and downed trees, landslides, and downed power lines. Rapidly melting snow combined with heavy rain can overwhelm both natural and manmade drainage systems, causing overflow and property destruction. Landslides occur when the soil on slopes becomes oversaturated and fails. Additionally, the storms may result in closed highways and blocked roads. It is not unusual for motorists and residents to become stranded. Annually, heavy snow loads and frozen pipes cause damage to residences and businesses. Late season heavy snow will typically cause some plant and crop damage.

CLIMATE CHANGE IMPACTS

As climate change unpredictably affects weather patterns, the types and numbers of winter storms are being impacted. The intensity and frequency of storms has been notably different in recent history, from unexpectedly heavy precipitation and extreme cold temperatures to unseasonable temperatures and minimal precipitation. These drastic fluctuations are indicative of the impacts from climate change and are likely to create more dangerous and damaging winter storms. The limited ability to consistently predict accurate conditions for winter storms can leave people exposed and infrastructure unprotected.

CONVERSE COUNTY ANNEX

COUNTY PROFILE

Converse County is home to a semi-arid climate. It has long, hot summers and short, mild winters. The average summer temperatures range from the mid-80s Fahrenheit during the day to the low 50s overnight. Winter temperatures can drop to the high teens during the day and dip down into the single digits at night. Due to its inland location, there are no major weather patterns that influence the county's climate other than occasional snowstorms during winter months. The county also experiences high winds throughout the year.

TABLE 13 presents the 2020 population baseline and state projections for future years. Overall the county is forecast to grow 6.2% by the year 2040. **FIGURE 9** provides an overview map of the county.

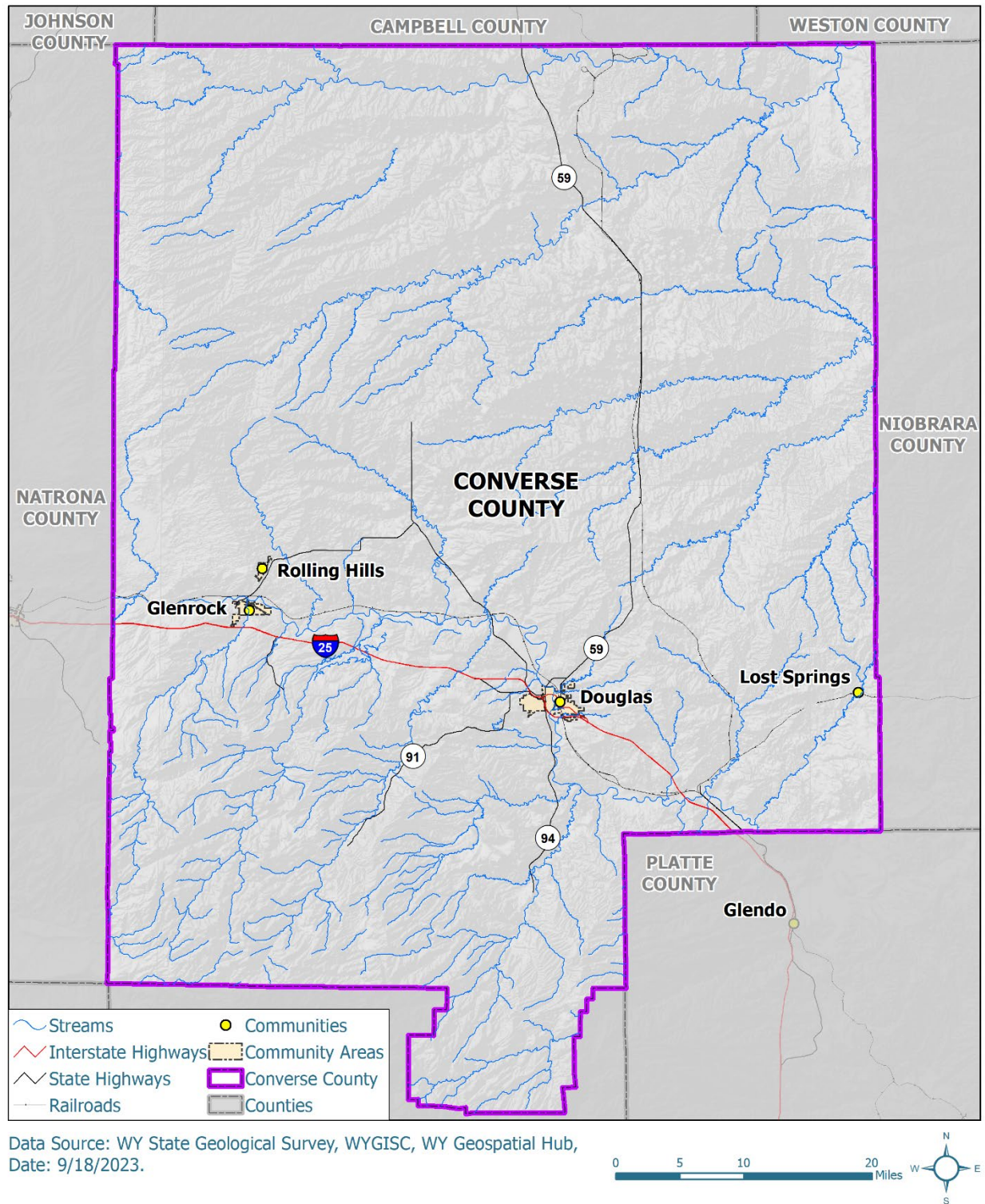
Table 13 Population Forecasts²

Jurisdiction	2020	2025	2030	2040
Converse County	13,790	14,010	14,220	14,650
City of Douglas	6,292	6,393	6,489	6,685
Town of Glenrock	2,588	2,630	2,669	2,750
Town of Rolling Hills	416	423	429	442

² Wyoming Department of Administration & Information: Economic Analysis Division

Figure 9. County Overview

Converse County - Location Map



UNDERSERVED COMMUNITIES AND SOCIALLY VULNERABLE POPULATIONS

Disadvantaged communities are often disproportionately impacted by hazards because they are in areas historically underserved and underinvested and reside in areas more prone to natural disasters. The degree to which a community exhibits certain social vulnerability conditions, including high poverty, low percentage of vehicle access, or crowded households, may also affect that community's ability to prepare for, respond to, and recover from disaster events.

Social vulnerability contributes to the impacts on those in the community who experience access and functional needs (AFN) during disasters. AFN are the factors which may limit a person, in an emergency, in their ability to communicate, maintain their health, act independently, access adequate transportation, and acquire necessary services and support. These needs encompass a variety of social and economic factors, which are critical to consider when developing inclusive community plans.

Throughout the planning process, it was important for the county to be cognizant of those communities and populations who may be disproportionately impacted by disaster events. The following pages present overviews of national indexes that assist with the identification of those underserved communities and socially vulnerable populations across Converse County.

To inform this plan, it was important that the HMPC understand the locations of the county's socially vulnerable and underserved communities. There are a number of relevant data sets and indexes available as of this plan's writing. To ensure all communities were taken into account, the HMP references three separate indexes to present the broadest view of potential vulnerability across the county's population. **Figure 10** presents the national [social vulnerability index](#) (SVI) from the Center for Disease Control's (CDC) Agency for Toxic Substances and Disease Registry (ATSDR). **Figure 11** maps disadvantaged communities, as defined by the United State Council on Environmental Quality's [Climate and Economic Justice Screening Tool](#) (CEJST). Lastly, **Figure 12** presents the results of [Headwater Economics'](#) analysis of rural capacity. Overall, the county is less vulnerable than other communities across our Nation. The only area of higher vulnerability is around the Glenrock area based on the SVI.

Figure 10 Social Vulnerability Index

Converse County - Social Vulnerability

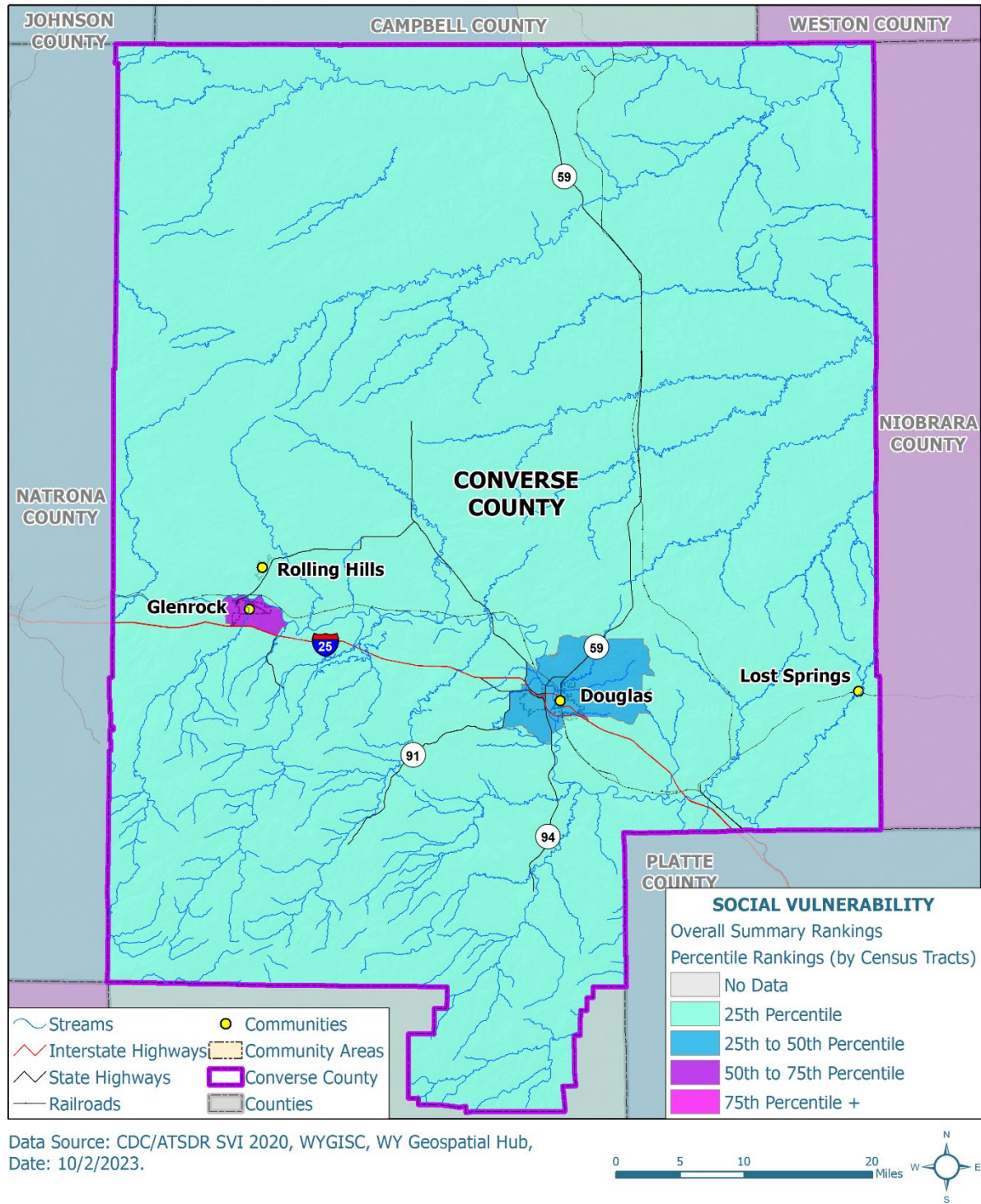


Figure 11 Disadvantaged Communities

Converse County - Disadvantaged Communities

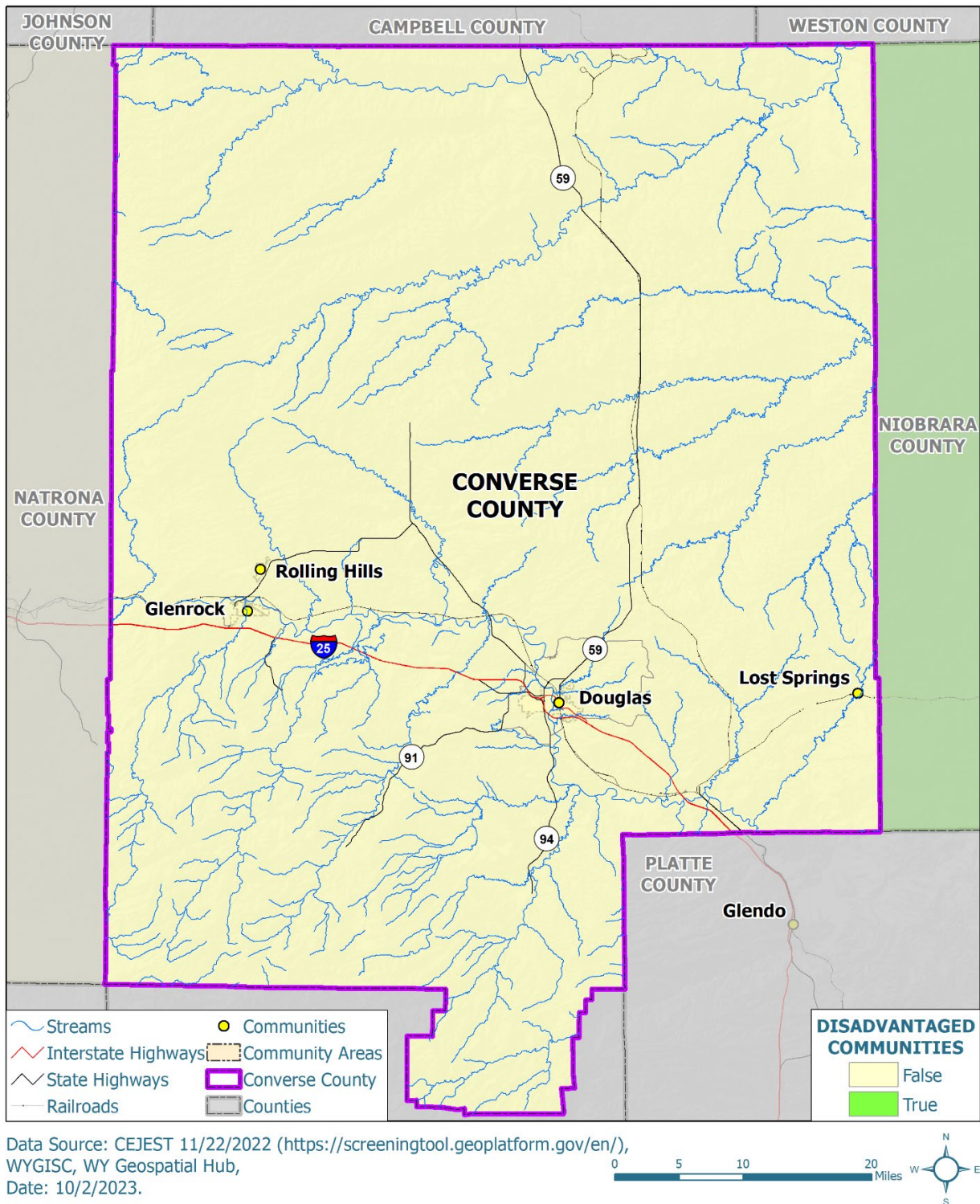
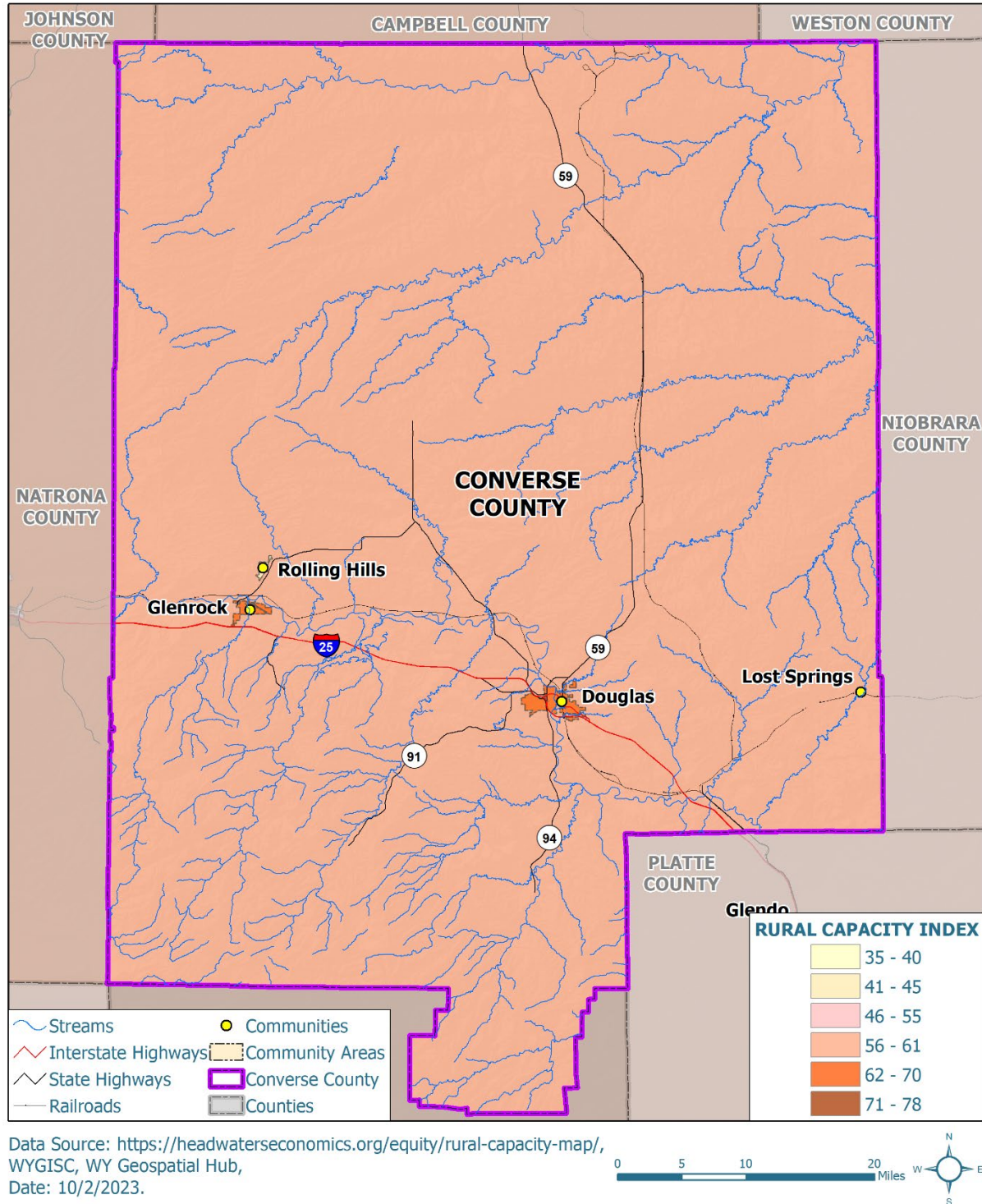


Figure 12 Rural Capacity Index

Converse County - Rural Capacity Index



MITIGATION STRATEGY

2019 MITIGATION ACTIONS

As part of the plan update process, local participating governments reviewed and reported on the status of all mitigation actions (i.e. – projects) identified in the 2019 HMP. **TABLE 14** provides a summary of progress made towards making Converse County more resilient to the impacts of hazards.

As important as acknowledging projects that were accomplished, actions in a community that are on-going are often overlooked as examples of positive implementation of the mitigation strategy. On-going projects are those without a timeline and that may not have deliverables that bring closure to a project but rather continued milestones. Examples include education and outreach efforts, maintenance activities, continual work on updating plans and organizational coordination, and constant work to improve processes and infrastructure.

Some 2019 actions did not see any progress made, but a portion of these projects retain community support and are being carried forward in this 2024 HMP (“No Progress – Continue Action”).

Outside of those actions identified in the previous HMP, local governments did report on other mitigation successes that were accomplished since 2019. A summary of these efforts included:

- The City of Douglas’s continued participation in FEMA’s CRS program.
- The City of Douglas’s adoption of building codes.
- The City of Douglas’s public alert and warning system.
- The Town of Glenrock is in the process of upgrading its 50-year-old water and sewer system, currently 70% complete as of May 2024.

Table 14 Past 2019 Mitigation Action Reporting

ID	Lead Jurisdiction	Hazard	Project	Priority	2024 Status	2024 Comments
1.8	Converse County	Tornado; Severe Thunderstorm	Develop an implementation plan and investigate funding availability and feasibility for saferooms in rural schools (White School, Moss Agate School, Dry Creek School, and Walker Creek School)	Medium	No Progress - Continue Action	Some rural schools have closed
2.1	Converse County	Drought	Develop a public information campaign to increase public awareness of drought risk in the County, focused on identified risks, county and community mitigation actions and actions citizens can take to understand and reduce their risk to drought.	High	On-Going	Social media
2.11	Converse County	Earthquake	Develop a public information campaign to increase public awareness of earthquake risk in the County, focused on identified risks, county and community mitigation actions and actions citizens can take to understand and reduce their risk to earthquake.	High	On-Going	Social media
2.12	Converse County	Expansive Soils	Develop a public information campaign to increase public awareness of expansive soils risk in the County, focused on identified risks, county and community mitigation actions and actions citizens can take to understand and reduce their risk to expansive soils.	High	On-Going	Social media

ID	Lead Jurisdiction	Hazard	Project	Priority	2024 Status	2024 Comments
2.13	Converse County	Flood	Develop a public information campaign to increase public awareness of flood risk in the County, focused on identified risks, county and community mitigation actions and actions citizens can take to understand and reduce their risk to flood.	High	On-Going	Social media
2.14	Converse County	High Wind and Downburst	Develop a public information campaign to increase public awareness of high wind and downburst risk in the County, focused on identified risks, county and community mitigation actions and actions citizens can take to understand and reduce their risk to high winds and/or downbursts.	High	On-Going	Social media
2.15	Converse County	Severe Thunderstorm	Develop a public information campaign to increase public awareness of risks associated with severe thunderstorms in the County (including hail and lightning), focused on identified risks, county and community mitigation actions and actions citizens can take to understand and reduce their risk to severe thunderstorms.	High	On-Going	Social media
2.16	Converse County	Tornado	Develop a public information campaign to increase public awareness of tornado risk in the County, focused on identified risks, county and community mitigation actions and actions citizens can take to understand and reduce their risk to tornado.	High	On-Going	Social media

ID	Lead Jurisdiction	Hazard	Project	Priority	2024 Status	2024 Comments
2.17	Converse County	Winter Weather	Develop a public information campaign to increase public awareness of winter weather risks in the County, focused on identified risks, county and community mitigation actions and actions citizens can take to understand and reduce their risk to winter weather.	High	On-Going	Social media
2.18	Converse County	Wildfire	Develop a public information campaign to increase public awareness of wildfire risk in the County, focused on identified risks, county and community mitigation actions and actions citizens can take to understand and reduce their risk to wildfire.	High	On-Going	Social media
2.2	Converse County	Winter Storm; high winds and downbursts	Enhance tree trimming program near utility lines and other vulnerable areas	Medium	On-Going	LaPrele Park hit by early winter storm / major trim effort
2.4	Converse County	Wildland Fire	Support hazard fuel reduction projects on all ownerships	High	On-Going	
2.5	Converse County	Wildland Fire	Incorporate Firewise access requirements into county subdivision review for WUI areas	Medium	On-Going	
2.6a	Douglas	Winter Weather	Continue programs across the County to subsidize water usage during winter months to prevent frozen pipes, and ensure these programs are publicized	High	On-Going	

ID	Lead Jurisdiction	Hazard	Project	Priority	2024 Status	2024 Comments
2.6b	Glenrock	Winter Weather	Continue programs across the County to subsidize water usage during winter months to prevent frozen pipes, and ensure these programs are publicized	High	On-Going	Glenrock puts the winter water usage on the monthly water bills. Social media.
2.6c	Rolling Hills	Winter Weather	Continue programs across the County to subsidize water usage during winter months to prevent frozen pipes, and ensure these programs are publicized	High	On-Going	
2.7	Converse County	Dam failure	Develop a public information campaign to increase public awareness of dam failure risk in the County, focused on identified risks, county and community mitigation actions and actions citizens can take to understand and reduce their risk to dam failure.	High	On-Going	Social media, meetings w/ LID
2.9	Converse County	Hazardous Materials	Develop a public information campaign to increase public awareness of hazardous materials risk in the County, focused on identified risks, county and community mitigation actions and actions citizens can take to understand and reduce their risks during a hazmat incident.	High	On-Going	Social media

ID	Lead Jurisdiction	Hazard	Project	Priority	2024 Status	2024 Comments
3.3	Converse County	Wildland Fire	Expand defensible space program begun by State Forestry Division to include more areas of the forested southern part of the County	High	On-Going	
3.5	Converse County	Earthquake	Participate in the Great Wyoming Shakeout Statewide Earthquake Drill; encourage schools to participate as well	Medium	On-Going	
4.1	Converse County	Winter Storm	Continue to work with WYDOT on location and timing of Interstate closures	High	On-Going	
4.1	Converse County	All	Implement the IPAWS system across the county	High	Complete	
4.11	Converse County	All	Develop a public information campaign to increase public awareness of basic community preparedness in the County, focused on identified risks, county and community mitigation actions and actions citizens can take to understand and reduce their risk to identified hazards.	High	On-Going	
4.13	Converse County	Wildland Fire	Assist addressing issues in Downey Park, Little Medicine, Boxelder Roads, driveways	High	On-going	
4.2	Converse County	Winter Storm	Publish snow plowing priorities for county roads. Sign road locations where people are	Medium	On-Going	

ID	Lead Jurisdiction	Hazard	Project	Priority	2024 Status	2024 Comments
			repeatedly stranded by snow			
4.6	Converse County	Wildland Fire	Implement communications interoperability for emergency responders via the use of cooperative infrastructure to meet all agencies' wireless communications needs	High	On-going	
4.7	Converse County	Tornado	Put on severe weather spotter training for the public	High	On-going	
4.8	Converse County	Wildland Fire	Improve access to rural water sources for fire trucks. Fit stock ponds, rural water tanks, etc. with valves compatible to fire apparatus	Medium	Complete	
4.9	Converse County	Wildland Fire	Drill strategically placed deep source water wells around rural areas for firefighting	Low	On-going	
1.7a	Converse County	Flash Flood	Remove debris from storm sewers, culverts and other impacted waterways to conserve the unimpeded flow of water	High	On-Going	
2.1a	Converse County	Flood	Continue to participate in National Flood Insurance Program (NFIP) with activities including continued designation of a floodplain manager, improving enforcement of and compliance with regulations and programs, participation in any new FIRM updates, using GIS to improve floodplain management, and promoting the benefits of flood insurance	High	On-Going	

ID	Lead Jurisdiction	Hazard	Project	Priority	2024 Status	2024 Comments
3.1a	Converse County	Flood	Work with existing floodplain residents to elevate or flood-proof their structures. Obtain funding assistance and technical guidance	Medium	No Progress - No Longer a Mitigation Priority	
3.2a	Converse County	Flood	Obtain funding to implement engineer's recommendation for drainage plans in West Plains subdivision	High	No Progress - No Longer a Mitigation Priority	
1.1	Douglas	Hazardous Materials	Implement and enforce city ordinances to restrict where trucks are hauling	Medium	Complete	Truck route developed
3.4	Douglas	Flood	Maintain compliance with and participate in the National Flood Insurance Program (NFIP) and the Community Rating System (CRS) through continued management and enforcement of floodplain regulations, as well as continual assessment of flood problems, managing new development to mitigate flood damage, implementing and updating the FMA plan, improving emergency preparedness and response, and public awareness	High	On-Going	Currently Class 8. CRS submitted July of each year.
4.3	Douglas	Hazardous Materials	Review and exercise Douglas evacuation plan	Medium	On-Going	

ID	Lead Jurisdiction	Hazard	Project	Priority	2024 Status	2024 Comments
1.2a	Douglas	Flood	Steer development away from floodplains in Douglas or require mitigation activities consistent with the community's long-term planning and flood regulations	High	On-Going	Required in Municipal Code. Adopted ICC Codes.
1.3a	Douglas	Tornado; high winds and downbursts	Enforce building codes (to include use of hurricane clips)	Medium	On-Going	Required per adopted ICC Building Code. Also allowing a specific type of structural screws (newly approved).
1.7b	Douglas	Flash Flood	Remove debris from storm sewers, culverts and other impacted waterways to conserve the unimpeded flow of water	High	On-Going	Drainage Report updated July 2023.
2.1b	Douglas	Flood	Continue to participate in National Flood Insurance Program (NFIP) with activities including continued designation of a floodplain manager, improving enforcement of and compliance with regulations and programs, participation in any new FIRM updates, using GIS to improve floodplain management, and promoting the benefits of flood insurance	High	On-Going	Currently Class 8. CRS submitted July of each year.
2.3a	Douglas	Drought	Review water restrictions and continue to implement water rationing measures in Douglas (regulatory) as necessary during drought	High	On-Going	In process of developing a new well.

ID	Lead Jurisdiction	Hazard	Project	Priority	2024 Status	2024 Comments
			situations			
2.8a	Douglas	High Wind and Downburst; Severe Thunderstorm	Continue 50/50 tree trimming program in Douglas to defray homeowner cost in preventive tree care	High	On-Going	Yearly planned trimming of trees in Parks and right of ways.
3.1b	Douglas	Flood	Work with existing floodplain residents to elevate or flood-proof their structures. Obtain funding assistance and technical guidance	Medium	On-Going	Continuing with Elevation Certificates, Floodplain Permits, and Flood-Proofing. ICC adopted.
3.2b	Douglas	Flood	Obtain funding to implement engineer's recommendation for drainage plans in West Plains subdivision	High	No Progress - No Longer a Mitigation Priority	Addressed with reconstruction of Brownfield Road (Urban Systems Funding).
4.12a	Douglas	Expansive Soils	Conduct soils testing for expansive soils in identified risk areas in Glenrock and Douglas	High	On-Going	Typically completed by developer.
1.4	Glenrock	Flood	Make stormwater system improvements identified in Glenrock per the Glenrock	Medium	In-Progress	Currently upgrading is in

ID	Lead Jurisdiction	Hazard	Project	Priority	2024 Status	2024 Comments
			Stormwater Management Plan and Master Plan			progress. 65% complete to date.
4.4	Glenrock	Hazardous Materials	Conduct hazmat tabletop exercises in Glenrock for a yellow cake spill at junction of Highways 26 and 95	Medium	No Progress - Continue Action	This needs to be coordinated thru the County EM.
4.5	Glenrock	All	Develop plan to deliver potable water to Glenrock if water pipelines are compromised	Medium	In-Progress	TOG is continuing to develop this plan.
1.2b	Glenrock	Flood	Steer development away from floodplains in Glenrock or require mitigation activities consistent with the community's long-term planning and flood regulations	High	On-Going	Limited lots available for new development in Flood zones.
1.3b	Glenrock	Tornado; high winds and downbursts	Enforce building codes (to include use of hurricane clips)	Medium	On-Going	TOG requires Hurricane clips in new construction.
1.7c	Glenrock	Flash Flood	Remove debris from storm sewers, culverts, and other impacted waterways to conserve the unimpeded flow of water	High	On-Going	Standard maintenance for the TOG.

ID	Lead Jurisdiction	Hazard	Project	Priority	2024 Status	2024 Comments
2.1c	Glenrock	Flood	Continue to participate in National Flood Insurance Program (NFIP) with activities including continued designation of a floodplain manager, improving enforcement of and compliance with regulations and programs, participation in any new FIRM updates, using GIS to improve floodplain management, and promoting the benefits of flood insurance	High	No Progress - No Longer a Mitigation Priority	Limited flooding and limited housing in the floodplain make this a low priority for the TOG.
2.3b	Glenrock	Drought	Review water restrictions and continue to implement water rationing measures in Glenrock (voluntary) as necessary during drought situations	High	On-Going	TOG has Municipal Code for Water Restrictions as needed.
2.8b	Glenrock	High Wind and Downburst; Severe Thunderstorm	Continue 50/50 tree trimming program in Glenrock to defray homeowner cost in preventive tree care	High	On-Going	TOG has a tree trimming program in place.
4.12b	Glenrock	Expansive Soils	Conduct soils testing for expansive soils in identified risk areas in Glenrock and Douglas	High	No Progress - No Longer a Mitigation Priority	TOG has limited expansive soils.
3.6	Lost Springs	Wildfire	Conduct annual cleanup and mowing of grasses and underbrush to reduce the potential impacts	Medium	No Progress - No	Community opted to not report on actions

ID	Lead Jurisdiction	Hazard	Project	Priority	2024 Status	2024 Comments
			of grass and/or wildland fire		Longer a Mitigation Priority	nor to seek FEMA approval.
1.7d	Lost Springs	Flash Flood	Remove debris from storm sewers, culverts and other impacted waterways to conserve the unimpeded flow of water	High	No Progress - No Longer a Mitigation Priority	Community opted to not report on actions nor to seek FEMA approval.
1.5	Rolling Hills	All	Obtain means of back-up power for Rolling Hills town hall	Medium	No Progress - Continue Action	It is the hope that a new town hall will be built. The new building will have a back-up generator.
1.6	Rolling Hills	All	Obtain emergency access easement to Dunham Road in Rolling Hills	Medium	No Progress - Continue Action	The Town has purchased land to the west that also may provide emergency access. An easement or MOU with property owners for both accesses still need to happen.

ID	Lead Jurisdiction	Hazard	Project	Priority	2024 Status	2024 Comments
1.7e	Rolling Hills	Flash Flood	Remove debris from storm sewers, culverts, and other impacted waterways to conserve the unimpeded flow of water	High	On-Going	Public Works routinely cleans culverts.

2024 MITIGATION ACTIONS

TABLE 15 and **TABLE 16** include the full details of all new mitigation actions included in this updated 2024 HMP. It should be noted that for potential funding source(s), reference to a “general fund” includes staff time.

Additionally, **TABLE 17** contains a listing of additional auxiliary mitigation actions and other relevant projects identified by the HMPC to be considered in future years.

Table 15 New 2024 Mitigation Actions

ID	Action Title	Local Government	Lead Organization	Partner Organization(s)	Primary Hazard Mitigated	Relevant Goal(s)	Action Details / Benefits
Conv - 1	Public Information - Dam Failure Risk	Converse County	Converse County Emergency Management	NWS, Local Municipalities, LaPrele District	Dam/Levee Incident	1,2,3,7	Focus education on identified risks, county and community mitigation actions, and actions citizens can take to understand and reduce their risk to dam/levee incident. Special attention will focus on the LaPrele Dam. Citizen awareness; personal hazard mitigation; specific focus on immediate affected landowners downstream. This will be an annual campaign (Spring) disseminated to all residents and businesses located in the highest risk areas.
Conv - 25	Private Dam Owner Engagement	Converse County	WY Water Development Office Director	Converse County Emergency Management, LaPrele Dam Owner	Dam/Levee Incident	1,2,4,5	Converse County and City of Douglas will support the state's and dam owner's efforts to develop a complete engineering study to replace and remove the current LaPrele dam which is unable

ID	Action Title	Local Government	Lead Organization	Partner Organization(s)	Primary Hazard Mitigated	Relevant Goal(s)	Action Details / Benefits
							to be rehabilitated. Efforts include preliminary and final engineering and design.
D - 1	Public Information - Dam Failure Risk	Douglas	City Emergency Management	County	Dam/Levee Incident	7	In coordination with the County, distribute information on the risks posed by dams and related mitigation actions annually in the Spring to all residents. Tools to utilize include local media.
D - 13	Private Dam Owner Engagement	Douglas	WY Water Development Office Director	City Emergency Management, LaPrele Dam Owner	Dam/Levee Incident	1,2,4,5	Converse County and City of Douglas will support the state's and dam owner's efforts to develop a complete engineering study to replace and remove the current LaPrele dam which is unable to be rehabilitated. Efforts include preliminary and final engineering and design.
N/A		Glenrock			Dam/Levee Incident		Per the risk assessment, this hazard does not present a known risk.

ID	Action Title	Local Government	Lead Organization	Partner Organization(s)	Primary Hazard Mitigated	Relevant Goal(s)	Action Details / Benefits
N/A		Rolling Hills			Dam/Levee Incident		Per the risk assessment, this hazard does not present a known risk.
Conv - 3	Public Information - Drought Risk	Converse County	Converse County Emergency Management	NWS, Local Municipalities	Drought	1,2,3,7	Focus education on identified risks, county and community mitigation actions, and actions citizens can take to understand and reduce their risk to drought. Citizen awareness; personal hazard mitigation; specific focus on drought tolerant plantings (crops / residential), benefits of water conservation. This annual campaign (Summer) will be disseminated to all residents.
D - 2	Public Information - Drought Risk	Douglas	City Emergency Management	County	Drought	7	In coordination with the County, distribute information on water conservation methods and related mitigation actions annually in the Spring to all residents. Tools to utilize include local

ID	Action Title	Local Government	Lead Organization	Partner Organization(s)	Primary Hazard Mitigated	Relevant Goal(s)	Action Details / Benefits
							media.
GR - 2	Water Restrictions	Glenrock	Randy Rumpler- Dir of Public Works		Drought	1,2,3,7	Review water availability and regulate water restrictions as needed in drought conditions.
RH - 2	Public Information - Drought Risk	Rolling Hills	Town Clerk	County	Drought	7	In coordination with the County, distribute information on water conservation methods and related mitigation actions annually in the Spring to all residents. Tools to utilize include local media.
Conv - 5	Public Information - Earthquake risks	Converse County	Converse County Emergency Management	WGS, Local municipalities	Earthquake	1,2,3,7	Focus education on identified risks, county and community mitigation actions, and actions citizens can take to understand and reduce their risk to earthquakes by improving citizen awareness and through personal hazard mitigation. This annual campaign (Fall) will be disseminated to all residents

ID	Action Title	Local Government	Lead Organization	Partner Organization(s)	Primary Hazard Mitigated	Relevant Goal(s)	Action Details / Benefits
							through local media.
D - 3	Public Information - Earthquake risks	Douglas	City Emergency Management	County	Earthquake	7	In coordination with the County, distribute information on earthquake mitigation methods and related mitigation actions annually in the Fall to all residents. Tools to utilize include the newspaper and social media.
GR - 3	Earthquake Awareness	Glenrock	Lyle Hunt-Building Inspector		Earthquake	1,7	Participate in the Great Wyoming Shakeout Statewide Earthquake Drill; encourage schools to participate as well
RH - 3	Public Information - Earthquake risks	Rolling Hills	Town Clerk	County	Earthquake	7	In coordination with the County, distribute information on earthquake mitigation methods and related mitigation actions annually in the Fall to all residents. Tools to utilize include the newspaper and social media.
Conv -	Public information -	Converse	Converse County Emergency	WGS, Local	Expansive	1,2,3,7	Focus education on identified risks, county and community

ID	Action Title	Local Government	Lead Organization	Partner Organization(s)	Primary Hazard Mitigated	Relevant Goal(s)	Action Details / Benefits
6	Expansive soils	County	Management	municipalities	Soils		mitigation actions, and actions citizens can take to understand and reduce their risk to expansive soils by improving citizen awareness and through personal hazard mitigation. This annual campaign (Fall) will be disseminated to all residents via local media.
D - 4	Public information - Expansive soils	Douglas	City Emergency Management	County	Expansive Soils	7	In coordination with the County, distribute information on expansive soil mitigation methods and related mitigation actions annually in the Fall to all residents. Tools to utilize include the newspaper and social media.
N/A		Glenrock			Expansive Soils		Per the risk assessment, this hazard does not present a known risk.
N/A		Rolling Hills			Expansive Soils		Per the risk assessment, this hazard does not present a

ID	Action Title	Local Government	Lead Organization	Partner Organization(s)	Primary Hazard Mitigated	Relevant Goal(s)	Action Details / Benefits
							known risk.
Conv - 8	Public Information - Flood risk	Converse County	Converse County Emergency Management	NWS, Local Municipalities, LaPrele District	Flood	1,2,3,7	Focus education on identified risks, county and community mitigation actions, and actions citizens can take to understand and reduce their risk to flood by improving citizen awareness and personal hazard mitigation. This annual campaign (Spring) will be disseminated to all residents via local media.
D - 5	Creation of a System Development / Impact Development Fee	Douglas	City Emergency Management	County	Flood	4,6	Creation of this program could assist in funding future mitigation efforts.
GR - 5	Public Information - Flood risk	Glenrock	Lyle Hunt-Building Inspector	County	Flood	7	Perform an annual flood education campaign to be shared with all residents in known floodplains in the Spring, to educate individuals on the flood risk and benefits

ID	Action Title	Local Government	Lead Organization	Partner Organization(s)	Primary Hazard Mitigated	Relevant Goal(s)	Action Details / Benefits
							of flood insurance. Tools to utilize include the newspaper, and social media.
RH - 5	Public Information - Flood risk	Rolling Hills	Town Clerk	County	Flood	7	Perform an annual flood education campaign to be shared with all residents in known floodplains in the Spring, to educate individuals on the flood risk and benefits of flood insurance. Tools to utilize include the newspaper, and social media.
Conv - 11	Public Information - Landslide / Debris Flow / Rockfall	Converse County	Converse County Emergency Management	WGS, Local municipalities	Landslide	1,2,3,7	Focus education on identified risks, county and community mitigation actions, and actions citizens can take to understand and reduce their risk to landslide / debris flow / rockfall by improving citizen awareness and personal hazard mitigation. This annual campaign (Fall) will be disseminated to all residents via local media.

ID	Action Title	Local Government	Lead Organization	Partner Organization(s)	Primary Hazard Mitigated	Relevant Goal(s)	Action Details / Benefits
D - 6	Public Information - Landslide / Debris Flow / Rockfall	Douglas	City Emergency Management	County	Landslide	7	Perform an annual landslide education campaign to be shared with all residents in the Fall, to educate individuals on actions citizens can take to understand and reduce their risk to landslide / debris flow / rockfall by improving citizen awareness and personal hazard mitigation. Tools to utilize include the newspaper and social media.
N/A		Glenrock			Landslide		Per the risk assessment, this hazard does not present a known risk.
N/A		Rolling Hills			Landslide		Per the risk assessment, this hazard does not present a known risk.
Conv - 12	Public Information - Mine and Land Subsidence	Converse County	Converse County Emergency Management	WGS, Local municipalities	Mine and Land Subsidence	1,2,3,7	Focus education on identified risks, county and community mitigation actions, and actions citizens can take to understand and reduce their risk to mine and land

ID	Action Title	Local Government	Lead Organization	Partner Organization(s)	Primary Hazard Mitigated	Relevant Goal(s)	Action Details / Benefits
							subsidence risk by improving citizen awareness and personal hazard mitigation. This annual campaign (Fall) will be disseminated to all residents via local media.
D - 7	Create Open Space / Conservation Fund	Douglas	City Emergency Management	County	Mine and Land Subsidence	1,7	Part of the Mitigation Planning activity to ensure areas at risk can be protected from future development.
GR - 7	Mine & Land Subsidence Mitigation Project	Glenrock	Randy Rumpler-Dir of Public Works	County	Mine and Land Subsidence	1,2,6,7	Continue on-going mitigation project filling in mines running under the town, to reduce risk of future subsidence.
N/A		Rolling Hills			Mine and Land Subsidence		Per the risk assessment, this hazard does not present a known risk.
Conv - 15	Public Information - Tornado, Hail, Lightning,	Converse County	Converse County Emergency Management	NWS, Local Municipalities	Severe Weather	1,2,3,7	Focus education on identified risks, county and community mitigation actions, and actions citizens can take to understand and reduce their risk to tornado, hail, lightning,

ID	Action Title	Local Government	Lead Organization	Partner Organization(s)	Primary Hazard Mitigated	Relevant Goal(s)	Action Details / Benefits
	Wind						& winds by improving citizen awareness and personal hazard mitigation. This annual campaign (Spring) will be disseminated to all residents.
D - 8	Research and implement Stormwater Utility Fees	Douglas	City Emergency Management	County	Severe Weather	1,4,6	Assist in funding redevelopment after an event
GR - 8	Public Information - Tornado, Hail, Lightning, Wind	Glenrock	Lyle Hunt-Building Inspector	County	Severe Weather	7	Perform an annual severe weather education campaign to be shared with all residents in the Spring, to educate individuals on actions citizens can take to understand and reduce their risk to severe weather by improving citizen awareness and personal hazard mitigation. Tools to utilize include the newspaper and social media.
RH - 8	Public Information - Tornado,	Rolling Hills	Town Clerk	County	Severe Weather	7	Perform an annual severe weather education campaign to be shared with all residents

ID	Action Title	Local Government	Lead Organization	Partner Organization(s)	Primary Hazard Mitigated	Relevant Goal(s)	Action Details / Benefits
	Hail, Lightning, Wind						in the Spring, to educate individuals on actions citizens can take to understand and reduce their risk to severe weather by improving citizen awareness and personal hazard mitigation. Tools to utilize include the newspaper and social media.
Conv - 16	Firewise	Converse County	Converse County Emergency Management	Firewise, Local FD	Wildfire	1,2,3,4,7	Incorporate Firewise access requirements into county subdivision review for WUI areas. Reduced vulnerability to wildland fire due to reduction in available fuels and other fire mitigation measures.
D - 9	Community Wildfire Protection Plan (CWPP)	Douglas	City Emergency Management	Douglas Fire Department	Wildfire	1,4,5,7	Will assist in guiding wildfire mitigation efforts across multiple landowners.
GR - 9	Public Information - Wildfire	Glenrock	Lyle Hunt-Building Inspector	Glenrock Fire Dept, County	Wildfire	7	Distribute information on wildfire mitigation methods and related mitigation actions annually in the Spring to all

ID	Action Title	Local Government	Lead Organization	Partner Organization(s)	Primary Hazard Mitigated	Relevant Goal(s)	Action Details / Benefits
							residents. Tools to utilize include the newspaper and social media.
RH - 9	Public Information - Wildfire	Rolling Hills	Town Clerk		Wildfire	7	Distribute information on wildfire mitigation methods and related mitigation actions annually in the Spring to all residents. Tools to utilize include the newspaper and social media.
Conv - 24	Snow Fence Program	Converse County	CC Road & Bridge	WOHS	Winter Storm	1,2,4,6	Install snow fences along county roads that see increased road closures due to intensified winter weather stopping commerce. County Roads: #23 55 Ranch Road, #31 Ross Road, #32 Highland Loop Road, & #34 Jenne Trail.
D - 10	Hazard materials spillage prevention	Douglas	City Emergency Management		Winter Storm	1,2,4	Mitigation of hazard materials spillage through evaluation of priority locations and construction of barriers to prevent impacts to water sources that may be caused by

ID	Action Title	Local Government	Lead Organization	Partner Organization(s)	Primary Hazard Mitigated	Relevant Goal(s)	Action Details / Benefits
							winter weather.
GR - 10	Public Information – Winter Weather	Glenrock	Lyle Hunt-Building Inspector		Winter Storm	7	Develop a public information campaign to increase public awareness of winter weather risk, focused on identified risks, county and community mitigation actions and actions citizens can take to understand and reduce their risk to winter weather. Information will be shared annually in October via local media.
RH - 10	Public Information – Winter Weather	Rolling Hills	Town Clerk		Winter Storm	7	Develop a public information campaign to increase public awareness of winter weather risk, focused on identified risks, county and community mitigation actions and actions citizens can take to understand and reduce their risk to winter weather. Information will be shared annually in October via local

ID	Action Title	Local Government	Lead Organization	Partner Organization(s)	Primary Hazard Mitigated	Relevant Goal(s)	Action Details / Benefits
							media.

Table 16 New 2024 Mitigation Actions – Additional Details

ID	Priority	Estimated Timeframe for Completion	Potential Funding Source(s)	Reduces Risk to Existing Structures / Infrastructure?	Limits Risk to New Development / Redevelopment?	Benefits Underserved Communities / Socially Vulnerable Populations?	Mitigation Action Type
Conv - 1	High	2025	County General Fund	Yes	Yes	Yes	Education & Awareness Programs
Conv - 25	High	2027	WY Water Development Office, County General Fund, FEMA HHPD	Yes	Yes	Yes	Structure & Infrastructure Projects
D - 1	Low	2028	City General Fund	No	Yes	Yes	Education & Awareness Programs

ID	Priority	Estimated Timeframe for Completion	Potential Funding Source(s)	Reduces Risk to Existing Structures / Infrastructure?	Limits Risk to New Development / Redevelopment?	Benefits Underserved Communities / Socially Vulnerable Populations?	Mitigation Action Type
D-13	High	2027	WY Water Development Office, City General Fund, FEMA HHPD	Yes	Yes	Yes	Structure & Infrastructure Projects
N/A							
N/A							
Conv - 3	High	2028	County General Fund	No	Yes	Yes	Education & Awareness Programs
D - 2	Medium	2028	City General Fund	No	Yes	Yes	Education & Awareness Programs
GR - 2	Medium	2025	Town General Fund	No	Yes	Yes	Local Plans & Regulations
RH - 2	Medium	2028	Town General Fund	No	Yes	Yes	Education & Awareness Programs

ID	Priority	Estimated Timeframe for Completion	Potential Funding Source(s)	Reduces Risk to Existing Structures / Infrastructure?	Limits Risk to New Development / Redevelopment?	Benefits Underserved Communities / Socially Vulnerable Populations?	Mitigation Action Type
Conv - 5	High	2027	County General Fund	Yes	Yes	Yes	Education & Awareness Programs
D - 3	High	2025	City General Fund	Yes	Yes	Yes	Local Plans & Regulations
GR - 3	Low	2026	Town General Fund	No	No	Yes	Education & Awareness Programs
RH - 3	Low	2028	Town General Fund	Yes	Yes	Yes	Education & Awareness Programs
Conv - 6	Low	2028	County General Fund	Yes	Yes	Yes	Education & Awareness Programs
D - 4	Low	2028	City General Fund	Yes	Yes	Yes	Education & Awareness Programs
N/A							
N/A							

ID	Priority	Estimated Timeframe for Completion	Potential Funding Source(s)	Reduces Risk to Existing Structures / Infrastructure?	Limits Risk to New Development / Redevelopment?	Benefits Underserved Communities / Socially Vulnerable Populations?	Mitigation Action Type
Conv - 8	High	2028	County General Fund	Yes	Yes	Yes	Education & Awareness Programs
D - 5	Medium	2026	City General Fund	Yes	Yes	Yes	Education & Awareness Programs
GR - 5	Low	2028	Town General Fund	Yes	Yes	Yes	Education & Awareness Programs
RH - 5	Low	2028	Town General Fund	Yes	Yes	Yes	Education & Awareness Programs
Conv - 11	Low	2028	County General Fund	Yes	Yes	Yes	Education & Awareness Programs
D - 6	Low	2028	City General Fund	Yes	Yes	Yes	Education & Awareness Programs
N/A							
N/A							

ID	Priority	Estimated Timeframe for Completion	Potential Funding Source(s)	Reduces Risk to Existing Structures / Infrastructure?	Limits Risk to New Development / Redevelopment?	Benefits Underserved Communities / Socially Vulnerable Populations?	Mitigation Action Type
Conv - 12	Low	2028	County General Fund	Yes	Yes	Yes	Education & Awareness Programs
D - 7	Medium	2025	City General Fund	Yes	Yes	Yes	Local Plans & Regulations
GR - 7	High	2026	Town General Fund	Yes	Yes	Yes	Structure & Infrastructure Projects
N/A							
Conv - 15	High	2028	County General Fund	Yes	Yes	Yes	Education & Awareness Programs
D - 8	Low	2028	City General Fund	Yes	Yes	Yes	Local Plans & Regulations
GR - 8	Medium	2027	Town General Fund	Yes	Yes	Yes	Education & Awareness Programs
RH - 8	Medium	2028	Town General Fund	Yes	Yes	Yes	Education & Awareness Programs

ID	Priority	Estimated Timeframe for Completion	Potential Funding Source(s)	Reduces Risk to Existing Structures / Infrastructure?	Limits Risk to New Development / Redevelopment?	Benefits Underserved Communities / Socially Vulnerable Populations?	Mitigation Action Type
Conv - 16	Medium	2028	State Forestry, FEMA BRIC & HMGP, County General Fund	Yes	Yes	Yes	Local Plans & Regulations
D - 9	Low	2028	City General Fund	Yes	Yes	Yes	Local Plans & Regulations
GR - 9	High	2025	Town General Fund	Yes	Yes	Yes	Education & Awareness Programs
RH - 9	Medium	2028	Town General Fund	Yes	Yes	Yes	Education & Awareness Programs
Conv - 24	High	2025	WYDOT, FEMA BRIC & HMGP	Yes	Yes	Yes	Structure & Infrastructure Projects
D - 10	High	2025	City General Fund	Yes	Yes	Yes	Structure & Infrastructure Projects

ID	Priority	Estimated Timeframe for Completion	Potential Funding Source(s)	Reduces Risk to Existing Structures / Infrastructure?	Limits Risk to New Development / Redevelopment?	Benefits Underserved Communities / Socially Vulnerable Populations?	Mitigation Action Type
GR - 10	Medium	2026	Town General Fund	Yes	Yes	Yes	Education & Awareness Programs
RH - 10	Medium	2026	Town General Fund	Yes	Yes	Yes	Education & Awareness Programs

Table 17 Auxiliary Mitigation Actions and Other Relevant Projects

ID	Action Title	Local Government	Lead Organization	Partner Organization(s)	Primary Hazard Mitigated	Relevant Goal(s)	Action Details / Benefits
Conv - 2	Northeastern WY Radar	Converse County	Converse County Emergency Management	NWS, Local Municipalities, LaPrele District, Natrona, Niobrara, Platte, Campbell, Johnson, Weston	Multiple	1,2,3,4,5,6,7	Conduct feasibility study to assess placement of NWS radar in NE WY for improved predictions of dam/levee incident due to current radar overshooting lower weather systems.
Conv - 4	The Great Wyoming	Converse County	Converse County	School Districts	Earthquake	1,2,7	Participate in the Great Wyoming Shakeout

ID	Action Title	Local Government	Lead Organization	Partner Organization(s)	Primary Hazard Mitigated	Relevant Goal(s)	Action Details / Benefits
	Shakeout Statewide Earthquake Drill		Emergency Management				Statewide Earthquake Drill; encourage schools to participate as well to reducing impacts of potential earthquake incidents.
Conv - 9	Storm Cleanup	Converse County	Converse County Road & Bridge	WYDOT	Flood	1,3,4,6	Remove debris from storm sewers, culverts, and other impacted waterways to conserve the unimpeded flow of water to help with Floodplain mitigation and reduced flood vulnerability.
Conv - 14	Weather Spotter Training	Converse County	Converse County Emergency Management	NWS	Severe Weather	1,2,3,7	Offer severe weather spotter training for the public in person or on line to increase citizen awareness, personal hazard mitigation and increased warning time.
Conv - 17	Fuel Reduction	Converse County	Converse County Emergency	Firewise, Local FD	Wildfire	1,2,3,4,5,6,7	Reduced vulnerability to wildland fire due to

ID	Action Title	Local Government	Lead Organization	Partner Organization(s)	Primary Hazard Mitigated	Relevant Goal(s)	Action Details / Benefits
	Projects		Management				reduction in available fuels.
Conv - 18	Public Information - Wildfire Risk	Converse County	Converse County Emergency Management	Douglas, Glenrock, Rolling Hills	Wildfire	1,3,7	Focused on identified risks, county and community mitigation actions and actions citizens can take to understand and reduce their risk to wildfire. Citizen awareness; personal hazard mitigation; educate rural residents about the use of defensible space to protect property from wildland fire, and fire-resistant construction materials.
Conv - 19	Defensible Space Program	Converse County	State Forestry	State Forestry	Wildfire	1,2,3,5,7	Program begun by State Forestry Division to include more areas of the forested southern part of the County.
Conv - 22	Interstate Closure Planning	Converse County	Converse County Emergency	WYDOT	Winter Storm	1,2,5,7	Work with WYDOT on location and timing of interstate closures to reduce impacts of winter

ID	Action Title	Local Government	Lead Organization	Partner Organization(s)	Primary Hazard Mitigated	Relevant Goal(s)	Action Details / Benefits
			Management				storms.
Conv - 21	Public Information - Winter Weather	Converse County	Converse County Emergency Management	Douglas, Glenrock Rolling Hills	Winter Storm	1,3,7	Develop a PIC focused on identified risks, county and community mitigation actions and actions citizens can take to understand and reduce their risk to winter weather.
LaPr - 1	LaPrele Dam EAP Review & Tabletop	La Prele	LaPrele Irrigation District	NWS, Local Municipalities, LaPrele District	Dam/Levee Incident	1,2,3,4,5,6,7,	Conduct DAM EAP and Tabletop exercises throughout (before, during, and after) new construction of dam to better inform and address concerns of project.
GR - 11	Hazmat Training Exercise	Town of Glenrock	Lyle Hunt-Building Inspector	County, Highway Patrol, Sheriff's office	Multiple	1,2,3,5	Hazmat tabletop exercise in Glenrock -yellow cake spill at junction of HW 26 & 95
GR - 12	Extended Grid Down	Town of Glenrock	Lyle Hunt-Building Inspector	County	Multiple	1,2,3,4,5,6,7	Develop a plan for an extended Grid Down situation. Hardened Gen Sets to run water systems,

ID	Action Title	Local Government	Lead Organization	Partner Organization(s)	Primary Hazard Mitigated	Relevant Goal(s)	Action Details / Benefits
							sewer system, Town Hall and emergency shelter at the Rec Center.
GR - 13	Flood Mitigation	Glenrock	Lyle Hunt-Building Inspector	County	Flood	1,2,3,4,5,7	Continue to participate in National Flood Insurance Program (NFIP) with activities including continued designation of a floodplain manager, improving enforcement of and compliance with regulations and programs, participation in any new FIRM updates, using GIS to improve floodplain management, and promoting the benefits of flood insurance
D - 11	Implement Firewise	Douglas	Emergency Management	Douglas Fire Department , Rural Fire, County	Wildfire	1, 2, 3, 4, 5, 6, 7	Public education
D -	Updated	Douglas	Emergency	CWCB, FEMA	Flood	3,7	Seeking funding to update

ID	Action Title	Local Government	Lead Organization	Partner Organization(s)	Primary Hazard Mitigated	Relevant Goal(s)	Action Details / Benefits
12	FEMA DFIRM		Management				the city's floodplains
GR - 14	Hardened micro grids	Douglas	Building Inspector		Multi	2,3,4,6	For critical infrastructure (focus on water & sewer)

MITIGATION CAPABILITIES

Planning and regulatory capabilities are powerful tools for implementing hazard mitigation. The county and local governments currently utilize or have implemented a number of these capabilities shown in **TABLE 18**. The county also supports local governments with some of these available capabilities.

Local governments are encouraged to utilize this assessment to identify those capabilities that they want to expand and improve upon, to enhance implementation efforts towards the county's mitigation strategy. The ability to do so is dictated by each local government's elected leadership, management, and available funding and staffing. It is also noted that grant funding opportunities are available to improve these capabilities. It should be noted that some of the new mitigation actions are also focused on enhancing these mitigation capabilities.

Table 18 Planning & Regulatory Capabilities

Mitigation Capability	Converse County	City of Douglas	Town of Glenrock	Town of Rolling Hills
Comprehensive, Master, or General Plan	No	Yes	Yes	No
Capital Improvement Program or Plan (CIP)	No	Yes	Yes	No
Floodplain Management Plan	No	Yes	No	No
Stormwater Program / Plan	No	Yes	Yes	Yes
Community Wildfire Protection Plan (CWPP)	No	No	No	No
Erosion / Sediment Control Program	No	Yes	No	No
Economic Development Plan	No	Yes	Yes	No
Other Plans:	Natural Resource Mgmt. Plan	N/A	N/A	Water System Master Plan

Mitigation Capability	Converse County	City of Douglas	Town of Glenrock	Town of Rolling Hills
Building Codes (Year)	No	2021 IBC	2021 IBC	No
Building Code Effectiveness Grading Schedule (BCEGS) Rating	Unknown	4 (residential) / 3 (commercial)	Unknown	Unknown
Site Plan Review Requirements	Yes	Yes	Yes	No
Other Codes, Permitting, or Inspections:	N/A	N/A	N/A	Building permit required for 100 sq. ft. + roofed structures
Zoning Ordinance (Land Use)	Yes	Yes	Yes	Yes
Subdivision Ordinance	Yes	Yes	Yes	No
National Flood Insurance Program (NFIP) Participant	Yes	Yes	Yes	No
Flood Insurance Study / Flood Insurance Rate Map / DFIRM	Yes	Yes	Yes	Yes
Floodplain Ordinance	Yes	Yes	Yes	No
Elevation Certificates for Floodplain Development	No	Yes	No	No
Community Rating System (CRS) Participant	No	Yes	No	No
Open Space / Conservation Program	No	Yes	No	No

Mitigation Capability	Converse County	City of Douglas	Town of Glenrock	Town of Rolling Hills
Growth Management Ordinance	No	Yes	Yes	No
Stormwater Ordinance	No	Yes	Yes	No
Other Hazard Ordinance (steep slope, wildfire, snow loads, etc.)	No	No	No	No
Other Land Use Planning and Ordinances:	N/A	Unified Land Development Code, 2023 National Electrical Code	N/A	N/A

Administrative and technical capabilities include staff, working groups, and technology which are vital for a community to be able to implement hazard mitigation. The county and local governments currently utilize or have implemented a number of these capabilities shown in **TABLE 19**.

Table 19 Administrative & Technical Capabilities

Mitigation Capability	Converse County	City of Douglas	Town of Glenrock	Town of Rolling Hills
Planning Commission	Yes	Yes	Yes	No
Mitigation Planning Committee	No	No	No	No
Maintenance Programs (tree trimming, clearing drainage, etc.)	No	Yes	Yes	Yes
Emergency Manager	Yes	County	County	County
Building Official	No	Yes	Yes	No
Floodplain Administrator	Yes	Yes	Yes	No

Mitigation Capability	Converse County	City of Douglas	Town of Glenrock	Town of Rolling Hills
Community Planner	No	Yes	Yes	Yes
Transportation Planner	No	Yes	No	No
Civil Engineer	No	Yes	Yes	Yes
GIS Capability	No	Yes	Yes	No
Resiliency Planner	No	No	No	No
Other Related Staff:	N/A	N/A	N/A	N/A
Warning Systems / Services (flood)	Yes	Yes	Yes	County
Warning Systems / Services (other / multi-hazard)	Code Red	Joint Dispatch	Yes	County
Grant Writing / Management	No	Yes	No	Yes
Other Technical:	Natural Bridge Park Maintenance	N/A	N/A	N/A

The ability of a community to implement a comprehensive mitigation strategy is largely dependent on available funding. The county and local governments currently utilize or have implemented some of these capabilities shown in **TABLE 20**.

Table 20 Financial Capabilities

Mitigation Capability	Converse County	City of Douglas	Town of Glenrock	Town of Rolling Hills
Levy for Specific Purposes with Voter Approval	Yes	Yes	Yes	No

Mitigation Capability	Converse County	City of Douglas	Town of Glenrock	Town of Rolling Hills
Utilities Fees	No	Yes	Yes	Yes
System Development / Impact Development Fee	No	Yes	Yes	No
General Obligation Bonds to Incur Debt	Yes	Yes	Yes	No
Special Tax Bonds to Incur Debt	No	Yes	Yes	No
Withheld Spending in Hazard-Prone Areas	No	Yes	No	No
Open Space / Conservation Fund	No	Yes	No	No
Stormwater Utility Fees	No	Yes	No	No
Capital Improvement Project Funding	Yes	Yes	Yes	No
Community Development Block Grants (CDBG)	No	Yes	Yes	No
Other Funding:	N/A	N/A	N/A	N/A

Education and outreach are important capabilities that allow a community to continue the conversation with their public regarding hazard risk and opportunities to mitigate. The county and local governments currently utilize or have implemented some of these capabilities shown in **TABLE 21**.

Table 21 Education & Outreach Capabilities

Mitigation Capability	Converse County	City of Douglas	Town of Glenrock	Town of Rolling Hills
Public Hazard Education / Outreach Program	Yes	Yes	Yes	No
Local Citizen Groups that Communicate Hazard Risks	Powder River Basin Resource Council	No	Yes	No
Firewise	Yes	No	Yes	No
StormReady	No	No	Yes	No
Other Programs or Organizations:	N/A	N/A	N/A	N/A

TABLE 22 lists those specific capabilities that each local government will work towards expanding over the next five years.

Table 22 Primary Capabilities to Expand

Local Government	Capability
Converse County	The county plan to hire a GIS Coordinator
City of Douglas	The city plans to update its comprehensive plan, downtown master plan, and water master plan.
Town of Glenrock	The town plans to hire a consultant to serve as its floodplain manager and to develop a comprehensive floodplain management program.
Town of Rolling Hills	The town plans to improve its Capital Improvement Plan and update the Stormwater Protection Plan and Water System Master Plan.

COMPLIANCE WITH FLOODPLAIN REQUIREMENTS

Converse County, Douglas, and Glenrock have been mapped and participate in the NFIP, and have adopted NFIP minimum floodplain management criteria.

TABLE 23 includes the details for the NFIP participants in the county, as well as the current policy coverage and claims paid. It should be noted that Rolling Hills and Lost Springs are currently not participating. There are no repetitive or severe repetitive loss properties within the county.

The City of Douglas also participates in the NFIP Community Rating System (CRS) and is currently a Class 8 community, which provides residents and businesses with a 15% discount on flood insurance premium rates.

Table 23 NFIP Summary

Juris-diction	Date of Entry	Initial FIRM ID	Current FIRM	Policies in Force	Coverage	Claims Paid	Value Claims Paid
Converse County	4/5/1988	4/5/1988	11/4/2009	12	\$3,432,000	1	\$2,033
Douglas	10/17/1978	10/17/1978	11/4/2009	6	\$2,329,000	2	\$0
Glenrock	11/15/1985	11/15/1985	11/4/2009	2	\$206,000	5	\$7,351

Maintaining compliance under the NFIP is an important component of flood risk reduction. All participating communities will continue to comply with all NFIP requirements which is monitored by FEMA regional staff, including enforcing all locally adopted floodplain management regulations concerning existing structure improvements and new construction. The county and participating communities are currently in good standing with the provisions of the NFIP.

Adopting floodplain management rules is only effective if the rules are followed and enforced. Implementation and enforcement of local floodplain regulations (i.e. – “compliance”) is achieved through the following:

- Continuing to participate in FIRM updates and adopt floodplain maps when created / updated
- Implementing, maintaining, and updating floodplain ordinances
- Continued designation of a local floodplain manager whose responsibilities include reviewing floodplain development permits to ensure compliance with local floodplain management ordinances and rules
- Suggest improvements to the enforcement of, and compliance with, regulations and programs

- Promote and educate the public on the benefits of flood insurance

After a flood event, or any event that may cause loss of a structure such as a fire or tornado, it is the role of the floodplain administrator to review and assess damaged structures located within the Special Flood Hazard Area (SFHA). "Substantial damage" occurs when the cost of restoring a structure exceeds 50 percent of its market value before damage occurred. "Substantial improvement" occurs when the cost of improving a structure exceeds 50 percent of its market value before the start of construction. Property owners are advised that structures experiencing substantial damage, or undergoing substantial improvements, must go through the floodplain application and permit process. Additionally, these structures must be upgraded during the repair or reconstruction process to meet the minimum building standards stipulated in the regulations.

If it is determined substantial damage / improvement has occurred, those structures must be brought up to current floodplain management standards. This ensures compliance with floodplain management measures and contributes to the overall safety and resilience of the affected structures. These provisions are common to each community's floodplain management ordinances.

NFIP compliance is implemented through the following designations:

- Converse County: The County Surveyor has been appointed the Floodplain Administrator to administer and implement the provisions of the community floodplain ordinance and other appropriate sections of 44 CFR pertaining to floodplain management.
- City of Douglas: The City Administrator, or their designated representative, has been appointed the Floodplain Administrator to administer and implement the provisions of the community floodplain ordinance and other appropriate sections of 44 CFR pertaining to floodplain management.
- Town of Glenrock: The Town Zoning Officer has been appointed the Floodplain Administrator to administer and implement the provisions of the community floodplain ordinance and other appropriate sections of 44 CFR pertaining to floodplain management.

Also, to be considered are the flood mitigation actions contained in this HMP that support the ongoing efforts by participating communities to minimize the risk and vulnerability to the flood hazard.

PLAN MONITORING AND MAINTENANCE

Converse County and the HMPC agreed upon these HMP maintenance procedures. It was determined that the emergency manager will serve as the primary point of contact for these tasks. This position will coordinate all local efforts to monitor, evaluate, and update the HMP. Each participating local government will be responsible for implementing their specific mitigation actions and reporting on the status of these actions to the emergency manager.

Throughout the year, the emergency manager will monitor hazard events that may require the HMPC to revisit sections of the HMP. Reasons for this may include but are not limited

to: disaster events (affecting the county or other communities across the nation); changes in hazard risk or vulnerability due to population change, development, and/or climate change; changes in available funding resources; updated hazard studies or information; changes in governmental organizational structure; or public input / concerns.

Events that do not necessitate a HMP update at that time will be tracked by the emergency manager for integration into the five-year update.

Converse County Emergency Management will coordinate the on-going yearly maintenance for the HMP to include an annual progress report and action monitoring. This report will be compiled and shared at public meetings through the Local Emergency Planning Committee (LEPC). An annual HMP review questionnaire will be shared with the community to help incorporate changing concerns in future HMP updates. Other participating local governments will be asked to report their action statuses yearly to be included in the report.

An evaluation of the HMP's effectiveness will be directly measured from these annual progress reports.

CONTINUED PUBLIC ENGAGEMENT

Continuing public engagement over the HMP's next five-year lifespan is paramount to retaining community momentum as it relates to implementing the mitigation strategy. It is also important to use this opportunity to identify additional ways that the county's underserved communities and populations can be best represented by the HMP (detailed in the **UNDERSERVED COMMUNITIES** section). **TABLE 24** identifies these planned public engagement efforts for each local government.

Table 24 Planned Continued Public Engagement Efforts

Local Government	Engagement Effort(s)
Converse County	The HMP will be reviewed annually at LEPC meetings. It will be uploaded to the county website for public access. Social medias posts will be shared annually on the location of the plan. A yearly survey for county residents will be conducted to submit concerns regarding natural hazards.
City of Douglas	The city will utilize the HMP during public outreach events, including the City's FEMA CRS program, and during public hearings.
Town of Glenrock	Annually in the Fall, updates pertaining to the status of the HMP and associated mitigation

Local Government	Engagement Effort(s)
	actions will be discussed at Council Meetings and associated planning sessions.
Town of Rolling Hills	On an ongoing basis, the city will utilize social media and community newsletters to educate our public about the hazards in our community and mitigation progress made.

CHANGES IN COMMUNITY PRIORITIES

Communities are continually evolving over the HMP's five-year lifespan. For some, this can lead to changes in local government priorities, as it relates to hazard mitigation. Factors potentially influencing these priorities can include but are not limited to: recent disaster events; changing local resources, needs, or capabilities; new state or federal policies and funding resources; new hazard impacts identified by the updated risk assessment; or changes in growth and development. At the same time, other communities may have experienced no major changes that would influence the updated HMP. **TABLE 25** presents how this HMP was revised due to these potential changes in each local government.

Table 25 Changes in Community Priorities

Local Government	Changes Since Last HMP
Converse County	Changing priorities were dictated by the updated risk assessment and identified vulnerabilities. There have been no major changes to community priorities relating to hazards and related mitigation since the previous plan.
City of Douglas	Changing priorities were dictated by the updated risk assessment and identified vulnerabilities. There have been no major changes to community priorities relating to hazards and related mitigation since the previous plan. Many of the projects that the City of Douglas identified in previous plans have been ongoing projects and will continue.
Town of Glenrock	Changing priorities were dictated by the updated risk assessment and identified vulnerabilities. There have been no major changes to community

Local Government	Changes Since Last HMP
	priorities relating to hazards and related mitigation since the previous plan.
Town of Rolling Hills	Changing priorities were dictated by the updated risk assessment and identified vulnerabilities. There have been no major changes to community priorities relating to hazards and related mitigation since the previous plan.

PLANNING PROCESS

PLANNING INTEGRATION

Integration of the HMP into other planning mechanisms is vital for the overall implementation of the mitigation strategy. This also benefits a community by ensuring that there are no strategic conflicts across planning documents. **TABLE 26** documents how local governments were able to successfully integrate the 2019 HMP into other planning efforts.

Table 26 Integration of the 2019 HMP

Local Government	Plan Integration
Converse County	The 2019 HMP was utilized during development of past THIRA plans.
City of Douglas	The city utilized the 2019 HMP each year to help inform the update of the Capital Improvement Plan (CIP).
Town of Glenrock	The 2019 HMP was not integrated into any other community plans as no applicable plans were developed over this timeframe.
Town of Rolling Hills	The Stormwater Pollution Prevention Plan was created following the 2019 HMP and consulted that document for integration. The Town purchased 600 acres of raw land in 2019. As it is being developed, the HMP is reviewed to ensure development is not occurring in high hazard areas.

TABLE 27 details each local government's planned integration efforts for the 2024 HMP.

Table 27 Integration of the 2024 HMP

Local Government	Plan Integration
Converse County	The HMP will be integrated in future THIRAs and used to seek federal grant funding for mitigation projects
City of Douglas	The city will utilize the HMP when reviewing development applications and construction projects. The HMP will also be used in the City's FEMA CRS program.
Town of Glenrock	The HMP will be integrated into the Strategic / Master Plan and Adopted thru council. A member of the Town Department Heads will be assigned to this HMP plan for accountability.
Town of Rolling Hills	The information from the HMP will be considered and integrated into future planning efforts relating to the CIP, Parks & Rec Improvement Plan, Stormwater Protection Plan, and Water System Master Plan.

INCORPORATION OF EXISTING PLANS & INFORMATION

In addition to the data provided by stakeholders mentioned previously, all HMP-relevant existing plans, studies, reports, and technical information were reviewed during the update process. **TABLE 28** provides an overview of how each of these resources were incorporated into the HMP.

Table 28 Existing Resource Incorporation

Local Government	Plan Integration
Wyoming State HMP (2021)	Informed the mitigation strategy and risk assessment
National Oceanic and Atmospheric Administration (NOAA) National Centers for Environmental	Informed the risk assessment

Local Government	Plan Integration
Information (2023)	
NOAA National Weather Service (NWS) Storm Prediction Center	Informed the risk assessment
Rolling Hills Storm Water Pollution Prevention Plan	Informed the mitigation strategy

HAZARD IDENTIFICATION AND RISK ASSESSMENT

A qualitative risk ranking was performed by each participating local government for the hazards profiled in this plan. This risk ranking assessed the probability of each hazard's occurrence, as well as its likely impact on the people, property / environment, and economy of the planning area. The responses were collected utilizing a four-category qualitative scale. For probability of the hazard this included "unlikely (1)" "possible (2)", "probable (3)", and "likely (4)". For the impacts of the hazard to the three community sectors, the scale included "minor (1)", "limited (2)", "critical (3)", and "catastrophic (4)". The responses were then calculated into a quantitative range by combining the impact scores and multiplying by the probability score, which correlates with the "high," "moderate," and "low" risk rankings. **TABLE 29** presents each local government's hazard risk ranking.

For some local governments, select hazards identified as affecting the county may not currently present an immediate or impactful risk. Those hazards are denoted as not applicable (N/A).

Table 29 Local Government Hazard Risk Rankings

Hazard	Converse County	Douglas	Glenrock	Rolling Hills
Dam/Levee Incident	Moderate	High	N/A	N/A
Drought	Moderate	High	Moderate	High
Earthquake	Low	Low	Moderate	Low
Expansive Soils	Low	Moderate	N/A	N/A
Flood	Moderate	High	High	Moderate

Hazard	Converse County	Douglas	Glenrock	Rolling Hills
Landslide / Rockfall / Debris Flow	Low	Low	N/A	N/A
Mine and Land Subsidence	Moderate	Low	High	N/A
Severe Weather	High	High	High	High
Wildfire	High	High	High	High
Winter Storm	High	High	High	High

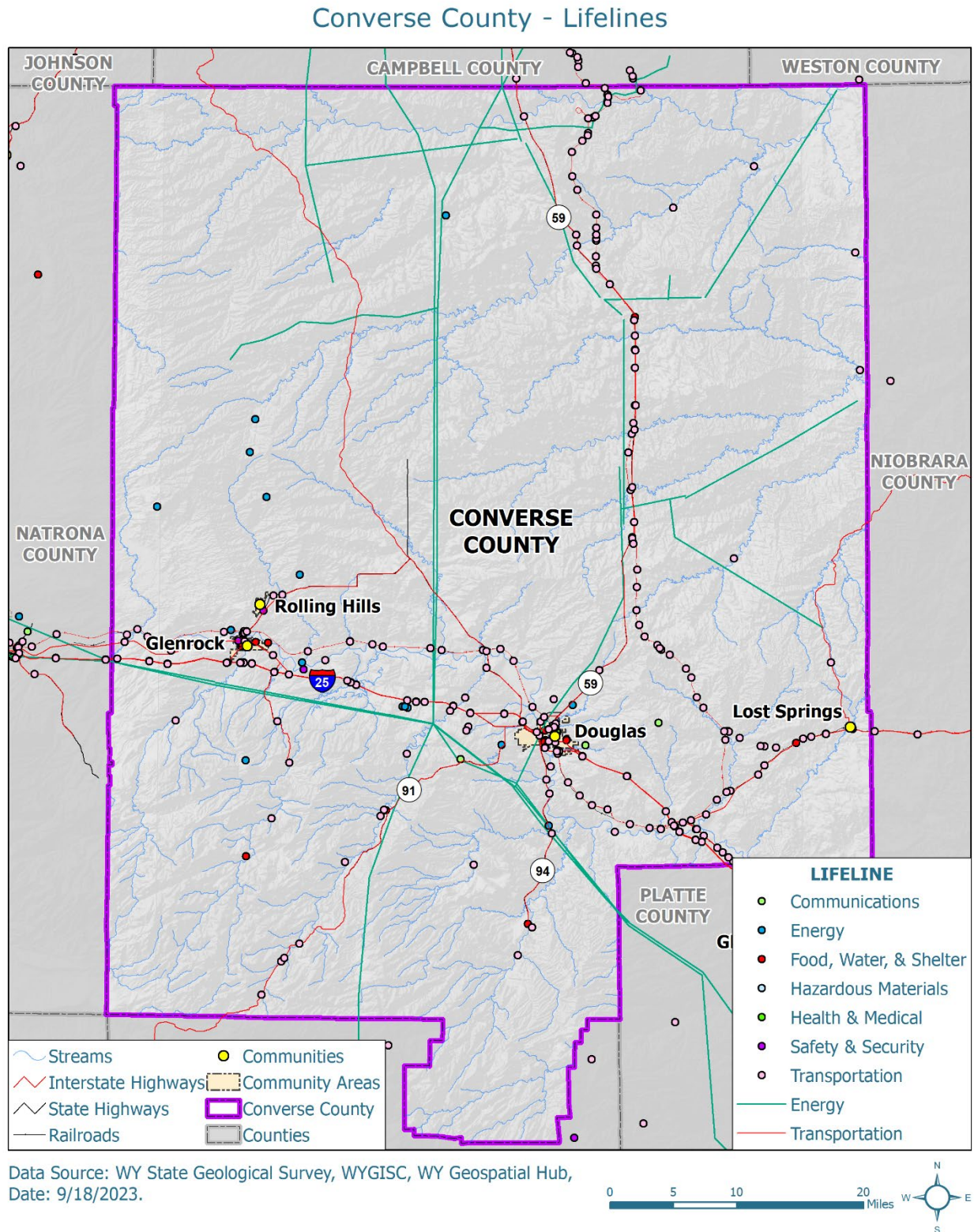
LIFELINES

FEMA's *Hazus Inventory National Database* was utilized for all Lifeline analysis. A baseline of this data is presented in **TABLE 30** and mapped in **Figure 13**.

Table 30 Lifeline Inventory

Lifeline	Douglas	Glenrock	Lost Springs	Rolling Hills	Unincorporated	Total
Communications	1	-	-	-	3	4
Energy	-	-	-	-	15	15
Energy (Miles)	2.0	-	-	-	438.0	440.0
Food, Hydration, & Shelter	7	3	-	-	6	16
Health & Medical	1	-	-	-	-	1
Safety & Security	4	2	-	-	2	8
Transportation	15	1	-	-	222	238
Transportation (Miles)	9.8	5.0	1.0	-	455.0	470.8

Figure 13 Lifelines



BUILDING INVENTORY

The US Army Corps of Engineers *National Structure Inventory* was utilized for all structure assessments. A baseline of this data is presented in **TABLE 31**.

Table 31 Structure Inventory

	Total Structure Count	Total Improved Structure Count	Total Structure Value	Estimated Content Value
Douglas	3,018	2,995	\$921,551,794	\$1,515,396,518
Commercial	368	354	\$310,091,460	\$612,038,718
Industrial	68	67	\$48,425,173	\$145,728,584
Public	40	38	\$69,899,176	\$141,209,235
Residential	2,542	2,536	\$493,135,985	\$616,419,981
Glenrock	1,173	1,173	\$316,011,264	\$498,385,343
Commercial	100	100	\$61,221,682	\$121,881,350
Industrial	28	28	\$19,941,870	\$58,548,601
Public	15	15	\$31,130,159	\$63,308,451
Residential	1,030	1,030	\$203,717,552	\$254,646,941
Lost Spring	3	3	\$1,381,095	\$2,334,826
Commercial	1	1	\$811,277	\$1,622,554
Industrial	0	0	\$0	\$0
Public	0	0	\$0	\$0
Residential	2	2	\$569,818	\$712,272
Rolling Hills	174	171	\$24,487,912	\$33,972,090
Commercial	5	3	\$499,349	\$998,697

	Total Structure Count	Total Improved Structure Count	Total Structure Value	Estimated Content Value
Industrial	5	4	\$1,982,678	\$5,396,189
Public	1	1	\$93,130	\$186,259
Residential	163	163	\$21,912,756	\$27,390,945
Unincorporated	4,556	4,496	\$1,352,097,123	\$2,555,704,329
Commercial	412	377	\$270,539,215	\$538,604,633
Industrial	198	191	\$337,224,597	\$1,079,147,295
Public	21	13	\$9,734,304	\$19,703,643
Residential	3,925	3,915	\$734,599,007	\$918,248,759
Total	8,924	8,838	\$2,615,529,188.28	\$4,605,793,105.95

DAM / LEVEE INCIDENT

There are numerous dams around Converse County, one of which poses high hazard potential and six that pose significant hazard potential. **TABLE 32** describes the significant and high hazard potential dams in and around Converse County.

Table 32 Dams

Dam Name	City	Distance to Nearest City (Miles)	River or Stream Name	Hazard Potential Class	Condition	EAP
LaPrele	Douglas	36	Laprele Creek, TR North Platte River	High	Unsatisfactory	Yes

Dam Name	City	Distance to Nearest City (Miles)	River or Stream Name	Hazard Potential Class	Condition	EAP
Douglas Fishing Lake No. 1	Douglas	4	Six Mile Creek	Significant	Unsatisfactory	Not Required
Werner Ranch Site	Unnamed Ranch	15	Werner Draw	Significant	Fair	Not Required
Elsie	Douglas	28	Moss Agate Creek	Significant	Poor	Not Required
Little Boxelder No. 1	I25	2	Little Box Elder Creek	Significant	Poor	Not Required
Chamberlain No. 1	Douglas	16	LaPrele Creek	Significant	Fair	Not Required
East Side No. 3	Douglas	6	Five Mile Creek	Significant	Poor	Not Required

PREVIOUS OCCURRENCES

On July 22, 1983 a dam connected to the LaPrele Range Drainage Basin in Converse County collapsed after a heavy thunderstorm event that caused intense flooding and runoff to inundate the dam. A wall of water estimated to be 10-15 feet high rushed through a nearby ranch southwest of Douglas. No damage information is available from the incident and HMPC members have confirmed that the impact of the failure was isolated to that single ranch.

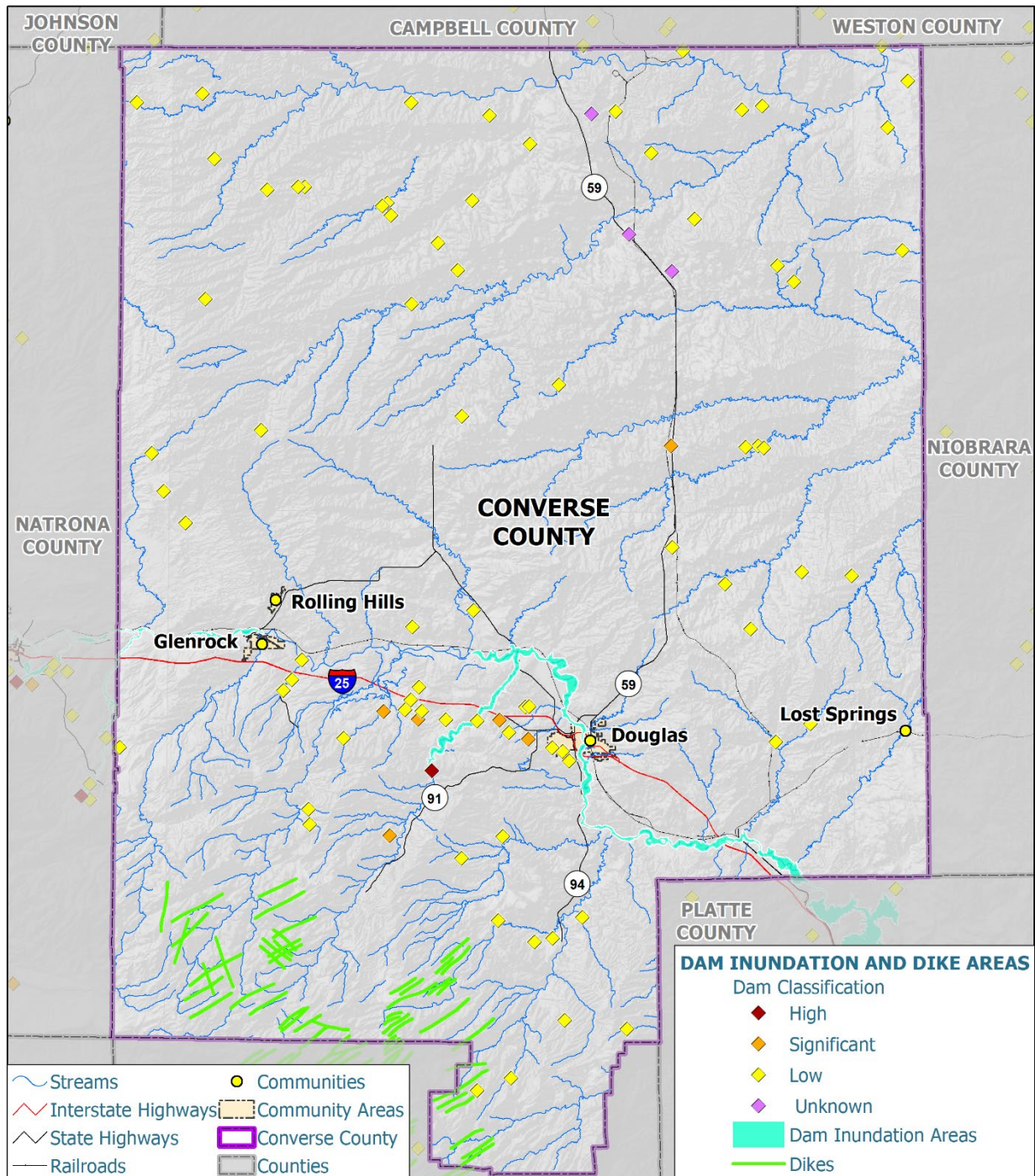
An additional event occurred on March 20, 2019 when an earthen dam near the Fiddle Back Ranch failed causing the release of water that washed out the nearby intersection of Dull Center and Lynch Road. The released water eventually made it downstream into the Cheyenne River causing the level to rise to the top of the riverbank.

LOCATION

Numerous dams and inundation areas are located near local communities, **Figure 14** maps the location of existing dam inundation areas in Converse County. There are no mapped levee (dike) inundation areas in the county.

Figure 14 Dike and Dam Inundation Areas

Converse County - Dikes and Dam Inundation Areas



Data Source: USACE National Levee Database,
WY State Geological Survey, WYGISC, WY Geospatial Hub,
Date: 10/12/2023.



EXPOSURE AND VULNERABILITY

Through development of the dam inundation risk assessment, the county identified no data limitations. All readily available data was incorporated into this plan.

Lifelines

Many Lifelines can be at risk from the effects of a dam or levee incident and resulting flooding; however, Food, Hydration, & Shelter will see the greatest immediate impact. A reservoir that serves as the primary source of drinking water can be disrupted or halted entirely, affecting the day-to-day lives of those who rely on the source, not only those who are in close proximity downstream of the dam. An incident may displace community members which could be for a short period or an extended duration, if a home is destroyed.

Other Lifelines that can be affected are Energy, Communications, and Transportation. If a dam is used to generate power, the disruption of delivery to communities would impact daily operations and potentially Communications. If Communication infrastructure is damaged, the disruption or failure of communications can be dangerous for the community, as they may not receive alerts and dispatch can be interrupted. This would also greatly hinder response efforts.

Transportation system damage and interruptions can interfere with evacuations and incident response, including emergency services. If Transportation and Communications are affected, the impact on the Health and Medical Lifeline can be extensive. The Hazardous Material Lifeline can be affected also, as flood waters can lead to release of materials, from facilities downstream and private properties, especially unsecured propane tanks.

TABLE 33 details the Lifelines that are located in dam inundation areas. There are no mapped levee inundation areas within Converse County.

Table 33 Lifelines in Dam Inundation Areas

Lifeline	Douglas	Glenrock	Lost Springs	Rolling Hills	Unincorporated	Total
Communications	1	-	-	-	-	1
Energy	0.2	-	-	-	2.0	2.2
Energy (Miles)	-	-	-	-	-	0
Food, Hydration, & Shelter	1	-	-	-	-	1
Health & Medical	-	-	-	-	-	0

Lifeline	Douglas	Glenrock	Lost Springs	Rolling Hills	Unincorporated	Total
Safety & Security	-	-	-	-	-	0
Transportation	3	-	-	-	20	23
Transportation (Miles)	0.2	-	-	-	2.8	3.0

People

Based on the structure exposure analysis in the following section, it is estimated that ~316 people (2.4 per household for Converse County) live in dam inundation areas (all in unincorporated areas). This does not take into account other people who might be in those areas at the time of an event.

Those in the community with access and functional needs (AFN), located downstream in dam inundation areas (or within levee protected areas), may be incapable of evacuating the area within the necessary time frame. This population includes elderly people, people with disabilities and mobility issues, those with independent living difficulty, those who are institutionalized and those without means of transportation. Non-English speaking populations are also included as communications and emergency messaging may not be available in languages other than English. In general, anyone who does not have adequate access to warnings from an emergency warning system may be disproportionately impacted by the hazard.

Structures

All hazard potential classes of dams pose a risk to properties downstream. Vulnerable properties are those closest to, or within, the dam inundation or levee protected areas. Based on an evaluation of best available structure footprint data for the county, there are numerous properties within levee inundation areas. Currently, much of the downtown area is protected by levees from the 100-year flood.

Property damages range greatly after a dam or levee incident, based on the severity of the water release. Structures can be completely washed away or flooded by a relatively small level of water. Any flood has the potential to render buildings uninhabitable, either permanently or for a temporary period while clean up occurs.

Agricultural lands can be greatly affected and depending on the time of year crop loss could be severe. Roads and bridges may become impassable and potentially need repairs.

Dam / levee incidents also cause damage to infrastructure. Roads or railroads that are blocked or damaged can isolate residents and can prevent access throughout the county. This is especially critical for those needing emergency service providers or for getting crews in to make repairs. Bridges washed out or blocked by floods or debris can also

cause isolation. Utilities including power lines, cable, and phone lines may be knocked down or rendered unusable by the waters.

Water and sewer systems can be affected by flooding. Floodwater can back up drainage systems, causing localized flooding. Culverts can be blocked by debris from flood events, also causing localized flooding. Floodwater can get into drinking water supplies, causing contamination. Sewer systems can be backed up, causing wastewater to spill into homes, neighborhoods, rivers, and streams. Underground utilities can also be damaged.

To assess the exposure and vulnerability of structures in Converse County, **TABLE 34** records the structure counts as well as the valuation of these structures located in dam inundation areas. There are no structures in mapped levee protected areas within Converse County

Table 34 Structures in Dam Inundation Areas

Lifeline	Total Structure Count	Total Improved Structure Count	Total Structure Value	Estimated Content Value
Douglas	0	0	\$0	\$0
Glenrock	0	0	\$0	\$0
Lost Spring	0	0	\$0	\$0
Rolling Hills	0	0	\$0	\$0
Unincorporated	133	132	\$38,761,715	\$58,986,430
Commercial	19	18	\$10,406,874	\$20,813,748
Industrial	2	2	\$2,183,304	\$5,458,260
Public	112	112	\$26,171,537	\$32,714,421
Residential	133	132	\$38,761,715.15	\$58,986,429.57
Total	133	132	\$38,761,715	\$58,986,430

Natural, Historic, and Cultural Resources

Dam incidents pose a great risk to the environment in the affected area. Flooding can change the local ecosystem, including permanent displacement of animals and extensive damage to vegetation. Damage to vegetation can contribute to erosion of riverbanks.

Erosion can alter the waterway and push silt and debris downstream. The environment closest to the incident will likely be the most impacted; however, the repercussions of flooding can be felt much farther downstream.

Reservoirs held behind dams, and rivers held behind levees affect many ecological aspects of a river. River topography and dynamics depend on a wide range of flows. Rivers below dams often experience long periods of very stable flow conditions, or saw-tooth flow patterns, caused by releases followed by no releases. Water releases from dams usually contain very little suspended sediment and this can lead to scouring of riverbeds and banks.

Local Vulnerability

Depending on the severity of a dam / levee incident there can be drastic effects on the county and regional economies, as well as financial issues for affected residents. Repairs to the dam itself can be considerable and many costs can fall to local agencies, businesses, and private owners. These costs could be considerable if the structures are not insured for floods. Any resulting damage downstream can affect daily operations for an extended period and has the potential to impact critical aspects of the economy such as recreation areas and tourist destinations.

Roads and infrastructure needed for day-to-day operations may be damaged. The transport of goods and travel across the county could be impacted, affecting the supply chain for local industry and the ability for residents to commute. **TABLE 35** provides additional vulnerability information identified by each local government.

Table 35 Local Government Vulnerability

Local Government	Local Vulnerability
Douglas	Failure of the LaPrele dam would endanger all exposed people, structures, and infrastructure in the inundation area through the city. Socially vulnerable populations are most at risk and there are concerns with their ability to recover following an event. Besides residences, public works facilities are those most exposed (water treatment plant, wastewater treatment plan, and lift stations). The State Fair Grounds would be the most impacted cultural site which would impact this valuable community event.
Glenrock	Does not currently present an immediate, known, or impactful risk.
Rolling Hills	Does not currently present an immediate, known, or impactful risk.
Unincorporated County	Failure of the LaPrele dam would endanger all exposed people, structures, and infrastructure in the inundation area through the county. Electric, gas, and fiber systems would be most at risk. This event would likely destroy Ayres Natural Bridge Park as well as two I-

Local Government	Local Vulnerability
	25 bridges. ³ Impacts from the loss of the park would have significant economic and recreational impacts.

FUTURE TRENDS IN DEVELOPMENT

Any development downstream of dams in Converse County could increase risk and possibly elevate the dam hazard potential classifications. It is crucial to consider the hazards posed by dams and levees when making any future development and construction decisions, to ensure new construction does not increase the county's risk to dam / levee incidents. **TABLE 36** provides additional information identified by each local government.

Table 36 Local Government Population Trends

Local Government	Local Population Trends
Douglas	Population has increased in the past five years resulting in a higher number of citizens who could be negatively impacted. Additional infrastructure and structures have been built resulting in a higher number of properties that could suffer damage.
Glenrock	Future development is not anticipated to impact vulnerability to this hazard.
Rolling Hills	Future development is not anticipated to impact vulnerability to this hazard.
Unincorporated County	Population in the unincorporated areas of the county did not increase, nor are major increases expected in the future. Overall vulnerability has not increased, nor is expected to, due to development.

PROBABILITY OF FUTURE OCCURRENCES

The likelihood of future events increases based on multiple factors including age, correct operation and regular maintenance, and inspections of dam infrastructure. With the added issue of severe weather events, all dams, many of which may be well maintained and functional, can potentially have more incidents, especially overtopping or spillway discharges.

There were two dam failure events between 1983 and 2023, which equates to a 5% chance of a dam failure occurring annually.

³ [Aging dam above Douglas called 'catastrophic' threat - Casper, WY Oil City News](#)

DROUGHT

PREVIOUS OCCURRENCES

The county has experienced several multi-year droughts over the past several decades. The most severe statewide drought in recent history started in 1999, but began in earnest in the spring of 2000 and lingered through 2004. 2005 was a wetter year, technically signifying the end of the drought period. Dry conditions returned in the following years and became especially severe between 2006 and 2007. According to the Wyoming State Climate Office, “conditions eased somewhat in mid-2008, but a near decade with warm temperatures and relatively little precipitation has left [Wyoming] very vulnerable”.⁴ Another particularly intense but short drought occurred in 2012.

The 1999-2004 drought is considered by many to be the most severe in collective memory. According to instrument records, since 1895 there have been only seven multi-year (three years or longer) statewide droughts. **TABLE 37** presents multi-year drought events from least to most precipitation.

Table 37 Significant Multi-Year Wyoming Droughts

Years	Average Annual Precipitation (inches)	Percent of 1985-2006 Average Annual Precipitation (13.04")
1952-1956	10.65	81.69%
1900-1903	10.76	82.52%
1999-2004	11.07	84.89%
1987-1990	11.12	85.28%
1958-1964	11.67	89.49%
1974-1977	11.77	90.26%
1931-1936	11.79	90.41%

The county has experienced six USDA drought declarations as shown in **Table 4**.

⁴ [Wyoming Drought - Wyoming Water Resources Data System and State Climate Office - Snow, Water, Climate data \(uwyo.edu\)](#)

LOCATION

Drought is a regional phenomenon that can affect all areas of the county and participating jurisdictions with similar frequency and severity; however, this can vary across the county.

EXPOSURE AND VULNERABILITY

Lifelines

The Lifeline most impacted by a drought event is Food, Hydration, & Shelter which includes Agriculture. Droughts can affect people and their livelihoods in a multitude of ways. Most critically, a drought can be detrimental to the supply of drinking water and available water for agricultural use. If a drought affects agricultural yields, food scarcity can become an issue, but the bigger impact is financial, as a decimated harvest can harm the local farmers, regional economy, and influence the greater market for the crop.

The Health and Medical Lifeline can be impacted in the Public Health area, as drinking water quality and availability can quickly be affected in a drought. If availability is an issue, medical facilities may not be able to perform the necessary duties due to sanitary concerns.

People

The effects of water availability and quality on public health is the primary concern in a drought. The immediate concern of availability of safe drinking water during the drought affects everyone in the affected region. Extreme heat that may accompany a drought can be dangerous for community members, especially for the elderly, children, those with chronic health conditions, and those who do not have a way to cool their homes.

Those with breathing difficulties may be impacted if soil is dry and strong winds occur in the area, as air quality can worsen due to dust particles.

Structures

The majority of buildings and infrastructure are typically not affected by drought as they do not depend on water for functionality or stability. However, any power infrastructure that uses water to produce electricity for communities, such as the hydroelectric component of dams, could be greatly impacted by an extended drought. If water levels are insufficient for generating the necessary power, operations may be halted.

Natural, Historic, and Cultural Resources

The geographic extent of drought can be far reaching and the effects can vary greatly across the impacted areas. In the region, abnormally low precipitation over an extended period puts stress on all ecosystems. As waterways decrease in flow, fish and aquatic plants can suffer and it may be difficult to recover the populations. Vegetation acting as food for animals and important binding for soils can dry out and struggle to grow back. Animals in search of water and food may have to travel farther, which can affect migration and breeding. Natural areas such as wetlands that play an important role in the overall health of the environment can be destroyed if water levels decrease. The risk of wildfires

increases as fuel dries out and becomes easier to ignite. Soil erosion resulting from dying vegetation can impact air quality, as strong winds pick up the dry dust.

Local Vulnerability

Manufacturing, recreation, and commercial and domestic use can be impacted by drought. Depending on the needs of a sector, poor water quality could result in higher costs to obtain water from acceptable sources.

TABLE 38 provides additional vulnerability information identified by each local government.

Table 38 Local Government Vulnerability

Local Government	Local Vulnerability
Douglas	Landscaping at community parks may need to be redone following water restrictions being implemented. This could also lead to cancelled sporting activities. Impacts to State Fair attendance could impact the local economy.
Glenrock	Redundant water supply is needed as the single, 12 mile supply pipe could be damaged rendering the town without water. The Platte River provides fishing and boating and these activities could potentially be impacted.
Rolling Hills	The largest vulnerability relates to livestock and health impacts due to an event.
Unincorporated County	The greatest concern would be on impacts to the ranching and agricultural communities. Economic impacts would be devastating.

FUTURE TRENDS IN DEVELOPMENT

Water in the county is sourced from “surface waters”, such as creeks, streams, lakes, and reservoirs and drought can drastically impact the population as these sources fluctuate. Leadership has an obligation to the county and communities to mitigate against drought and foster resilience in water management. Developing water management infrastructure, policies, codes, and public education can help to ensure that drought has a lessened effect as development continues. Addressing the pertinent issues during the development stage can help to avoid stressing the water supply unnecessarily. **TABLE 39** provides additional information identified by each local government.

Table 39 Local Government Population Trends

Local Government	Local Population Trends
Douglas	Population has increased in the past five years resulting in a higher number of citizens who could be negatively impacted.
Glenrock	Any future growth is not anticipated to change vulnerability to this hazard. The town is prepared to expand water / sewer service if this should occur.
Rolling Hills	Population did not increase, nor are major increases expected in the future. Overall vulnerability has not increased, nor is expected to, due to development.
Unincorporated County	Population in the unincorporated areas of the county did not increase, nor are major increases expected in the future. Overall vulnerability has not increased, nor is expected to, due to development.

PROBABILITY OF FUTURE OCCURRENCES

The relatively steady issuing of USDA disaster declarations over the last 15 years, as presented in **Table 4**, suggests it is likely the county will continue to experience drought substantial enough to need aid. It should also be noted that the counties have been contiguous to others that have received additional declarations.

The county has received six drought declarations since 2012, which equates to a 54% annual chance of a notable event occurring.

EARTHQUAKE

PREVIOUS OCCURRENCES

There have been sixteen earthquake events recorded in Converse County since 1947. Most of these events fall in the IV intensity category, ranging from a magnitude of 2.9 to 5.5.

The latest earthquake in the County occurred early November of 2008, with its epicenter about 11.3 miles northeast of Douglas, 11.8 miles north of Orin, and 10.25 miles northwest of Shawnee, right on Bill Hall Rd. It had a magnitude of 3.5, and a reported depth of 5 kilometers (about 3.1 miles).

The previous most recent event was a 3.8 earthquake on August 29, 2004, with the epicenter approximately 11 miles northwest of Douglas. There was no reported damage, but the earthquake was felt throughout the city and even on nearby highways. Members from the HMPC commented on this event, remarking that this quake occurred in the middle of vacant land and there was no damage reported because there were no structures or infrastructure near the epicenter. Additional seismic events are presented in **TABLE 40**.

Table 40 Previous Seismic Events

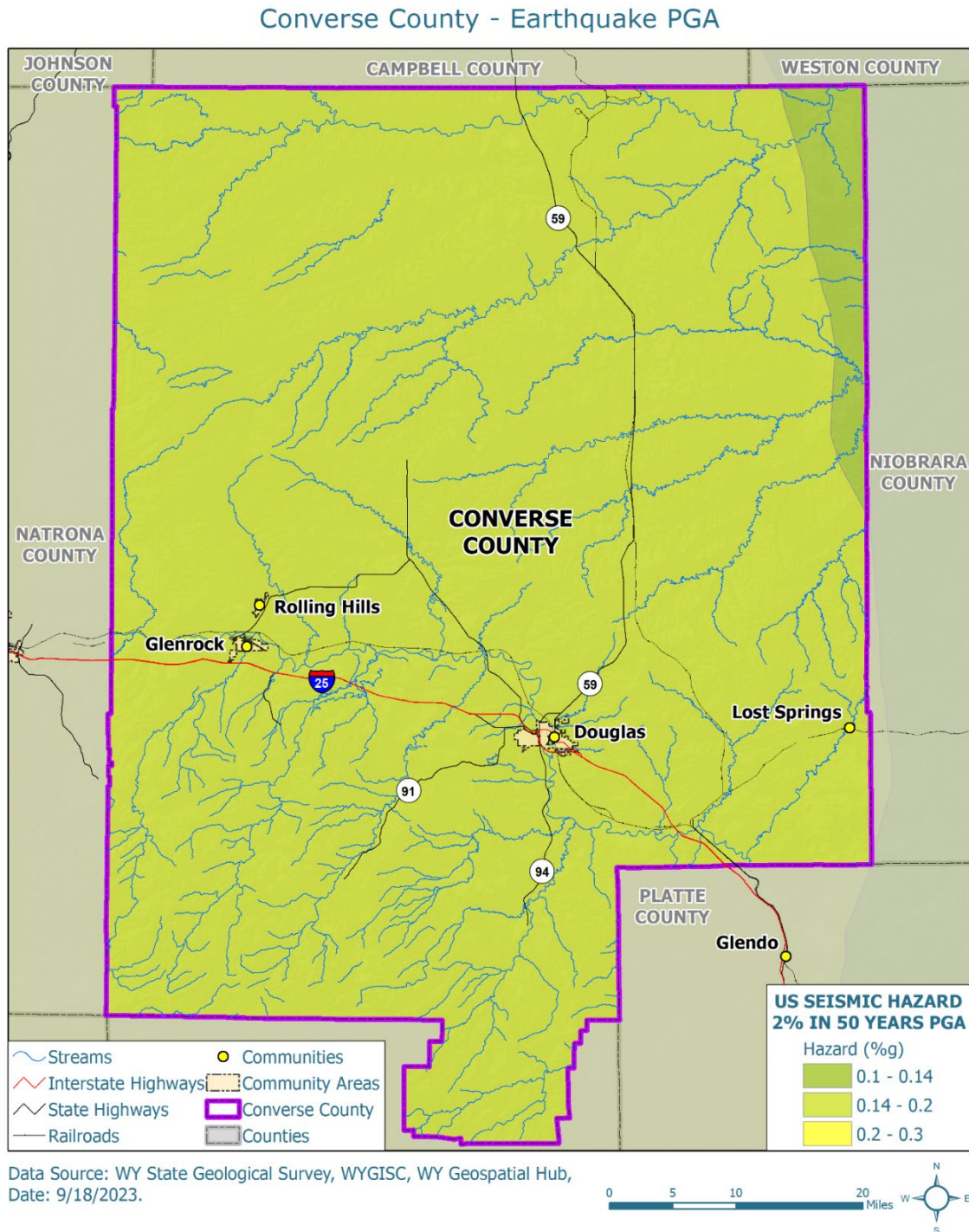
Date	Magnitude/ Intensity
April 14, 1947	Intensity V
The earthquake was felt by everyone in a ranch house and by a few outdoors. Windows were rattled, chairs were moved, and buildings shook.	
April 21, 1952	Intensity IV
Felt by several people in the area and was reportedly felt 40 miles to the southwest of Esterbrook.	
September 2, 1952	N/A
Small magnitude event; no damage reported.	
January 5, 1957	Intensity III
No damage reported.	
March 31, 1964	Intensity IV
No damage reported.	
November 15, 1983	Magnitude 3.0, Intensity III
No damage reported.	
October 18, 1984	Magnitude 5.5
Felt in Wyoming, South Dakota, Nebraska, Colorado, Utah, Montana, and Kansas. It cracked buildings and shook items from shelves in grocery stores in Douglas.	
December 5, 1984	Magnitude 2.9
No damage reported.	
June 30, 1993	Magnitude 3.0
No damage reported.	
July 23, 1993	Magnitude 3.7, Intensity IV

Date		Magnitude/ Intensity
The event was felt as far away as Laramie.		
December 13, 1993		Magnitude 3.5
No damage reported.		
October 19, 1996		Magnitude 4.2
No damage reported.		

LOCATION

Earthquakes have the potential to impact all areas of the county. Peak ground acceleration (PGA) is a measure of the maximum force experienced by a small mass located at the surface of the ground during an earthquake. A higher PGA roughly equates to more intense shaking. **Figure 15** illustrates the PGA for Converse County.

Figure 15 Peak Ground Acceleration



EXPOSURE AND VULNERABILITY

Lifelines

All Lifelines can be impacted significantly by an earthquake. Even with minimal damage Food, Hydration, & Shelter can be greatly affected due to need for sheltering displaced individuals, the likelihood of water pipelines leaking and breaking, and the possible contamination of the drinking water supply.

Infrastructure damage to Communications, Energy, and Transportation can range from minimal impacts on functionality to systems completely unable to provide information and power to the community. Transportation can be slowed by small upheavals in pavements or completely halted due to downed bridges or impassable roadways.

Health and Medical operations can be disrupted due to building damage or inability to transport patients. Fatality management may be needed on a large scale. Safety and Security may be unable to meet community needs if there is building or equipment damage. Hazardous Materials have the potential to be released from facilities or impacted in transit.

People

All people in the county are at risk to earthquakes. Depending on the location, magnitude, and other characteristics of the event, the effect on life safety can vary drastically. In a populated, developed area the risk of people being harmed is much higher than in an event that affects a rural area. Community members residing in multi-unit structures are vulnerable to the impacts of earthquakes, especially if their building is unstable or not built to current building codes.

Structures

There are many factors that affect the property damage an earthquake is capable of inflicting. Age and type of a building, as well as the materials used in construction all contribute to the likelihood of withstanding an earthquake with minimal damage. Historic buildings are especially at risk for these reasons.

Buildings constructed to meet updated codes or retrofitted to bring them up to code are at an advantage if an event were to happen. These codes are rated to a certain level of seismic activity; however, if an event of higher magnitude happens, serious damage is still possible.

Earthquakes can also rupture pipelines leading to sink holes causing damages to roads. Seismic waves can also cause damage to bridges, tunnels, sewer lines, and railways.

Damages from an earthquake can be broad, from minor cosmetic cracking to rendering a building uninhabitable. The variables of an event, as well as characteristics and the specifics of each building make estimation of damages difficult.

Based on 2,500 year probabilistic modeling of a 5.5 magnitude event, FEMA's Hazus loss estimation tool estimates the following. The full **EARTHQUAKE HAZUS RISK REPORT** can be found later in this annex.

- Seven households will be displaced as a result of an earthquake event.
- Three persons will seek temporary public shelter in an earthquake event.
- Throughout the day there will be eight level one casualties

Natural, Historic, and Cultural Resources

Earthquakes can change the very landscape of an environment, as ground openings, liquefaction, and landslides are possible. Wildlife may leave the area for an extended period, especially if an ecosystem is impacted. The secondary impacts of a dam failure or fire being ignited could have devastating effects in addition to the damage from the earthquake.

Local Vulnerability

Earthquakes have the potential to impact the economy on a large scale. Depending on the magnitude and location of the earthquake there could be extensive damage to infrastructure, buildings, and roads. Major damage to any of these would disrupt daily operations and require considerable construction and repairs. The duration of recovery could have a significant effect on the ability of businesses to reopen. **TABLE 41** presents local government vulnerabilities to earthquake events.

Table 41 Local Government Vulnerability

Local Government	Local Vulnerability
Douglas	The water treatment facility, wastewater treatment facility, pump stations, lift stations, and water tanks could be damaged in an event. Impacts to power stations are also a concern as would be damages to community facilities which would impact community activities.
Glenrock	All structures not constructed to meet current building codes.
Rolling Hills	Structural damage to homes and septic systems are the greatest vulnerability. Damages to the town's water infrastructure and paved road are also a potential threat.
Unincorporated County	All structures not constructed to meet current building codes.

FUTURE TRENDS IN DEVELOPMENT

The adopting of the most recent building codes is crucial to public safety, as growth continues and development increases. Adherence and enforcement of these codes, and ensuring the continued adoption of building code updates will ensure construction is built to withstand a seismic event. **TABLE 42** provides additional information identified by each local government.

Table 42 Local Government Population Trends

Local Government	Local Population Trends
Douglas	Population has increased in the past five years resulting in a higher number of citizens who could be negatively impacted. Additional infrastructure and structures have been built resulting in a higher number of properties that could suffer damage.
Glenrock	Very limited growth was experienced over the last five years, no major increases expected in the future. Overall vulnerability has not increased, nor is expected to, due to development.
Rolling Hills	Very limited growth was experienced over the last five years, no major increases expected in the future. Overall vulnerability has not increased, nor is expected to, due to development.
Unincorporated County	Population in the unincorporated areas of the county did not increase, nor are major increases expected in the future. Overall vulnerability has not increased, nor is expected to, due to development.

PROBABILITY OF FUTURE OCCURRENCES

Earthquakes may occur in the region, but it is difficult to know the specifics of an event. Lower magnitude events have been the most common in the region, but a larger, more devastating magnitude could occur with virtually no warning. From 1947 to 2023, there were 16 seismic events, therefore there is 21% of a seismic event annually.

EXPANSIVE SOILS

PREVIOUS OCCURRENCES

Due to the slow nature and primarily localized effects of expansive soils, they are often not reported as events. Damages within communities, such as cracking of foundations, sidewalks, roads, and parking lots are repaired and may not be attributed to expansive soils. Effects on supply lines, railways, bridges, and utility infrastructure are repaired or relocated without further investigation. Individual property owners become aware of damage to their homes and typically will handle repairs without informing towns or counties of the issue.

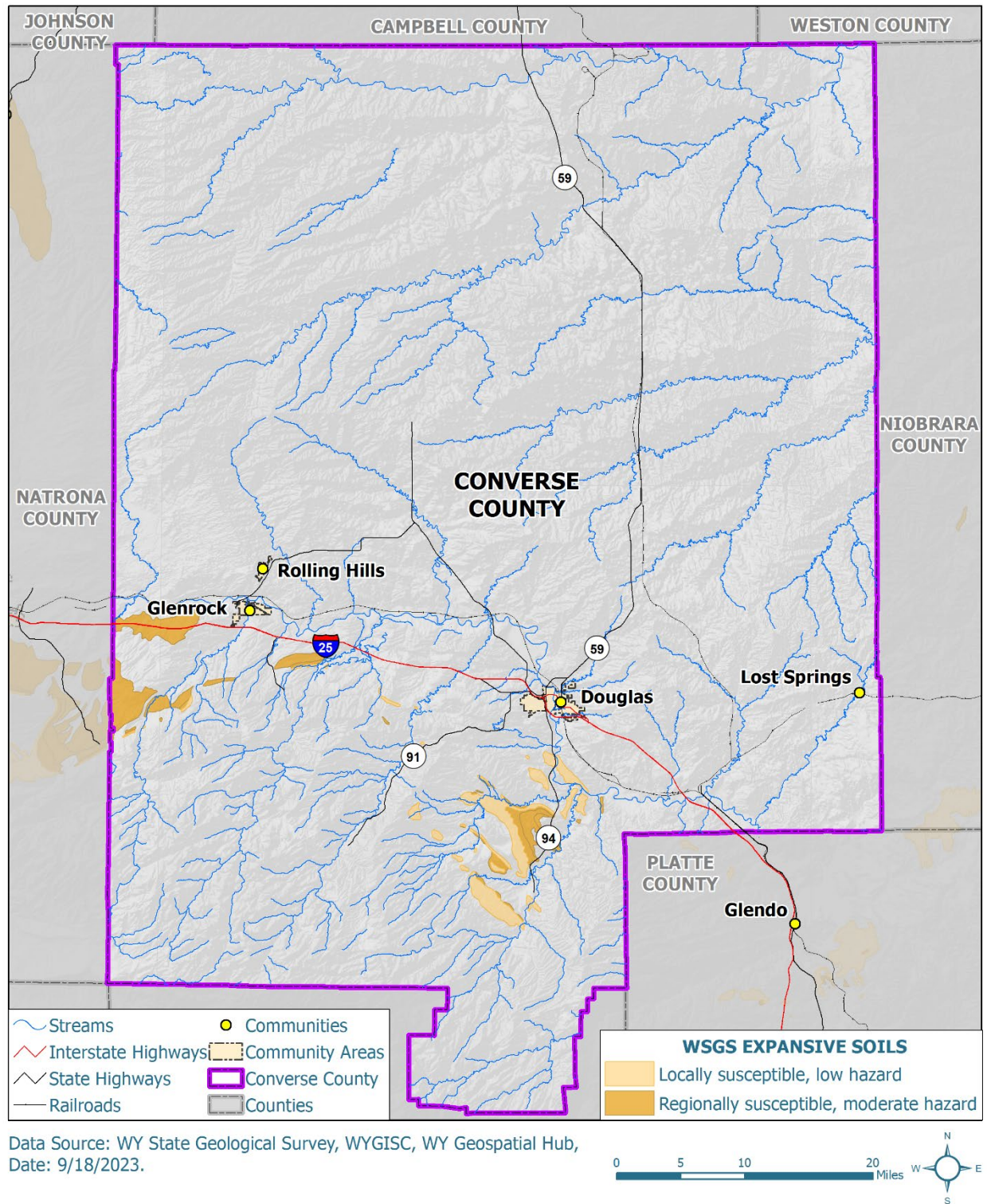
LOCATION

Expansive soils have been identified in multiple areas across the Region. While damage costs from expansive soils can be significant, they are typically localized and it is unlikely a large area would be impacted all at once. Due to the slow nature of soil swelling and shrinking, damages may not be apparent for years and estimating the overall costs in the affected area can be difficult.

Throughout the county numerous communities fall within identified expansive soil areas and could be impacted by this hazard. Viewing countywide and sometimes even municipal-scale maps does not provide the ability to see an individual community's specific hazard risk. Readers are urged to utilize available hazard data viewers to better understand their community's hazard risk. Expansive soil hazard information can be accessed through WY State Geological Survey's [Wyoming Geologic Hazards Map](#). **Figure 16** maps the location of known expansive soil areas in Converse County

Figure 16 Expansive Soils

Converse County - Expansive Soils



EXPOSURE AND VULNERABILITY

Lifelines

Some Lifelines have the potential to be affected by expansive soils, primarily Transportation and Energy. Shifting soils can disrupt pipelines and power infrastructure, and impact the safety of roads, railways, and bridges. **TABLE 43** shows the lifelines located in expansive soil areas.

Table 43 Lifelines in Expansive Soil Areas

Lifeline	Douglas	Glenrock	Lost Springs	Rolling Hills	Unincorporated	Total
Low Hazard						
Communications	-	-	-	-	-	0
Energy	-	-	-	-	-	0
Energy (Miles)	-	-	-	-	7.6	7.6
Food, Hydration, & Shelter	-	-	-	-	-	0
Health & Medical	-	-	-	-	-	0
Safety & Security	-	-	-	-	-	0
Transportation	-	-	-	-	2	2
Transportation (Miles)	-	-	-	-	1.0	1.0
Moderate Hazard						
Communications	-	-	-	-	-	0
Energy	-	-	-	-	-	0
Energy (Miles)	-	-	-	-	12.1	12.1
Food, Hydration, & Shelter	-	-	-	-	-	0
Health & Medical	-	-	-	-	-	0
Safety & Security	-	-	-	-	-	0

Lifeline	Douglas	Glenrock	Lost Springs	Rolling Hills	Unincorporated	Total
Transportation	-	-	-	-	5	5
Transportation (Miles)	-	-	-	-	12.0	12.0

People

There is no immediate threat to the public from expansive soils. Since there is no sudden shifting of the ground, people are able to notice changes in structures caused by the soil expansion over time. Observed changes in the structure can be addressed and repaired, or if necessary, people can be relocated. While small, there is a chance that damage to a structure would pose a threat to people if it went unnoticed for a long period and the structure failed.

Structures

Expansive soils can damage building foundations, pavement, supply lines, and utility infrastructure. **TABLE 44** outlines the properties within each jurisdiction that are exposed to expansive soils.

Table 44 Structures in Expansive Soil Areas (Moderate Hazard)

	Total Structure Count	Total Improved Structure Count	Total Structure Value	Estimated Content Value
Douglas	0	0	\$-	\$-
Glenrock	0	0	\$-	\$-
Lost Spring	0	0	\$-	\$-
Rolling Hills	0	0	\$-	\$-
Unincorporated	15	15	\$3,514,639	\$5,038,309
Commercial	1	1	\$860,013	\$1,720,026
Residential	14	14	\$2,654,626.11	\$3,318,283
Total	15	15	\$3,514,639	\$5,038,309

Natural, Historic, and Cultural Resources

Soil expansion does not have a large immediate impact on the environment as the effects occur over extended periods. Overall, expansive soils have the potential to alter the landscape of an area, but not drastically and should not affect wildlife and plant life in an ecosystem.

Local Vulnerability

A regional economic impact is highly unlikely. If transportation routes, power infrastructure, or pipelines are damaged it could result in costs for repair or relocation, which may be a local or private responsibility. **TABLE 45** provides additional vulnerability information identified by each local government.

Table 45 Local Government Vulnerability

Local Government	Local Vulnerability
Douglas	Some community facilities are located on expansive soils and if damaged in the future, the closure of these structures would result in the loss of important indoor and winter-time activities.
Glenrock	Does not currently present an immediate, known, or impactful risk.
Rolling Hills	Does not currently present an immediate, known, or impactful risk.
Unincorporated County	The largest concern would be impacts to roads and utilities disrupting the ability to respond and recovery from an event.

FUTURE TRENDS IN DEVELOPMENT

As development trends continue, the proper identification of expansive soil areas will be critical to new development being safe and sustainable over decades. All new developments in the region should be aware of this need for identification and enforce building codes and mitigation measures accordingly. **TABLE 46** provides additional information identified by each local government.

Table 46 Local Government Population Trends

Local Government	Local Population Trends
Douglas	Population has increased in the past five years resulting in a higher number of citizens who could be negatively impacted. Additional infrastructure and structures have been built resulting in a higher number of properties that could suffer damage.

Local Government	Local Population Trends
Glenrock	The town has experienced very minimal growth over the last five years. This, coupled with no historical issues with this hazard, leads the town to believe future growth will not increase vulnerability.
Rolling Hills	The town has experienced very minimal growth over the last five years. This, coupled with no historical issues with this hazard, leads the town to believe future growth will not increase vulnerability.
Unincorporated County	Population in the unincorporated areas of the county did not increase, nor are major increases expected in the future. Overall vulnerability has not increased, nor is expected to, due to development.

PROBABILITY OF FUTURE OCCURRENCES

Expansive soils do not change composition and therefore are always capable of swelling and shrinking. Due to this, soils can impact buildings and infrastructure in the region over years. This likelihood can increase if new development is built in expansive soil areas without addressing the risks posed by the hazard. There is a 100% chance that expansive soils will impact some portion of the county in a given year.

FLOOD

PREVIOUS OCCURRENCES

In Converse County, two flood events have caused reported property damages. On July, 1, 1998 a storm caused flooding in areas northwest of Douglas causing \$2,500 in reported damages. More than 2 decades later on March 20, 2019, a flash flood in the county caused \$10,000 in reported property damages. All of the notable events within the county are presented in **TABLE 47**.

Table 47 Notable Flood Events

Date	Property Damages
July 1, 1998	\$2,000
A storm produced up to 6 inches of rainfall from 50 miles northwest of Douglas to 30 miles north of Douglas. Water covered many rural roads in the area.	
July 12, 2009	
A couple of severe thunderstorms produced large hail and some flooding over parts of Converse and Platte counties. Heavy rains flooded parts of state highways 91 and 94,	

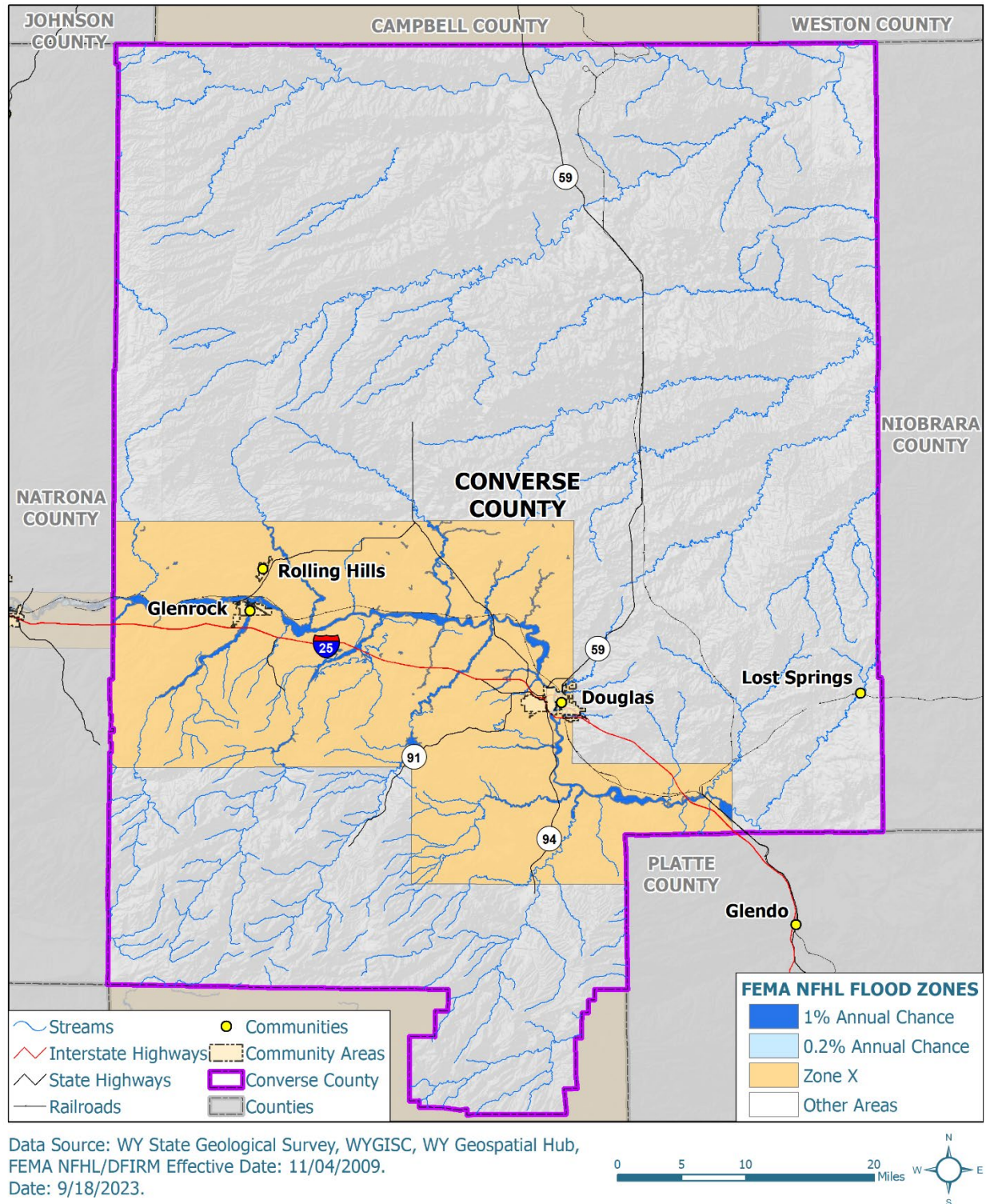
Date	Property Damages
resulting in closure for a time.	
August 9, 2013	
Slow moving thunderstorms across extreme northern Converse County produced rainfall estimates of one to three inches in a two-hour period. This heavy rainfall resulted in flash flooding. Water and debris were flowing across Highway 59 north of Bill.	
May 7, 2016	
Rain on snowmelt produced flash flooding in southwest Converse County. A thunderstorm produced large hail in eastern Laramie County. Flash flooding was reported on Esterbrook and Cold Springs Road. Two to three feet of water was reported at the Deer Creek RV park. Natural Bridge Park was closed due to rising flood waters. Flooding was reported along the Deer Creek, Boxelder and La Prele drainages.	
March 20, 2019	\$10,000
A strained earthen dam became breached water near the Fiddle Back Ranch releasing water as high as eight feet deep. Emergency Management reported the road at the intersection of Dull Center and Lynch Road was washed out as a result. The water eventually reached the Cheyenne River increasing the flow and level to top of the bank in places.	

LOCATION

Across Converse County there are a number of areas that are at risk of a flood event. **Figure 17** present the location of mapped areas of flood hazard within the county.

Figure 17 Flood Hazard

Converse County - Flood Hazards



EXPOSURE AND VULNERABILITY

Lifelines

Floods impact Lifelines through closure of businesses and government facilities, disrupted communications, interruption in the delivery of utilities such as water and sewer, excess burden on emergency response resources, and generally hinder the normal functions of a community. Food, hydration, and shelter lifelines are impacted by floods as community residents can be displaced from their homes during a flooding event, agricultural activities can be disrupted, and potable water sources can be contaminated.

Additionally, Transportation can be disrupted by flooding events causing road damages and closures and increased traffic in the case of community evacuation.

Health and Medical lifelines can also be impacted by flood events. Transportation impacts can disrupt patient and medical supply transportation. Health and medical facilities management can also be impacted with physical damages and increases in in-coming patients.

TABLE 48 details the Lifelines that are located in floodplain areas.

Table 48 Lifeline in 100- and 500- Year Floodplains

Lifeline	Douglas	Glenrock	Lost Springs	Rolling Hills	Unincorporated	Total
100 -Year Flood Zone						
Communications	-	-	-	-	-	0
Energy	-	-	-	-	1	1
Energy (Miles)	0.1	-	-	-	8.9	9.0
Food, Hydration, & Shelter	1	-	-	-	1	2
Health & Medical	-	-	-	-	-	0
Safety & Security	-	-	-	-	-	0
Transportation	6	1	-	-	29	36
Transportation (Miles)	0.3	0.1	-	-	4.7	5.1
500 -Year Flood Zone						
Communications	1	-	-	-	-	1

Lifeline	Douglas	Glenrock	Lost Springs	Rolling Hills	Unincorporated	Total
Energy	-	-	-	-	1	1
Energy (Miles)	0.1	-	-	-	8.9	9.0
Food, Hydration, & Shelter	1	-	-	-	1	2
Health & Medical	-	-	-	-	-	0
Safety & Security	-	-	-	-	-	0
Transportation	6	1	-	-	29	36
Transportation (Miles)	-	0.1	-	-	2.3	2.4

People

People living in floodplains, known flooding areas, or near areas where flash floods can occur are at an increased risk from the hazard. Those in the community with access and functional needs (AFN) may have issues evacuating and are at increased further risk, including the elderly, children, those with mobility or communication issues, those with low incomes, institutionalized, and people who may be unfamiliar with the area. Floods can cause serious injury and death if people are unable to get to safe locations. Some of the population may be displaced from their homes, with varying durations which can strain community resources.

Non-English speaking populations are also included as having a higher vulnerability as communications and emergency messaging may not be available in languages other than English. In general, anyone who does not have adequate access to warnings from an emergency warning system may be disproportionately impacted by the hazard.

The dangers of flash flooding pose an even greater risk, as those in these populations may not be able to extricate themselves from an immediately threatening situation. The need for emergency responders to place these populations as a priority is crucial to the best possible outcomes.

Structures

It is important to identify who may be at risk if infrastructure is damaged by flooding. Roads or railroads that are blocked or damaged can isolate residents and can prevent access throughout the county. This is especially critical for those needing emergency service providers or for getting crews in to make repairs. Bridges washed out or blocked by floods or debris can also cause isolation. Utilities including power lines, cable, and phone lines may be knocked down or rendered unusable by the waters.

Water and sewer systems can be affected by flooding. Floodwater can back up drainage systems, causing localized flooding. Culverts can be blocked by debris from flood events, also causing localized flooding. Floodwater can get into drinking water supplies, causing contamination. Sewer systems can be backed up, causing wastewater to spill into homes, neighborhoods, rivers, and streams. Underground utilities can also be damaged.

Many properties in the county are vulnerable to flooding, including those that may not be within a mapped floodplain. While some properties make be flood proofed, the majority are likely to be significantly damaged if in the flooded area. Properties near waterways may have stability issues as the flood waters erode the banks and carry debris, while properties in low-lying areas are more vulnerable as these are where water would collect.

TABLE 49 records the structure counts as well as the valuation of these structures located in 100-year floodplain areas and **TABLE 50** shows those in 500- year floodplain areas.

Table 49 Structures in 100- Year Floodplain

	Total Structure Count	Total Improved Structure Count	Total Structure Value	Estimated Content Value
Douglas	84	83	\$16,492,640	\$21,462,746
Commercial	7	6	\$1,129,262	\$2,258,524
Residential	77	77	\$15,363,378	\$19,204,223
Glenrock	33	33	\$9,504,665	\$12,728,085
Commercial	1	1	\$313,753	\$627,506
Industrial	1	1	\$489,551	\$1,223,878
Residential	31	31	\$8,701,361	\$10,876,701
Lost Spring	0	0	\$-	\$-
Rolling Hills	0	0	\$-	\$-
Unincorporated	300	297	\$89,885,999	\$110,327,085
Commercial	24	21	\$11,930,173	\$23,860,347
Industrial	6	6	\$5,695,259	\$18,210,210

	Total Structure Count	Total Improved Structure Count	Total Structure Value	Estimated Content Value
Public	1	1	\$74,778	\$149,555
Residential	269	269	\$72,185,789	\$68,106,974
Total	417	413	\$115,883,303.78	\$144,517,916.85

Table 50 Structures in 500- Year Floodplains

	Total Structure Count	Total Improved Structure Count	Total Structure Value	Estimated Content Value
Douglas	318	318	\$117,382,320	\$202,479,670
Commercial	67	67	\$56,052,779	\$112,433,148
Industrial	9	9	\$5,629,562	\$15,149,328
Public	3	3	\$7,029,628	\$14,059,256
Residential	239	239	\$48,670,351	\$60,837,938
Glenrock	0	0	\$-	\$-
Lost Spring	0	0	\$-	\$-
Rolling Hills	0	0	\$-	\$-
Unincorporated	0	0	\$-	\$-
Total	318	318	\$117,382,319.81	\$202,479,670.37

Natural, Historic, and Cultural Resources

Flooding is a natural event, and floodplains provide many natural and beneficial functions. However, with human development factored in, flooding can impact the environment in negative ways. Wildlife habitats can be impacted, due to altered food availability and interrupted breeding patterns. The effects on water quality due to silt and debris can

impact wildlife downstream of the flooding. Erosion of riverbanks can permanently alter a waterway and vegetation on the banks may not recover from the damage. Aquatic life can wash onto roads or over dikes into flooded fields. Pollution from roads such as oil and hazardous materials can wash into rivers and streams. During floods, these can settle onto normally dry soils, polluting them for agricultural uses.

Local Vulnerability

Flooding can have a long-term economic impact on individuals and the county. Homes that are damaged may require extensive repairs which can take place over a long duration, especially if mold develops. The cost of infrastructure repair for utilities, roads, and bridges, as well as the components of Lifelines may extend over multiple years as projects are prioritized and funds are acquired. Costs for debris clean-up can be considerable and can be a burden to property owners.

Returning to normal operations and daily life can take time which affects the day-to-day economy of the flooded area. Some businesses may struggle with repair costs and whether they can reopen at all.

Destruction of crops, erosion of topsoil, and deposition of debris and sediment on croplands due to flood would be expensive to remediate, as well as recover from lack of yield. Direct costs for the value lost and indirect costs for the loss of work that comes from harvest and livestock transport can impact the agricultural community for an extended period.

TABLE 51 provides additional vulnerability information identified by each local government.

Table 51 Local Government Vulnerability

Local Government	Local Vulnerability
Douglas	A significant population would be impacted by flooding along Antelope Creek. The water treatment plant, wastewater treatment plant, and a lift station are located adjacent to the North Platte River and damages to these facilities would be significant. Electrical and gas lines would be those systems most impacted. The State Fair Grounds would be the most impacted cultural site which would impact this valuable community event. Closures of many community parks, located in the floodplain, would impact events and recreational activities resulting in economic losses to the community.
Glenrock	Bridge on and homes along Deer Creek could be impacted. Town water main near Sunup Ridge could be damaged impacting the town's water supply.
Rolling Hills	A flood event could impact resident's travel to essential services, such as grocery and medical needs. Additionally an event could impact

Local Government	Local Vulnerability
	homes and outbuildings and related septic and water systems.
Unincorporated County	Electric, gas, and fiber systems would be most at risk, the loss of any would disrupt the ability to respond and recover from an event. Damages to any of the I-25 bridges would create lasting economic impacts.

FUTURE TRENDS IN DEVELOPMENT

As development in the county continues, flood risks will have larger impacts and increase community vulnerability. Proper mitigation will include public education on flood plains and building codes that recognize flood risks. **TABLE 52** provides additional information identified by each local government.

Table 52 Local Government Population Trends

Local Government	Local Population Trends
Douglas	Population has increased in the past five years resulting in a higher number of citizens who could be negatively impacted. Additional infrastructure and structures have been built resulting in a higher number of properties that could suffer damage.
Glenrock	No future development will occur within known floodplains.
Rolling Hills	No future development will occur within known floodplains.
Unincorporated County	Population in the unincorporated areas of the county did not increase, nor are major increases expected in the future. Overall vulnerability has not increased, nor is expected to, due to development.

PROBABILITY OF FUTURE OCCURRENCES

Flooding is likely in the region and the effects could be extensive, considering the amount of area and property that lies within floodplain. Flash floods will occur more often in areas that have seen damage from wildfires, affecting the soil's ability to retain moisture.

Five notable flood events have occurred in the county since reporting began in 1950, which means that there is a 7% probability of a flood event annually.

LANDSLIDE / ROCKFALL / DEBRIS FLOWS

PREVIOUS OCCURRENCES

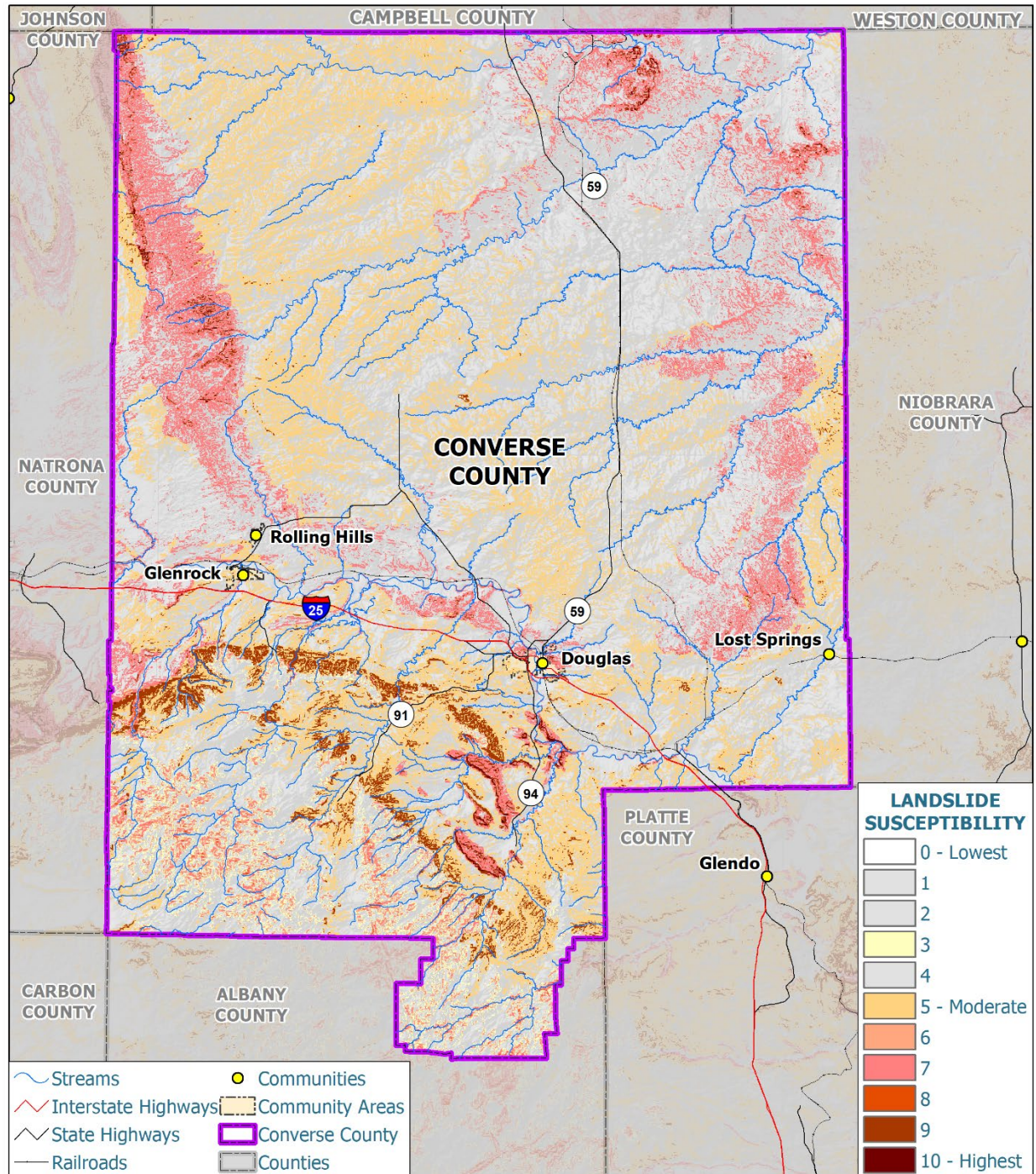
While there are mines in the county as well as areas of high landslide risk susceptibility, there have been very few previous events of which zero are recorded in NOAA's Storm Events database. This can be attributed to event occurring in areas that where impacts pose minimal risk to communities and a lack of reporting of events by local communities.

LOCATION

Most of the County is at low risk for landslides, however there are large amounts of the county which are located in moderate risk areas as well as high risk areas, **Figure 18** maps the areas of landslide hazard risk in Converse County

Figure 18 Landslide Susceptibility

Converse County - Landslide Susceptibility



Data Source: WY State Geological Survey, WYGISC, WY Geospatial Hub,
Date: 9/18/2023.



EXPOSURE AND VULNERABILITY

Lifelines

All community Lifelines across the county are vulnerable to the impacts from a mass wasting event. The Transportation Lifeline could be the most impacted. While no analysis is possible without mapped hazard areas, the likelihood of road closures and bridge damage in a debris flow event is high. Most debris flows will have little to no impact to Lifelines. In some cases, single events may have significant impact, resulting in deaths or causing extensive damage to public infrastructure. **TABLE 53** details the Lifelines that are located in landslide susceptible areas.

Table 53 Lifelines in Landslide Susceptible Areas

Lifeline	Douglas	Glenrock	Lost Springs	Rolling Hills	Unincorporated	Total
Moderate Hazard						
Communications	-	-	-	-	-	0
Energy	-	-	-	-	-	0
Energy (Miles)	0.3	-	-	-	26.0	26.3
Food, Hydration, & Shelter	-	-	-	-	-	0
Health & Medical	-	-	-	-	-	0
Safety & Security	-	-	-	-	-	0
Transportation	1	-	-	-	9	10
Transportation (Miles)	0.3	0.1	-	-	23.5	23.9
High Hazard						
Communications	-	-	-	-	-	0
Energy	-	-	-	-	-	0
Energy (Miles)	-	-	-	-	5.6	5.6
Food, Hydration, & Shelter	-	-	-	-	-	0
Health & Medical	-	-	-	-	-	0

Lifeline	Douglas	Glenrock	Lost Springs	Rolling Hills	Unincorporated	Total
Safety & Security	-	-	-	-	-	0
Transportation	-	-	-	-	-	0
Transportation (Miles)	-	0.1	-	-	2.3	2.4

People

Exposure to landslide hazard areas is likely limited. Individuals in recreation areas or driving on roadways may also be exposed to landslide hazards. In general, all persons exposed to landslide hazard areas are considered to be vulnerable. In most debris flow events, there are limited or no deaths and injuries.

Structures

Several types of infrastructure are exposed to mass movements, including transportation, water and sewer, and power. Highly susceptible areas of the county include mountain roads and transportation infrastructure. At this time, all infrastructure and transportation corridors identified as exposed to the landslide hazard are considered vulnerable until more information becomes available.

TABLE 54 accounts for the total exposure of buildings to landslide susceptibility areas. These areas are where landslides are most likely to happen and therefore pose the highest risk to people and property.

Table 54 Structures in Landslide Susceptible Areas (High Hazard)

	Total Structure Count	Total Improved Structure Count	Total Structure Value	Estimated Content Value
Douglas	1	1	\$139,692	\$174,615
Residential	1	1	\$139,692	\$174,615
Glenrock	9	9	\$2,484,956	\$4,146,028
Commercial	2	2	\$1,056,170	\$2,360,046
Residential	7	7	\$1,428,785	\$1,785,982
Lost Spring	0	0	\$-	\$-

	Total Structure Count	Total Improved Structure Count	Total Structure Value	Estimated Content Value
Rolling Hills	0	0	\$-	\$-
Unincorporated	17	17	\$3,516,756	\$4,516,261
Commercial	1	1	\$481,263	\$721,894
Residential	16	16	\$3,035,493	\$3,794,366
Total	27	27	\$6,141,403.68	\$8,836,903.26

Natural, Historic, and Cultural Resources

Landslides, debris flows, and rockfalls have the ability to cause damages to the various natural, historic, and cultural resources of a community. These events can damage historic buildings, museums, as well as other historic and culturally important structures and spaces. Additionally, these events can damage agricultural systems, destroying crops and harming livestock, and disrupt natural ecosystems.

Local Vulnerability

Road closures caused by landslides, debris flows, and rockfalls have economic impacts on communities. Not only may businesses along closed road experience decreased customer traffic, reduced sales, and potential financial losses, road closures can impact supply chains, transportation logistics, and productivity.⁵ **TABLE 55** provides additional vulnerability information identified by each local government.

Table 55 Local Government Vulnerability

Local Government	Local Vulnerability
Douglas	Critical infrastructure (water, sewer, power, roads, and communications) would be most impacted. Damages to cultural resources, or access to these locations, would negatively impact the local economy.
Glenrock	Does not currently present an immediate, known, or impactful risk.

⁵ <https://www.nationaltrafficdesigns.com/how-does-a-road-closure-affect-traffic-flow/>

Local Government	Local Vulnerability
Rolling Hills	Does not currently present an immediate, known, or impactful risk.
Unincorporated County	Impacts to electric, gas, and fiber systems are of most concern, the loss of any would disrupt the ability to respond and recover from an event. The blocking and closure of any major roadways would create economic impacts.

FUTURE TRENDS IN DEVELOPMENT

Any development in known landslide area could increase risk to this hazard. Development in and around previous wildfire burn scars will also experience increased risk. **TABLE 56** provides additional information identified by each local government.

Table 56 Local Government Population Trends

Local Government	Local Population Trends
Douglas	Population has increased in the past five years resulting in a higher number of citizens who could be negatively impacted. Additional infrastructure and structures have been built resulting in a higher number of properties that could suffer damage.
Glenrock	No future development will occur within known landslide or rockfall areas.
Rolling Hills	No future development will occur within known landslide or rockfall areas.
Unincorporated County	Population in the unincorporated areas of the county did not increase, nor are major increases expected in the future. Overall vulnerability has not increased, nor is expected to, due to development.

PROBABILITY OF FUTURE OCCURRENCES

The frequency of landslide events within the county are difficult to ascertain due to a lack of information regarding past events. For the purposes of this plan, it will be assumed that landslide / rockfall events are likely to occur in any given year (100% annual chance).

Debris flows can occur rapidly with little warning during torrential rains. Debris flows generally occur with floods and downpours associated with the late summer monsoon season. Quantitative data availability is limited but, future debris flow events are likely to occur across the county. Multiple factors may increase the frequency, including the effects of wildfire on the landscape and its ability to retain water.

MINE AND LAND SUBSIDENCE

PREVIOUS OCCURRENCES

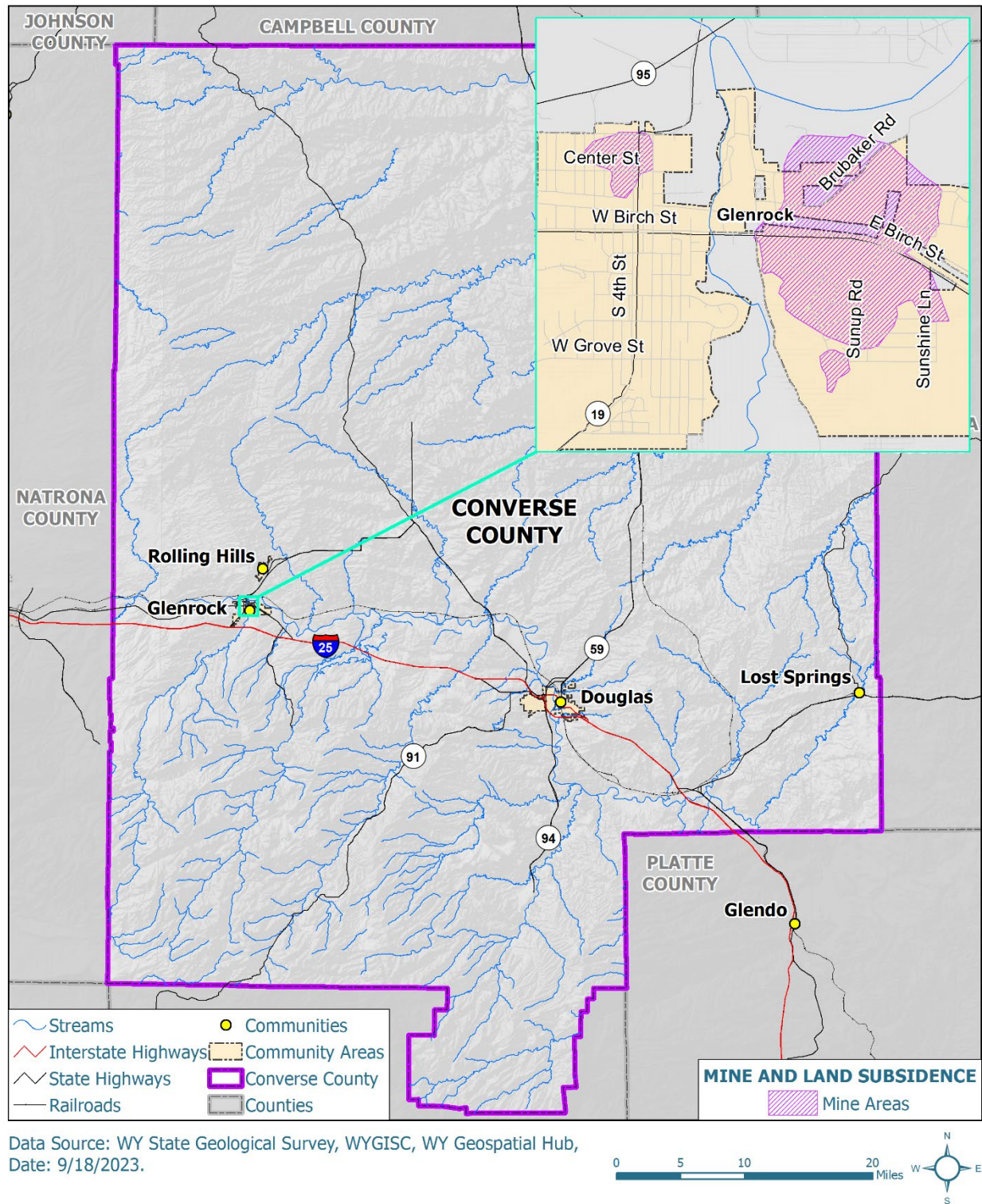
Collapsible soils, evaporite sinkholes, undermined area subsidence are present across the state. Previous losses due to collapsible soils, sinkholes, and coal undermined area subsidence can be difficult to quantify as there is no central reporting location for any of these hazards. Although one incident of these hazards can cost millions to repair and remediate, which is shown in the loss figures for some of the notable events.

LOCATION

The variance in geography across the state creates very different geologic conditions and therefore unique exposure to the specific hazards impacting communities. It should be noted that the location of undermined areas is not the same thing as subsidence hazard. In general, subsidence hazards typically extend beyond the mapped footprint of a mine. The coal undermined subsidence areas provide a best available data snapshot, as there are known mines that have not been studied to determine the subsidence risk. **Figure 19** Maps the areas of Converse County located in Mine and Land Subsidence hazard areas.

Figure 19 Mine and Land Subsidence Areas

Converse County - Mine and Land Subsidence



EXPOSURE AND VULNERABILITY

Lifelines

Communications, energy, and transportation are the community lifelines most vulnerable to the impacts from ground subsidence. It is unlikely that all sectors could be affected, or resources strained due to the relatively small footprint of hazard events. There are likely no long-term effects on recovery and resilience. **TABLE 57** highlights Lifeline lines affected by mine subsidence, there no Lifeline points impacted.

Table 57 Lifelines in Mine Subsidence Areas

Lifeline	Douglas	Glenrock	Lost Springs	Rolling Hills	Unincorporated	Total
Energy (Miles)	-	-	-	-	-	0
Transportation (Miles)	-	0.7	-	-	-	0.7

People

Anyone living over or near an undermined area or other area susceptible to ground subsidence is at risk from the hazard. In many cases it is known where mines are located, as well as the shaft openings.

Structures

Subsidence can result in ground displacement of several feet and serious structural damage to buildings, roads, irrigation ditches, underground utilities, and pipelines. It can disrupt and alter the flow of surface or underground water. Surface depressions created by subsidence may be filled in, only to sink further because the underground void has not been completely closed. **TABLE 58** presents the structures located in subsidence areas.

Table 58 Structures in Mine Subsidence Areas

	Total Structure Count	Total Improved Structure Count	Total Structure Value	Estimated Content Value
Douglas	0	0	\$-	\$-
Glenrock	219	219	\$52,007,243	\$77,936,299
Glenrock No. 1&2				

	Total Structure Count	Total Improved Structure Count	Total Structure Value	Estimated Content Value
Commercial	12	12	\$5,654,272	\$12,378,819
Industrial	3	3	\$1,679,203	\$5,090,247
Public	1	1	\$582,884	\$1,165,768
Residential	134	134	\$26,707,805	\$33,384,756
Goff				
Residential	4	4	\$378,194	\$472,743
McDonald/Fairview Mine				
Commercial	3	3	\$3,527,133	\$7,054,266
Industrial	3	3	\$1,016,256	\$2,812,828
Residential	59	59	\$12,461,496	\$15,576,870
Lost Spring	0	0	\$-	\$-
Rolling Hills	0	0	\$-	\$-
Unincorporated	23	23	\$2,993,369	\$4,517,898
Glenrock No. 1&2				
Commercial	4	4	\$1,034,917	\$2,069,833
Residential	19	19	\$1,958,452	\$2,448,065
Total	242	242	\$55,000,612.11	\$82,454,196.81

Natural, Historic, and Cultural Resources

Mine and land subsidence events can damage the nature ecosystem within the county. Ground collapse can additionally impact agriculture by damaging farmland and infrastructure

Local Vulnerability

Previous losses due to collapsible soils, sinkholes, and coal undermined area subsidence can be difficult to quantify as there is no central reporting location for any of these hazards. Although one incident of these hazards can cost millions to repair and remediate, which is shown in the loss figures for some of the notable events. **TABLE 59** presents local vulnerabilities identified by each local government.

Table 59 Local Government Vulnerability

Local Government	Local Vulnerability
Douglas	Residents employed at active mine locations could be placed out-of-work. Land subsidence at the State Fair Grounds could result in a significant loss of revenue and impacts to this important community event.
Glenrock	Structures are the most vulnerable, based on past events. The historic Commerce Block has a mine underneath it.
Rolling Hills	Does not currently present an immediate, known, or impactful risk.
Unincorporated County	Any areas where historic underground mining has occurred. Impacts to electric, gas, and fiber systems are of most concern.

FUTURE TRENDS IN DEVELOPMENT

As Region 2's population continues to grow and the need for additional housing increases, more people and property may be affected by subsidence. Local land use planning agencies should consult federal and state sources including CGS, the US Forest Service, and the Bureau of Land Management to identify known abandoned mine lands and other subsidence hazards before beginning development projects. Engineering geology and geotechnical investigations can help in identification of hazards and mitigation strategies. **TABLE 60** provides additional information identified by each local government.

Table 60 Local Government Population Trends

Local Government	Local Population Trends
Douglas	Population has increased in the past five years resulting in a higher number of citizens who could be negatively impacted. Additional infrastructure and structures have been built resulting in a higher number of properties that could suffer damage.
Glenrock	Sunup Ridge is the focal point of hazard areas and is where new

Local Government	Local Population Trends
	housing would likely occur. Most of this area has been mitigated.
Rolling Hills	Population did not increase, nor are major increases expected in the future. Overall vulnerability has not increased, nor is expected to, due to development.
Unincorporated County	Population in the unincorporated areas of the county did not increase, nor are major increases expected in the future. Overall vulnerability has not increased, nor is expected to, due to development.

PROBABILITY OF FUTURE OCCURRENCES

While mine and land subsidence events are rarely recorded, they will continue to occur throughout Converse County. There is a 100% chance that these events will impact some portion of the county in a given year.

SEVERE WEATHER

PREVIOUS OCCURRENCES

Thunderstorm and Lightning

These events occur regularly, but there is only one notable event as reported by NOAA. A lightning strike on July 21, 1997 caused a fire that burned 500 acres of grass on a ranch near Orin, causing \$5,000 in crop damages.

Hail

A severe hail event on August 15, 1996 with hail stones measured at 1.75 inches caused \$30,000 in damages. Fortunately, there were no injuries or deaths directly caused by hail. **TABLE 61** presents notable hail events in Converse County and **Figure 20** maps the historical events in the county.

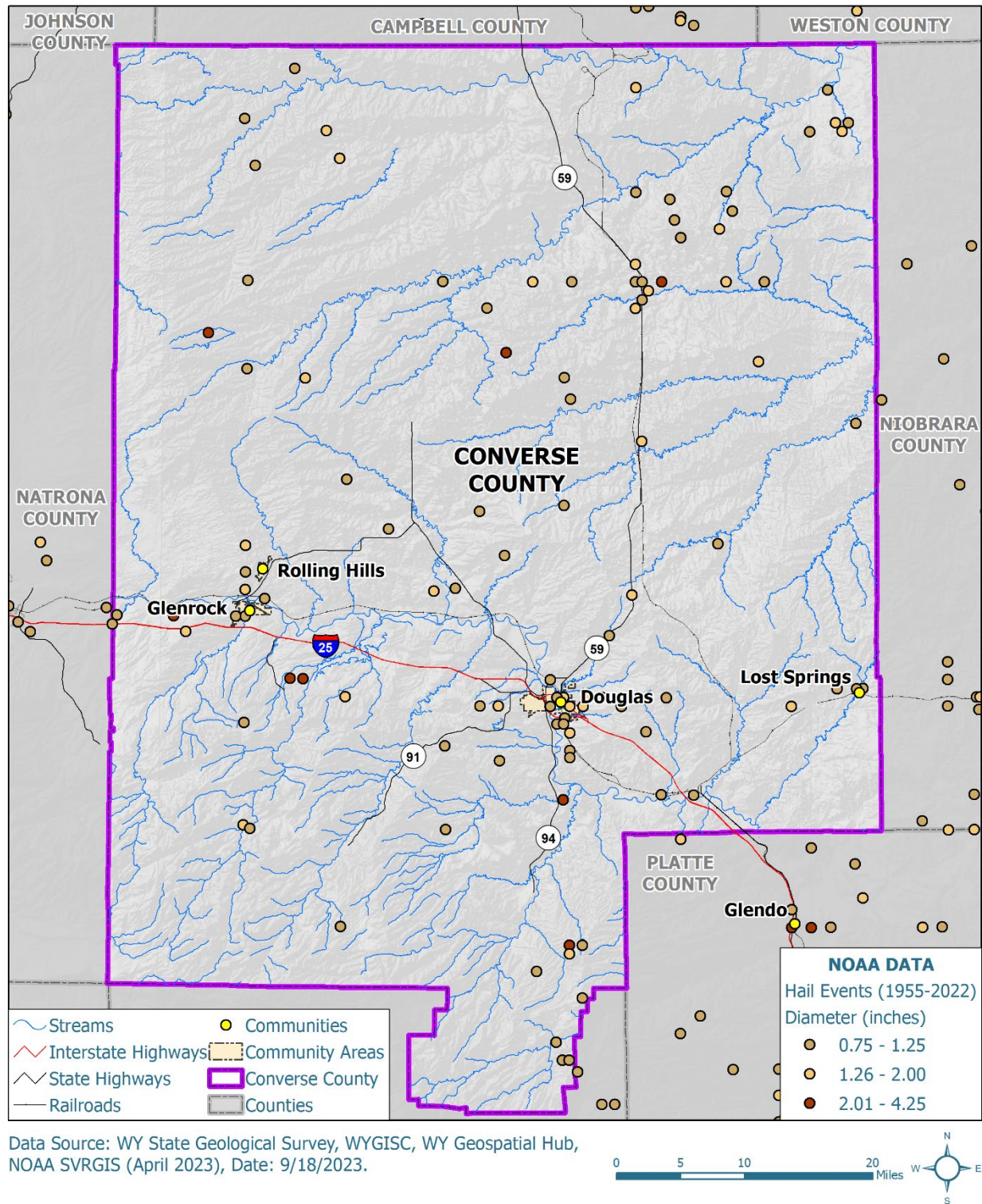
Table 61 Notable Hail Events

Location	Date	Hail Size (inches)	Injuries	Property Damages
Douglas	August 15, 1996	1.75	0	\$30,000
Glenrock	August 19, 1997	1.75	0	\$2,000
Glenrock	August 29, 1997	1.75	0	\$2,000

Location	Date	Hail Size (inches)	Injuries	Property Damages
Douglas	July 1, 1998	2.75	0	\$7,000
Bill	July 1, 1998	1.75	0	\$4,000
Douglas	July 12, 2009	1.25	0	\$15,000

Figure 20 Historical Hail Events

Converse County - Historical Hail Events



Wind

From 2016 to 2023 there have been over a hundred wind events ranging in windspeed, shown in **TABLE 62** however none of these events caused significant damages. **TABLE 63** highlights notable wind events in Converse County and **FIGURE 21** maps the location of historic wind events in the county.

Table 62 Wind Events By MPH

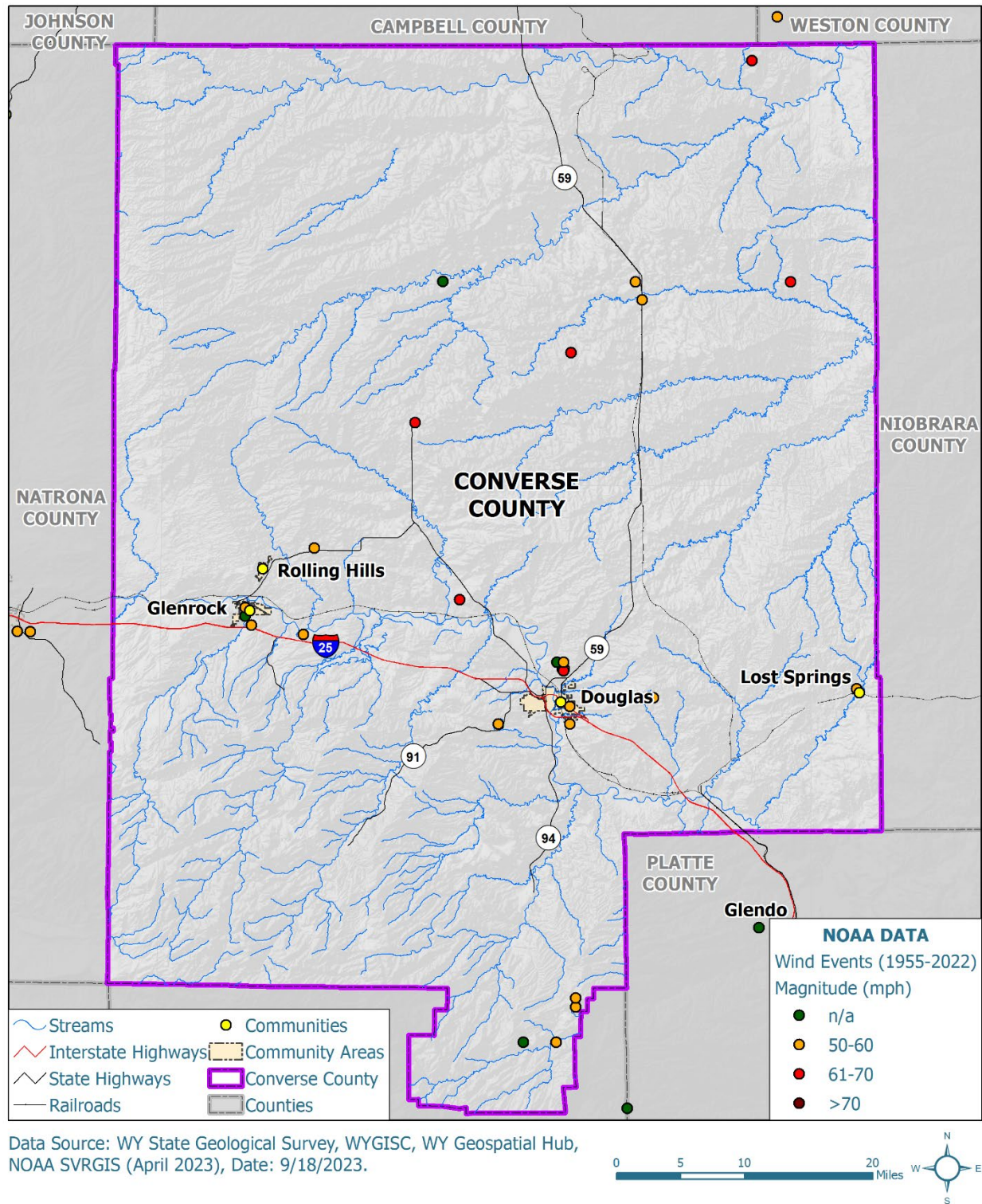
MPH	Number of Events
30-39	21
40-49	2
50-59	64
60-69	17
70-79	3
>80	0
Total	107

Table 63 Notable Wind Events

Date	Property Damages
June 2, 1999	\$5,000
High winds blew a barn roof over 100 yards 2 miles west of Douglas, WY	

Figure 21 Historical Wind Events

Converse County - Historical Wind Events



Tornado

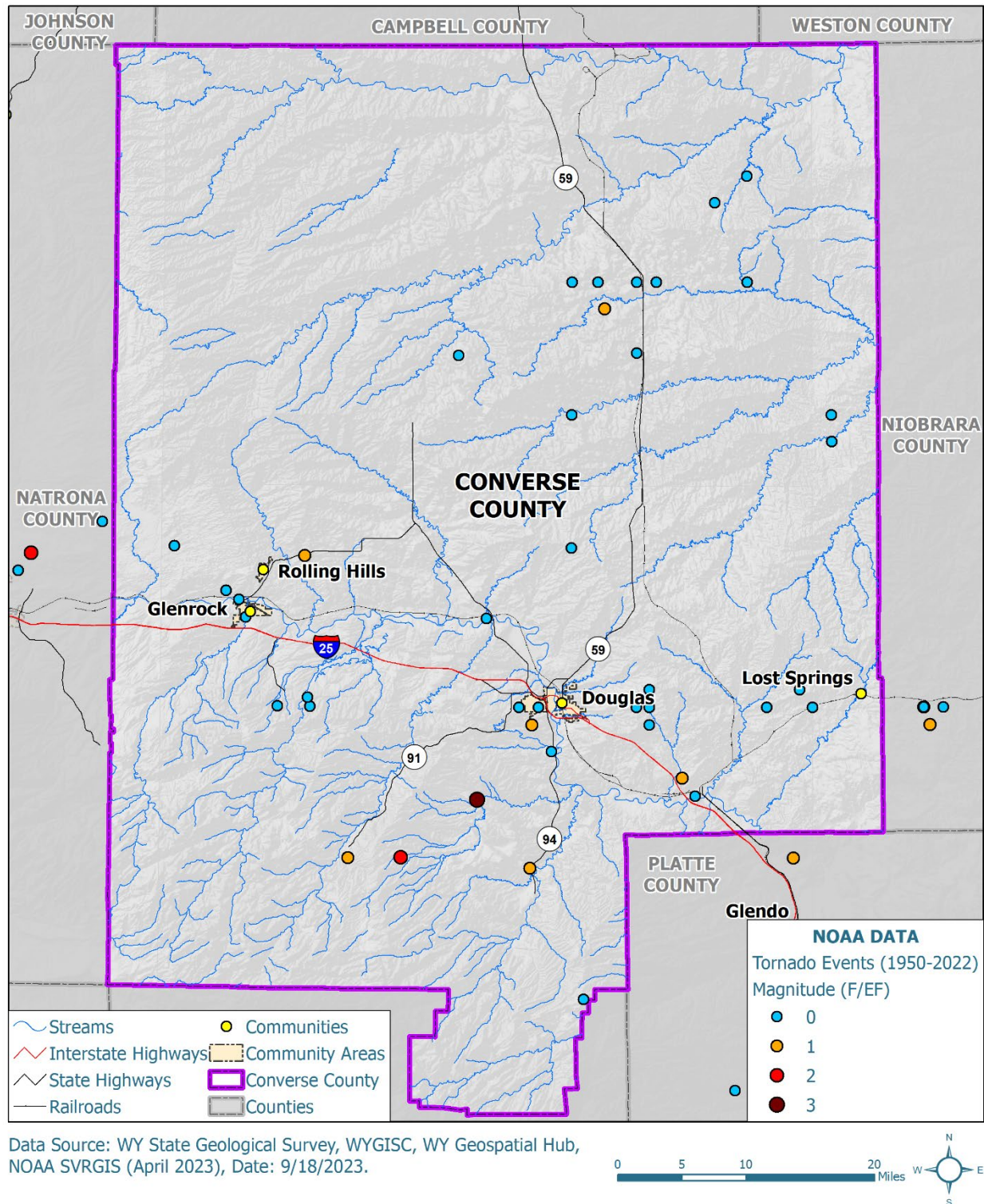
TABLE 64 presents notable tornado events in Converse County and **Figure 22** maps the location of historical tornado events within the county.

Table 64 Notable Tornado Events

Date	Fujita Scale	Injuries	Property Damages
June 14, 1965	F1	1	\$25,000
May 9, 1977	F1	0	\$2,500
June 20, 1977	F1	0	\$30
June 5, 1982	F0	0	\$30
June 5, 1982	F2	1	\$25,000
June 5, 1982	F1	3	\$25,000
June 13, 1984	F1	0	\$25,000
June 13, 1984	F0	0	\$2,500
July 25, 1995	-	0	\$30

Figure 22 Historical Tornado Events

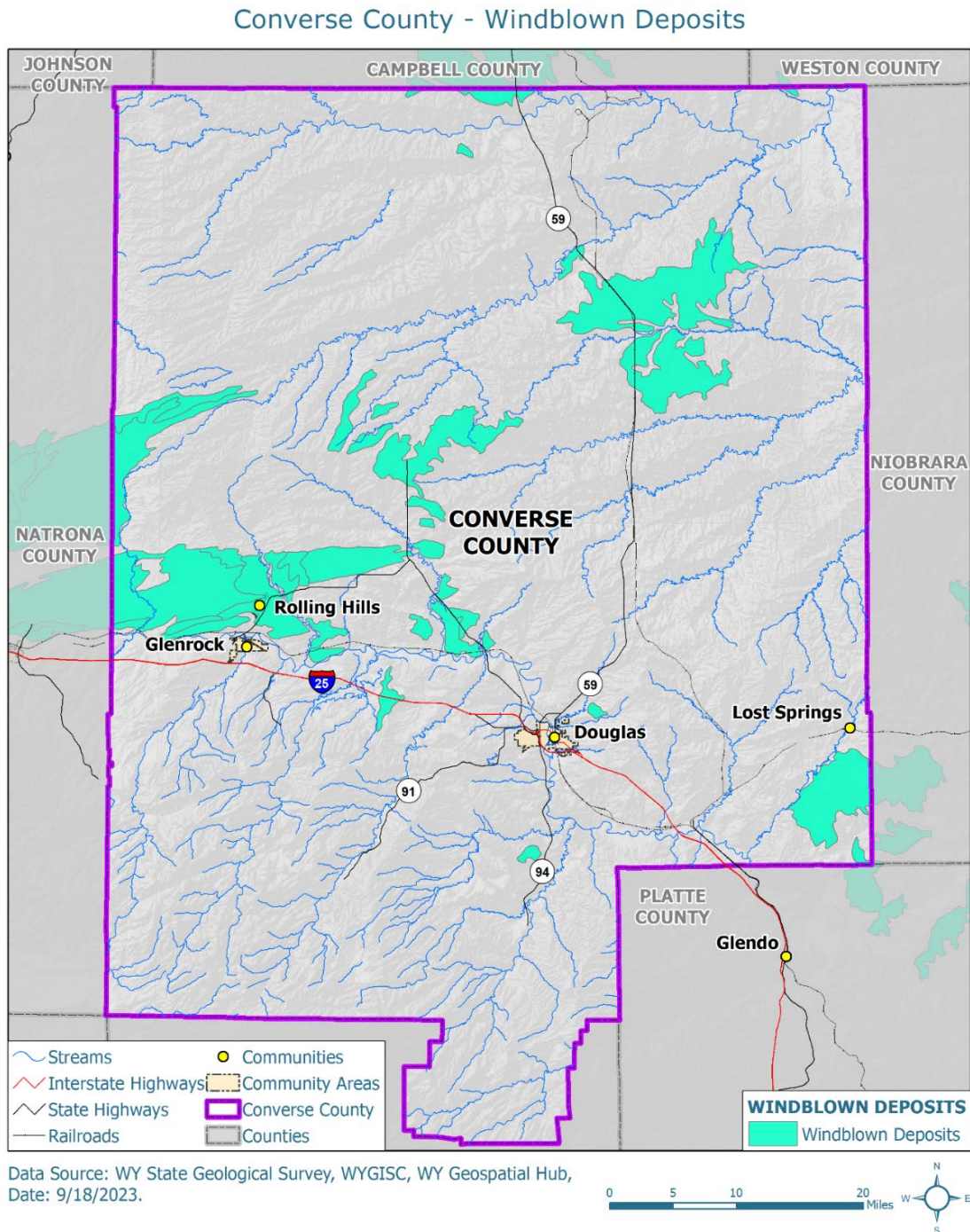
Converse County - Historical Tornado Events



LOCATION

Severe weather of any kind can occur anywhere across the county. Related to the wind hazard, **Figure 23** maps the location of windblown deposits across Converse County.

Figure 23 Windblown Deposits



EXPOSURE AND VULNERABILITY

Lifelines

Thunderstorm and Lightning

Communication, Energy, Food, Hydration, and Shelter, and Transportation are the community lifelines most vulnerable to the impacts from a thunderstorm and lightning event. A large-scale power outage resulting from a storm could stress some systems.

Hail

All infrastructure Lifelines are exposed to risks associated with hail. Energy and Communications infrastructure could be damaged. Transportation could be impacted if hail causes accidents, and injuries or deaths. Hail can also have significant impacts on Communication and Energy, as hailstorms can cut power and damage lines of communication to communities, by causing damage to power grids, power lines, and cell towers.

Wind

All community Lifelines across Converse County are vulnerable to the impacts from a severe wind event. Expected impacts to the Energy Lifeline are anticipated to pose the most risk to the county. **TABLE 65** details the Lifelines that are located in windblown deposit areas.

Table 65 Lifelines in Windblown Deposit Areas

Lifeline	Douglas	Glenrock	Lost Springs	Rolling Hills	Unincorporated	Total
Communications	-	-	-	-	-	0
Energy	-	-	-	-	1	1
Energy (Miles)	-	-	-	-	37.8	37.8
Food, Hydration, & Shelter	-	-	-	-	1	1
Health & Medical	-	-	-	-	-	-
Safety & Security	-	-	-	-	1	1
Transportation	-	-	-	-	5	5
Transportation (Miles)	-	-	-	-	37.0	37.0

Tornado

All Lifelines are exposed to tornadoes. The most common problems associated with this hazard are utility losses, which falls under the Energy and Communications Lifeline. Downed power lines can cause blackouts, leaving large areas isolated. Phone, water, and sewer systems may not function. Communication infrastructure may be affected by an event, creating issues with dispatching first responders, keeping the public informed, and requesting aid and supplies.

Tornadoes can cause significant damage to trees and power lines. The Transportation Lifeline can be impacted if debris caused by tornadoes blocks roads, incapacitates transportation corridors, isolates populations, and disrupts ingress and egress. Of particular concern are roads providing access to isolated areas and to those with access and functional needs (AFN).

Any facility that is in the path of a tornado is likely to sustain damage and medical or sheltering facilities sustaining damage could have cascading impacts for the community.

People

It can be assumed that the entire planning area is exposed to thunderstorm and lightning events. Areas of greater exposure are where higher population densities exist. Certain areas are more exposed due to geographic location and local weather patterns.

Populations with access and functional needs (AFN), including the elderly, those with low income, linguistically isolated populations, people with mobility issues, and residents living in areas that are isolated from major roads may see more impacts from severe weather events. Power outages can be life threatening to those dependent on electricity for medical support. The isolation of these populations is a significant concern. Those working outdoors or recreating in the area are more vulnerable to severe weather events.

Individuals caught in the path of severe weather who are unable to seek appropriate shelter are especially at risk. This may include individuals who are out in the open, in cars, or those who do not have access to basements, cellars, or safe rooms. Non-English speaking populations may experience a lack of warning communications.

Structures

Thunderstorm and Lightning

All buildings are considered to be exposed to thunderstorms and lightning hazards, but structures in poor condition or in particularly vulnerable locations (located on hilltops or exposed open areas) may risk the most damage. The frequency and degree of damage will depend on specific locations and the condition of the building. Building codes can help to mitigate damage from thunderstorm events, including using hail protective roof materials and strengthening of the common building component failure points.

Older buildings are often not retrofitted to newer building codes due to due cost and capacity, which is typically the case in rural areas where communities were built decades ago.

Lightning strikes can also damage county infrastructure such as power lines and cellphone towers.

Hail

All buildings are considered exposed to hail. Depending on size, hail can damage roofs, break windows, and tear up siding, all of which can lead to significant water damage. Hail also damages HVAC systems that are installed on the exterior of buildings and solar panels installed on roofs. Additionally, hail can cause damage to concrete, resulting in dents, cracks, and surface spalling that can occur on sidewalks and roads. Over time the damage caused by hail can wear down concrete, compromising its strength.

Wind

All buildings are considered exposed to the high wind. Vulnerable structures such as those in poor condition or mobiles, or in often affected locations (located on hilltops or exposed open areas) may risk the most damage. The frequency and degree of damage will depend on specific locations and behavior of the winds.

Wind pressure can create a direct and frontal assault on a structure, pushing walls, doors, and windows inward. Conversely, passing currents can create lift and suction forces that act to pull building components and surfaces outward. The effects of winds are magnified in the upper levels of multi-story structures. As positive and negative forces impact the building's protective envelope (doors, windows, and walls), the result can be roof or building component failures and considerable structural damage. **TABLE 66** presents the number and valuation of structures located in areas of windblown deposits.

Table 66 Structures in Windblown Deposit Areas

	Total Structure Count	Total Improved Structure Count	Total Structure Value	Estimated Content Value
Douglas	0	0	\$-	\$-
Glenrock	0	0	\$-	\$-
Lost Spring	0	0	\$-	\$-
Rolling Hills	171	168	\$23,910,281	\$33,250,052
Commercial	5	3	\$499,349	\$998,697
Industrial	5	4	\$1,982,678	\$5,396,189
Public	1	1	\$93,130	\$186,259
Residential	160	160	\$21,335,125	\$26,668,906
Unincorporated	305	302	\$84,223,513	\$172,432,038
Commercial	12	9	\$8,158,955	\$16,317,911
Industrial	16	16	\$30,116,317	\$97,059,291
Public	1	1	\$2,159,380	\$4,318,760
Residential	276	276	\$43,788,861	\$54,736,077
Total	476	470	\$108,133,794.40	\$205,682,089.18

Tornado

Any structure that is in the path of a tornado is likely to sustain damage and medical or sheltering facilities sustaining damage could have cascading impacts for the community. All property is vulnerable during tornado events, but properties in poor condition or manufactured housing are at the highest risk.

Natural, Historic, and Cultural Resources

Natural habitats risk major damage and destruction from hail. Large hail has the potential to damage vegetation, tree canopy, and harm animals. Crop yields can be significantly

reduced in the event of a hailstorm, and farmers will also experience damage to their physical equipment. Large hail has the possibility to cause significant bruising, injury, and even death to livestock and wild animals, disrupting agricultural yields and natural ecosystems.

Hail also can cause major damage to, and destruction of, historical buildings. Large hail can break slate and tile roofing, shatter windows, and dent copper flashings causing irreparable damage to historical buildings. Additionally, this damage can allow water to enter the building and its foundations causing water damage, but also under freezing temperatures will expand once frozen causing further fissures to the structure of a building.

Lightning strikes can be destructive to the natural resources of a community. Strikes can hit trees with the potential to cause wildfires. A 2018 study by the EPA argues that lightning strikes can have negative impacts on air quality. Lightning strikes can also damage historical buildings that may not be able to be repaired.

Habitats may be exposed to tornado risk and an event could destroy critical components of these areas. If tornadoes impact facilities that store hazardous materials, the surrounding areas may be especially vulnerable to contamination from a hazardous materials release.

Severe winds can have tremendous impacts on the natural, historic, and cultural resources of a community. Strong winds can damage buildings, especially older historic buildings, and public community spaces, such as parks and public art. The environment is highly exposed to high wind. Natural habitats risk major damage and destruction. Severe winds can strip and uproot vegetation, affecting natural ecosystems and agricultural crop yields.

Local Vulnerability

Economic impact from severe weather events is possible, as damage to property, crops, and livestock may result in losses. Events with large hail have been known to cause the death of livestock and devastate crops, which can bring considerable losses to the local and regional economy.

In addition, disruption of Lifelines and daily operations due to damaged infrastructure and facilities can cause losses. Repairing, rebuilding, or replacing critical equipment may be a slow process which could have cascading effects on businesses and the local economy. Any extended delay of returning to normal functioning has the potential to close businesses and impact industry. **TABLE 67** presents local vulnerability highlighted by local governments.

Table 67 Local Government Vulnerability

Local Government	Local Vulnerability
Douglas	Events causing road closures would prevent access to needed supplies. There are staffing concerns for EMS and hospitals should a

Local Government	Local Vulnerability
	large event occur. Primary utilities (water, sewer, electric) would be damaged causing portions of the community to be without necessary life services. Damages to the State Fair Grounds could result in a significant loss of revenue and impacts to this important community event.
Glenrock	The loss of any above ground electric, gas, and fiber systems due to an event is the greatest concern.
Rolling Hills	Homes, outbuildings, public buildings, and the water tank could be greatly impacted. Damages expected to fabric greenhouses, car ports, and unsecured items (i.e. trampolines).
Unincorporated County	The loss of any electric, gas, and fiber systems due to an event is the greatest concern. The loss of any would disrupt the ability to respond and recover.

FUTURE TRENDS IN DEVELOPMENT

Natural habitats risk major damage and destruction from hail. Large hail has the potential to damage vegetation, tree canopy, and harm animals. Crop yields can be significantly reduced in the event of a hailstorm, and farmers will also experience damage to their physical equipment. Large hail has the possibility to cause significant bruising, injury, and even death to livestock and wild animals, disrupting agricultural yields and natural ecosystems.

Hail also can cause major damage to, and destruction of, historical buildings. Large hail can break slate and tile roofing, shatter windows, and dent copper flashings causing irreparable damage to historical buildings. Additionally, this damage can allow water to enter the building and its foundations causing water damage, but also under freezing temperatures will expand once frozen causing further fissures to the structure of a building.

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Habitats may be exposed to tornado risk and an event could destroy critical components of these areas. If tornadoes impact facilities that store hazardous materials, the surrounding areas may be especially vulnerable to contamination from a hazardous materials release.

Severe winds can have tremendous impacts on the natural, historic, and cultural resources of a community. Strong winds can damage buildings, especially older historic buildings, and public community spaces, such as parks and public art. The environment is highly

exposed to high wind. Natural habitats risk major damage and destruction. Severe winds can strip and uproot vegetation, affecting natural ecosystems and agricultural crop yields.

TABLE 68 provides additional information identified by each local government.

Table 68 Local Government Population Trends

Local Government	Local Population Trends
Douglas	Population has increased in the past five years resulting in a higher number of citizens who could be negatively impacted. Additional infrastructure and structures have been built resulting in a higher number of properties that could suffer damage.
Glenrock	Any new growth would increase the town's collective vulnerability to this hazard.
Rolling Hills	Any new growth would increase the town's collective vulnerability to this hazard.
Unincorporated County	Population in the unincorporated areas of the county did not increase, nor are major increases expected in the future. Overall vulnerability has not increased, nor is expected to, due to development.

PROBABILITY OF FUTURE OCCURRENCES

The NOAA Storm Events database has recorded 47 severe weather events in the 73 years between 1950 and 2023, meaning there is an 64% chance of a severe weather event occurring annually.

The probability of future hail is also likely, as each year between June and August events occur within the region. There have been six notable hail events since 1950, which equates to an 8% annual chance. The unknowns about these events are the duration, size of the hail, and the damage that will be inflicted. Hail size varies significantly and there is no way to predict which storms will bring dangerously large hail. The majority of hail storms do not cause extensive damage, but insuring property and crops is a critical component of protecting against future events.

There have been nine notable tornadoes since 1950, which equates to a 12% annual chance.

WILDFIRE

PREVIOUS OCCURRENCES

There have been many wildfire events in Converse County **TABLE 69** presents those over 1,000 acres from 1980-2015. Additionally, **Figure 24** maps the historical wildfire events in the county.

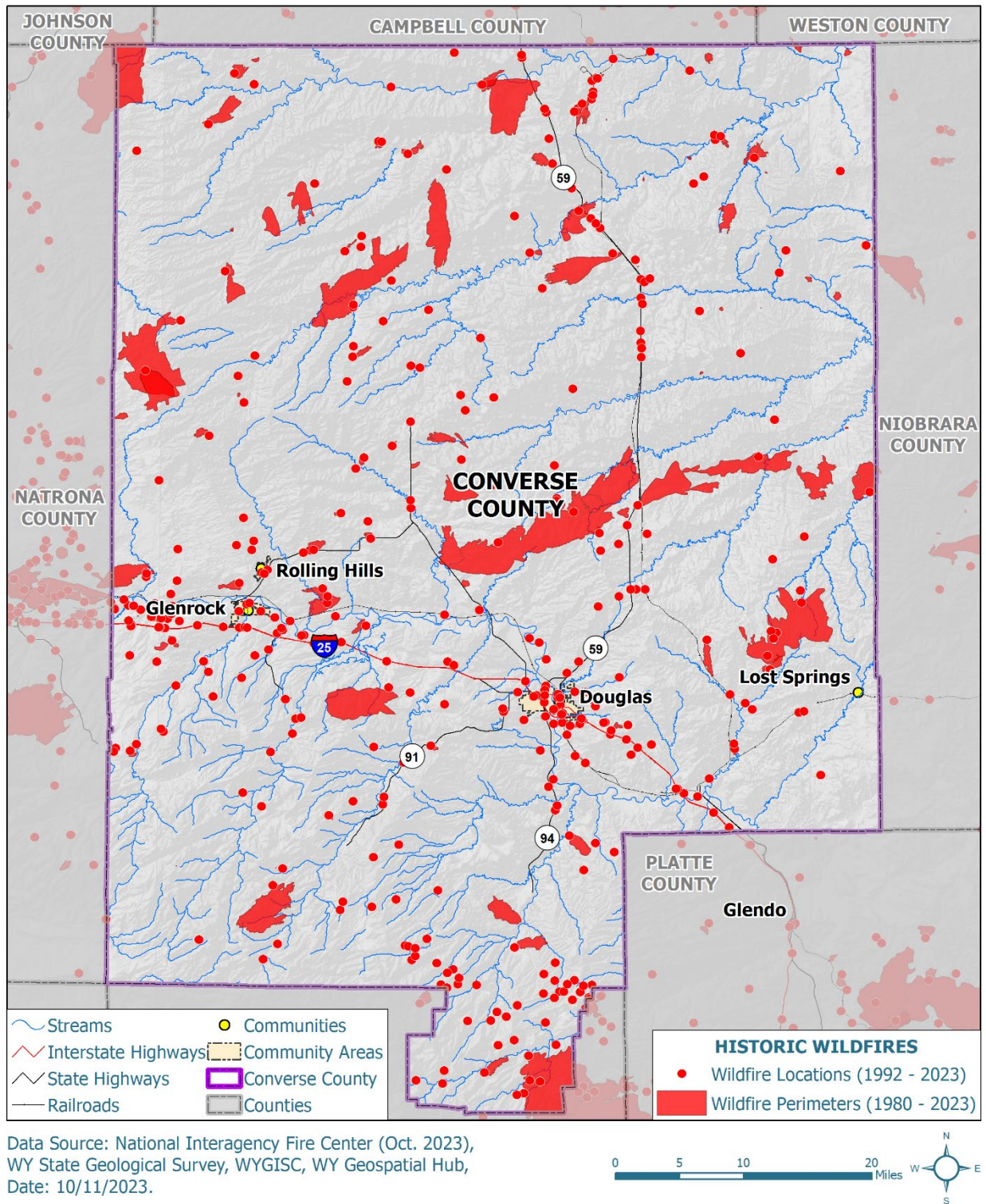
Table 69 Wildfires over 1,000 acres in Converse County: 1980-2015

Fire Name	Acres Burned	Cause
Boner	53,930	Natural
Orpha	25,093	Human
Hensel	14,855	Natural
Hensel	14,855	Natural
Twenty Mile	11,083	Natural
Ormsby	11,042	Natural
Antelope	10,000	Human
Walker	10,000	Human
Antelope	10,000	Human
Henry's	9,500	Natural
Little boxelder	5,882	Natural
Carson	5,670	Human
Carson Fire	5,670	Human
Russells Camp Fire	4,905	Natural
Bixby	3,030	Human
Harshman	2,128	Natural
Cheyenne River	2,000	Natural
Ugly	1,827	Natural
Olmstead D	1,520	Natural
Ross #1	1,160	Natural
Lance Creek	1,116	Natural

Fire Name	Acres Burned	Cause
Sand Creek	1,044	Natural
Lake Creek	1,034	Natural
Wagonhound	1,010	Human

Figure 24 Historic Wildfires

Converse County - Historic Wildfires



LOCATION

Figure 25 illustrates the wildfire risk across Converse County additionally, **Figure 26** shows the scale of wildfire intensity across Converse County.

Figure 25 Wildfire Risk

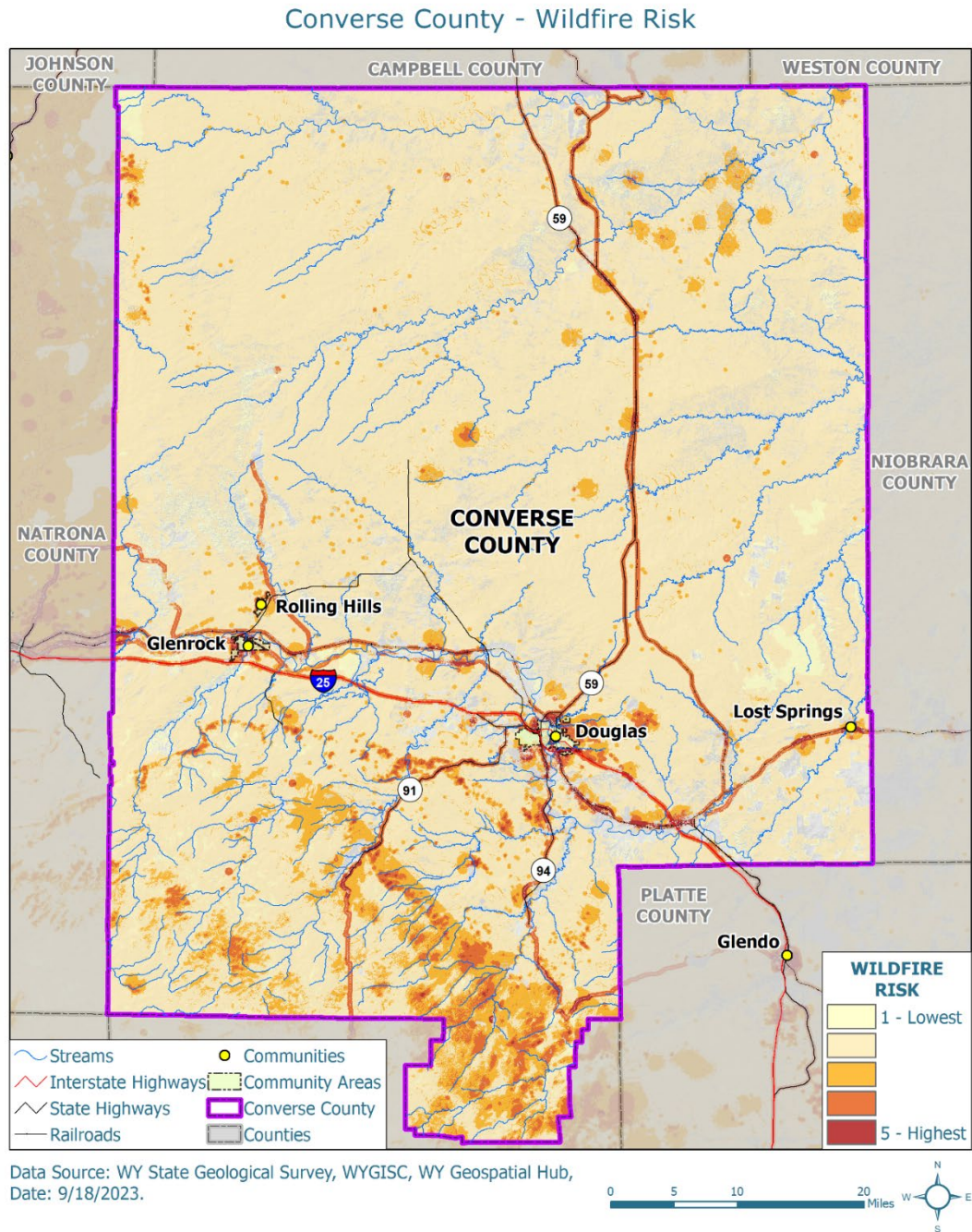
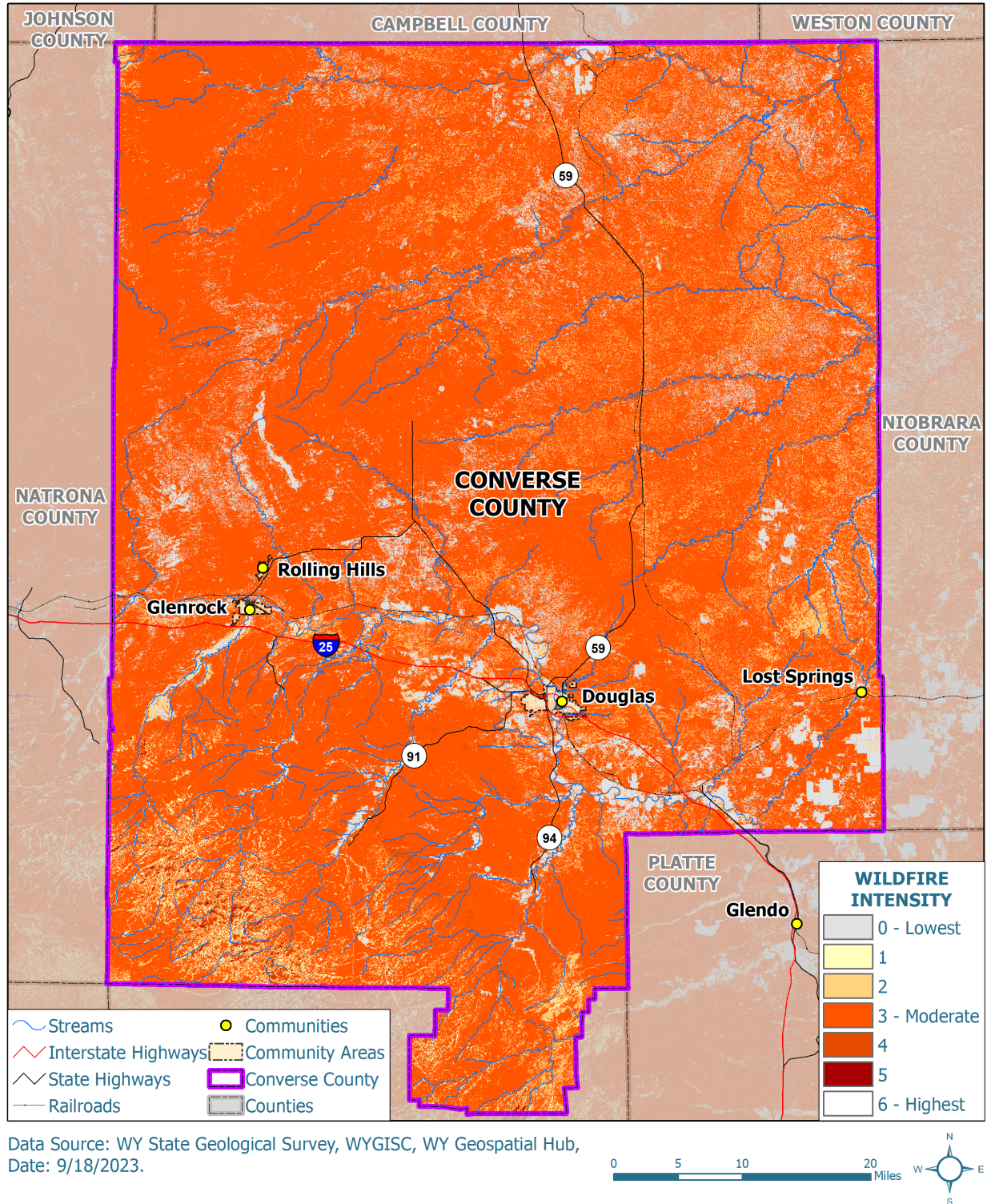


Figure 26 Wildfire Intensity

Converse County - Wildfire Intensity



EXPOSURE AND VULNERABILITY

Lifelines

All community Lifelines across Converse County are vulnerable to the impacts from wildfire events. Multiple Lifelines are at risk due to wildfire, from a structural standpoint as well as resource management. While large-scale fires are rare for the county, each fire can tax countywide resources, impacting public safety and government services. Fires can create conditions that block or prevent ingress / egress and can isolate residents and emergency service providers.

Energy infrastructure can be impacted as power line poles are made of wood and susceptible to burning. Pipelines carrying fuel can be damaged, potentially leading to a catastrophic explosion and interruption of resource delivery. Any Lifeline infrastructure with wood frame construction is especially vulnerable during wildfire events. Most roads and railroads would be without damage except in the worst scenarios.

Health & Medical services as well as Food, Water, & Shelter may be impacted if there is a need to evacuate the public and citizens or first responders need medical care.

TABLE 70 details the Lifelines that are located in low and moderate wildfire intensity areas.

Table 70 Lifelines in Low and Moderate Wildfire Intensity Areas

Lifeline	Douglas	Glenrock	Lost Springs	Rolling Hills	Unincorporated	Total
Low Hazard						
Communications	-	-	-	-	-	0
Energy	-	-	-	-	-	0
Energy (Miles)	0.2	-	-	-	25.5	25.7
Food, Hydration, & Shelter	1	-	-	-	-	1
Health & Medical	-	-	-	-	-	0
Safety & Security	-	-	-	-	-	0
Transportation	-	-	-	-	27	27
Transportation (Miles)	-	-	0.1	-	29.6	29.7
Moderate Hazard						

Lifeline	Douglas	Glenrock	Lost Springs	Rolling Hills	Unincorporated	Total
Communications	-	-	-	-	3	3
Energy	-	-	-	-	9	9
Energy (Miles)	0.8	-	-	-	373.7	374.5
Food, Hydration, & Shelter	1	-	-	-	6	7
Health & Medical	-	-	-	-	-	0
Safety & Security	-	-	-	-	2	2
Transportation	5	-	-	-	140	145
Transportation (Miles)	1.1	0.6	0.3	-	231.9	233.9

People

Smoke and air pollution from wildfires can be a severe health hazard, especially for sensitive populations, including children, the elderly, and those with respiratory and cardiovascular diseases. Smoke generated by wildfire consists of visible and invisible emissions that contain particulate matter (soot, tar, water vapor, and minerals), gases (carbon monoxide, carbon dioxide, nitrogen oxides), and toxics (formaldehyde, benzene). Emissions from wildfires depend on the type of fuel, the moisture content of the fuel, the efficiency (or temperature) of combustion, and the weather. Public health impacts associated with wildfire include difficulty in breathing, odor, and reduction in visibility.

Wildfire may also threaten the health and safety of those fighting the fires. First responders are exposed to the dangers from the initial incident and the after-effects from smoke inhalation and heat stroke.

Structures

TABLE 71 summarizes the building exposure to wildfire risk by jurisdiction. The data classifies wildfire risk ranging from one to five, with five equating to the most statewide risk. Within each jurisdiction, residential properties comprise the majority of buildings exposed to moderate wildfire risk. The total value of properties exposed to wildfire risk is \$1,107,309,117. While this analysis attempts to quantify those structures at most risk across the county, it should be noted that all property is potentially vulnerable to wildfire.

Table 71 Structures in Moderate Wildfire Intensity Areas

	Total Structure Count	Total Improved Structure Count	Total Structure Value	Estimated Content Value
Douglas	526	520	\$174,678,597	\$275,545,890
3				
Commercial	62	59	\$54,772,358	\$99,506,216
Industrial	17	17	\$12,850,397	\$40,277,948
Public	6	6	\$2,589,232	\$5,178,465
Residential	441	438	\$104,466,609	\$130,583,261
Glenrock	355	355	\$86,533,893	\$129,405,878
3				
Commercial	19	19	\$11,948,828	\$23,897,655
Industrial	6	6	\$4,509,802	\$14,194,251
Public	5	5	\$2,475,371	\$5,998,874
Residential	324	324	\$66,512,915	\$83,141,144
4				
Commercial	1	1	\$1,086,977	\$2,173,954
Lost Spring	2	2	\$569,818	\$712,272
Residential	2	2	\$569,818	\$712,272
Rolling Hills	135	135	\$19,654,311.70	\$27,930,089.78
Commercial	3	3	\$499,349	\$998,697
Industrial	4	4	\$1,982,678	\$5,396,189

	Total Structure Count	Total Improved Structure Count	Total Structure Value	Estimated Content Value
Public	1	1	\$93,130	\$186,259
Residential	127	127	\$17,079,155	\$21,348,944
Unincorporated	2,950	2,908	\$825,872,498	\$1,546,731,216
3				
Commercial	238	215	\$161,520,997	\$324,848,050
Industrial	131	126	\$198,633,086	\$634,619,603
Public	13	6	\$5,004,897	\$10,009,793
Residential	2,558	2,551	\$456,382,617	\$570,478,271
4				
Commercial	3	3	\$1,815,828	\$3,631,656
Residential	6	6	\$2,396,193	\$2,995,241
5				
Residential	1	1	\$118,881	\$148,601
Total	3,968	3,920	\$1,107,309,117	\$1,980,325,345

Natural, Historic, and Cultural Resources

In addition to stripping the land of vegetation and destroying forest resources, large, intense fires can harm the soil, waterways, and the land itself. Soil exposed to intense heat may lose its capability to absorb moisture and support life. Exposed soils erode quickly and enhance siltation of waterways; thereby enhancing flood potential, harming aquatic life, and degrading water quality. Lands stripped of vegetation are also subject to increased debris flow.

Fire is a natural and critical ecosystem process in most terrestrial ecosystems, dictating in part the types, structure, and spatial extent of native vegetation. However, wildfires can cause severe environmental impacts:

- **Damaged Fisheries** – Critical fisheries can suffer from increased water temperatures, sedimentation, and changes in water quality.
- **Soil Erosion** – The protective covering provided by foliage and dead organic matter is removed, leaving the soil fully exposed to wind and water erosion. Accelerated soil erosion can occur, causing landslides and threatening aquatic habitats.
- **Spread of Invasive Plant Species** – Non-native woody plant species frequently invade burned areas. When weeds become established, they can dominate the plant cover over broad landscapes, and become difficult and costly to control.
- **Disease and Insect Infestations** – Unless diseased or insect-infested trees are swiftly removed, infestations and disease can spread to healthy forests and private lands. Timely active management actions are needed to remove diseased or infested trees.
- **Destroyed Endangered Species Habitat** – Catastrophic fires can have devastating consequences for endangered species.
- **Soil Sterilization** – Topsoil exposed to extreme heat can become water repellant, and soil nutrients may be lost. It can take decades or even centuries for ecosystems to recover from a fire. Some fires burn so hot they can sterilize the soil.

Many ecosystems are adapted to historical patterns of fire occurrence. These patterns, called “fire regimes,” include temporal attributes (e.g., frequency and seasonality), spatial attributes (e.g., size and spatial complexity), and magnitude attributes (e.g., intensity and severity), each of which have ranges of natural variability. Ecosystem stability is threatened when any of the attributes for a given fire regime diverge from its range of natural variability.

Local Vulnerability

Wildfire can impact the economy due to potential damage to property, crops, and livestock. There may be direct costs due to losses and indirect costs for the loss of work that comes from harvest and livestock transport. Overhead that may result during repair or reconstruction of properties may also be an indirect cost.

If roads are closed or areas are evacuated due to a fire, transport may be limited, and businesses may have to close. While this can typically be a short-term impact, prolonged wildfires can have a large impact on the operations of a community and its economy.

TABLE 72 provides additional vulnerability information identified by each local government.

Table 72 Local Government Vulnerability

Local Government	Local Vulnerability
Douglas	There are staffing concerns for EMS and hospitals should a large event occur. Primary utilities (water, sewer, electric) would be damaged causing portions of the community to be without necessary life services. Facilities hosting activities could be lost due to wildfire, resulting in a loss of income for the community and the loss of social activities.
Glenrock	The town experiences high winds during wildfire season that can exacerbate conditions. All structures in the WUI.
Rolling Hills	The town is surrounded by prairie and a wildfire event could impact the entire community, specifically losses to homes, people and animals, outbuildings, livestock, and property.
Unincorporated County	The Esterbrook community is the area where an event would cause the most concern.

FUTURE TRENDS IN DEVELOPMENT

As some of these areas are at a higher risk to wildfire and located in the WUI, future development has the potential to greatly increase the risk to this hazard.

While the risk of wildfire on public land is generally understood, much of the adjacent private land is equally at risk. Private lands adjoining public lands are becoming increasingly valued for their scenic beauty, solitude, and access to recreation opportunities. As development in these areas continue to increase, the risk to lives, property, and resources correspondingly increases.

TABLE 73 provides additional information identified by each local government.

Table 73 Local Government Population Trends

Local Government	Local Population Trends
Douglas	Population has increased in the past five years resulting in a higher number of citizens who could be negatively impacted. Additional infrastructure and structures have been built resulting in a higher number of properties that could suffer damage.
Glenrock	New growth would likely occur in Sunup Ridge and a high wind/fire event could affect this area.

Local Government	Local Population Trends
Rolling Hills	Population did not increase, nor are major increases expected in the future. Overall vulnerability has not increased, nor is expected to, due to development.
Unincorporated County	Population in the unincorporated areas of the county did not increase, nor are major increases expected in the future. Overall vulnerability has not increased, nor is expected to, due to development.

PROBABILITY OF FUTURE OCCURRENCES

Wildfires are likely to occur in the region, as small fires happen every year. The greater concern is these fires growing quickly and damaging more acreage. With drought experienced often throughout the region, the weather getting hotter for longer durations, and an abundance of fuel, especially beetle kill pine trees, fires have the potential to occur easily and spread rapidly before they are spotted. Since fires

can be human caused, lightning ignited, or the possibility of forest management activities getting out of control, there are numerous ways an accident or random occurrence could ignite a conflagration.

There have been 24 occurrences of events larger than 1,000 acres since 1980. This equates to a 0.55% annual chance of these sized events.

WINTER STORM

PREVIOUS OCCURRENCES

There have been numerous severe winter weather events recorded in NOAA's Storm Events database, however no event has caused property damages or direct deaths and / or injuries. A heavy snow event on October 22, 2020 caused one indirect death and another winter weather event on May 8, 2019 cause 2 indirect injuries.

LOCATION

Severe winter weather events occur across the entire county.

EXPOSURE AND VULNERABILITY

Lifelines

Severe winds, downed trees, and ice accumulation can create serious impacts on Energy and Communications infrastructure, including power lines and above-ground communication lines. Transportation Lifeline failures, due to loss and interruption of roadway capacity, are a secondary hazard often most associated with severe winter weather.

People

The populations most likely to suffer the negative effects of severe winter weather events are motorists who may be stranded, those participating in outdoor recreation activities, and those with AFN.

AFN populations face isolation and exposure during severe winter weather events and could suffer more secondary effects of the hazard. Power outages can be life threatening to those dependent on electricity for medical equipment and those sensitive to temperature extremes.

The use of fuel-burning heaters indoors and the potential of poisoning and asphyxiation also poses a significant risk to the population of the county.

Low income and residents living below the poverty line are susceptible to the impacts of severe winter weather. For these community members, heating in the case of extreme cold temperatures can be financially inaccessible. Additionally, residents may not have the option to remain at home during an extreme winter weather event and can place themselves in danger traveling on dangerous road conditions.

Furthermore, those in the community who do not have access to a vehicle and rely on public transportation can be vulnerable to health impacts of extreme cold temperatures as well as the possibility of hazardous road conditions while using public transportation.

Structures

The freezing of structure water lines, and resulting breaks and flooding, is one of the most damaging impacts from severe cold spells. Freezing of power and communication lines can cause them to break, disrupting electricity and communication. Loss of electricity and phone connection would leave certain populations isolated, as residents would be unable to call for assistance. Extreme cold can disrupt or impair communications facilities.

Primary transportation failures, due to loss and interruption of roadway capacity, are a secondary hazard often most associated with severe winter weather. Roads may become impassable due to ice or snow accumulation which create dangerous driving conditions. Availability of county roads to move people and supplies throughout the region is also a concern.

These types of events can significantly impact the transportation system and the availability of public safety services. Of particular concern are roads providing access to isolated areas and to those with access and functional needs (AFN). Prolonged obstruction of major routes can disrupt the shipment of goods and other commerce.

All buildings in the county are exposed to severe winter weather, but structures in poor condition or in particularly vulnerable locations (located on hilltops or exposed open areas) may risk the most damage. Those that are located under or near overhead lines, or near large trees may be vulnerable to falling ice or may be damaged in the event of a tree or limb collapse. The frequency and degree of damage will depend on specific locations.

Natural, Historic, and Cultural Resources

Natural habitats risk major damage and destruction from severe winter weather. Heavy snowfall and high winds can collapse trees. Freezing temperatures can kill crops, vegetation, and animals. Mass die offs of wildlife are possible as snow covers vegetation and freezes as temperatures drop. These events alter the ecosystem and hunting quotas in the following season. Livestock are also vulnerable to severe winter weather without proper shelter.

Local Vulnerability

Negative economic impact from severe winter weather is possible. Damage to property, crops, and livestock can result in costs, both direct and indirect. Direct costs for the value lost and indirect costs for the loss of work that comes from harvest and livestock transport, as well as the overhead that may result during repair or reconstruction of properties.

Short term impacts may occur if roads and businesses must close, affecting transport and commerce which can have a negative effect for an entire region.

TABLE 74 provides additional vulnerability information identified by each local government.

Table 74 Local Government Vulnerability

Local Government	Local Vulnerability
Douglas	Severe winter storms causing road closures would prevent supplies from getting to the community. Some citizens would not be able to leave their homes to get necessary supplies. Vulnerable populations may not be able to keep their homes heated, due to impacts to gas and electric services, resulting in frozen pipes and loss of water.
Glenrock	The elderly / disabled populations are the most concern. Power outages could impact all other systems.
Rolling Hills	The greatest concern relates to access issues to healthcare, groceries, and supplies as the town does not have local businesses providing these services.
Unincorporated County	The loss of any electric, gas, and fiber systems due to an event is the greatest concern. The loss of any would disrupt the ability to respond and recover.

FUTURE TRENDS IN DEVELOPMENT

All future development can be affected by severe winter weather events. The county's vulnerability is increasing through time as the population increases. The ability to mitigate impacts lies in consistent enforcement of codes and regulations for new construction.

Public education is critical as new residents move to the area. Many may not have experienced the severity of winter weather events seen in the county and will not know how to be prepared. Educating the population on these hazards and how to minimize risk from events will prove beneficial for the county.

TABLE 75 provides additional information identified by each local government.

Table 75 Local Government Population Trends

Local Government	Local Population Trends
Douglas	Population has increased in the past five years resulting in a higher number of citizens who could be negatively impacted. Additional infrastructure and structures have been built resulting in a higher number of properties that could suffer damage.
Glenrock	All new construction will follow the latest building codes, which should mitigate any increases to vulnerability.
Rolling Hills	Population did not increase, nor are major increases expected in the future. Overall vulnerability has not increased, nor is expected to, due to development.
Unincorporated County	Population in the unincorporated areas of the county did not increase, nor are major increases expected in the future. Overall vulnerability has not increased, nor is expected to, due to development.

PROBABILITY OF FUTURE OCCURRENCES

Severe winter weather events are expected to continue in the future. Between 1950 and 2023 NOAA's Storm Events database records 222 severe winter weather events, meaning there is 100% chance of a severe winter weather event annually.

EARTHQUAKE HAZUS RISK REPORT

ADOPTIONS

NATRONA COUNTY ANNEX

COUNTY PROFILE

Natrona County has a semi-arid climate with hot summers and cold winters. Average high temperatures in the summertime range between 82 and 89 degrees Fahrenheit, while overnight lows can dip to 40 to 50 degrees. Winters in Natrona usually bring an average of 28 inches of snowfall each year, along with temperatures that hover around 20 to 30 degrees. During the spring and fall seasons, temperatures typically stay between 49 and 66 degrees on average. Due to its inland location, there are no major weather patterns that influence the county's climate other than occasional snowstorms during winter months. The county also experiences high winds throughout the year.

TABLE 76 presents the 2020 population baseline and state projections for future years. Overall the county is forecast to grow 5.4% by the year 2040. **FIGURE 27** provides an overview map of the county.

Table 76 Population Forecasts⁶

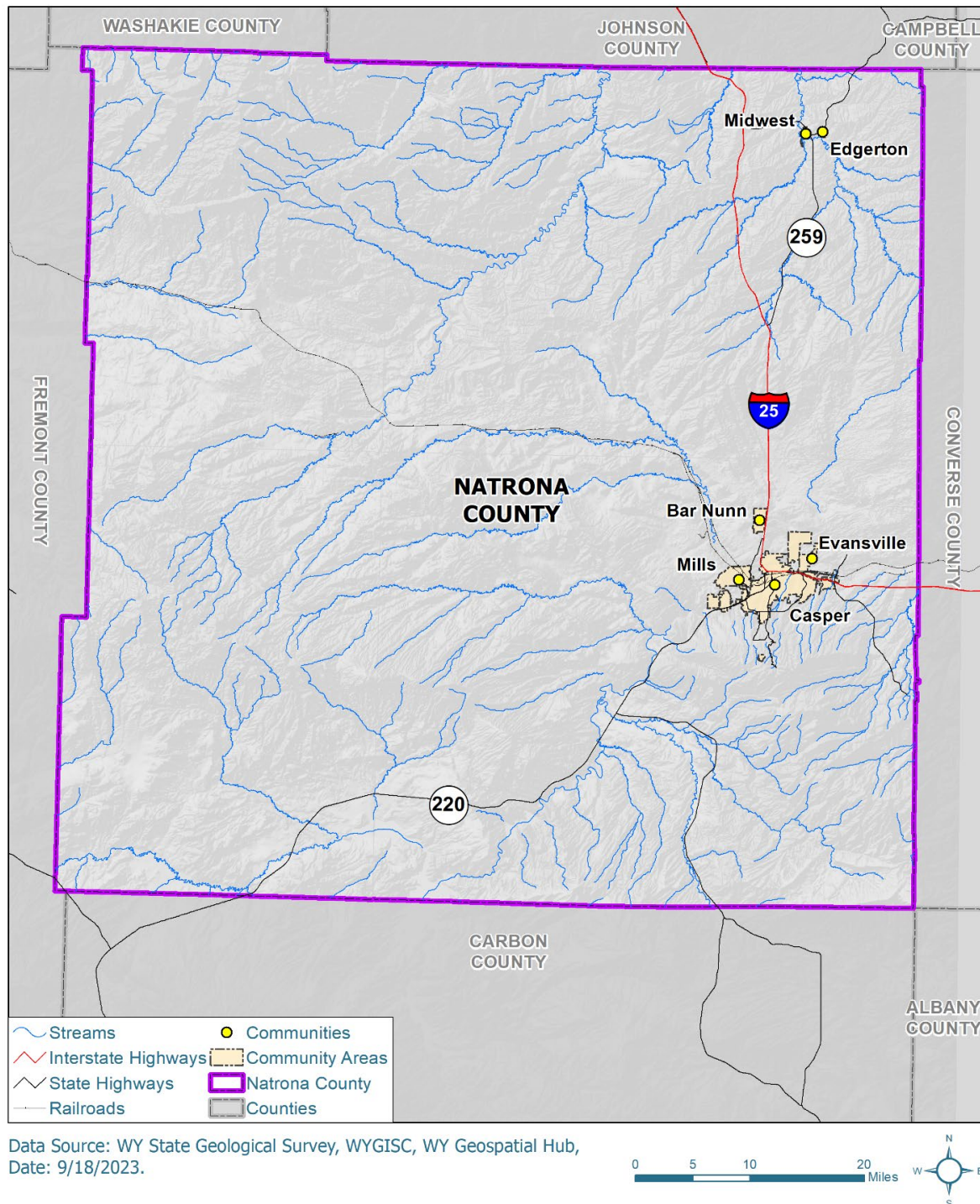
Jurisdiction	2020	2025	2030	2040
Natrona County	78,810	79,350	80,660	83,090
City of Casper	57,502	57,896	58,852	60,625
City of Mills	4,203 ⁷	3,766	3,829	3,944
Town of Bar Nunn	2,668	2,686	2,730	2,812
Town of Evansville	2,869	2,889	2,937	3,025

⁶ Wyoming Department of Administration & Information: Economic Analysis Division

⁷ U.S. Census Bureau

Figure 27. County Overview

Natrona County - Location Map



UNDERSERVED COMMUNITIES AND SOCIALLY VULNERABLE POPULATIONS

Disadvantaged communities are often disproportionately impacted by hazards because they are in areas historically underserved and underinvested and reside in areas more prone to natural disasters. The degree to which a community exhibits certain social vulnerability conditions, including high poverty, low percentage of vehicle access, or crowded households, may also affect that community's ability to prepare for, respond to, and recover from disaster events.

Social vulnerability contributes to the impacts on those in the community who experience access and functional needs (AFN) during disasters. AFN are the factors which may limit a person, in an emergency, in their ability to communicate, maintain their health, act independently, access adequate transportation, and acquire necessary services and support. These needs encompass a variety of social and economic factors, which are critical to consider when developing inclusive community plans.

Throughout the planning process, it was important for the county to be cognizant of those communities and populations who may be disproportionately impacted by disaster events. The following pages present overviews of national indexes that assist with the identification of those underserved communities and socially vulnerable populations across Natrona County.

To inform this plan, it was important that the HMPC understand the locations of the county's socially vulnerable and underserved communities. There are a number of relevant data sets and indexes available as of this plan's writing. To ensure all communities were taken into account, the HMP references three separate indexes to present the broadest view of potential vulnerability across the county's population. **FIGURE 28** presents the national [social vulnerability index](#) (SVI) from the Center for Disease Control's (CDC) Agency for Toxic Substances and Disease Registry (ATSDR). **FIGURE 29** maps disadvantaged communities, as defined by the United State Council on Environmental Quality's [Climate and Economic Justice Screening Tool](#) (CEJST). Lastly, **FIGURE 30** presents the results of [Headwater Economics'](#) analysis of rural capacity. Overall, the county is less vulnerable than other communities across our Nation. The main areas of higher vulnerability are located around the Mills and Northwest Casper areas.

Figure 28 Social Vulnerability Index

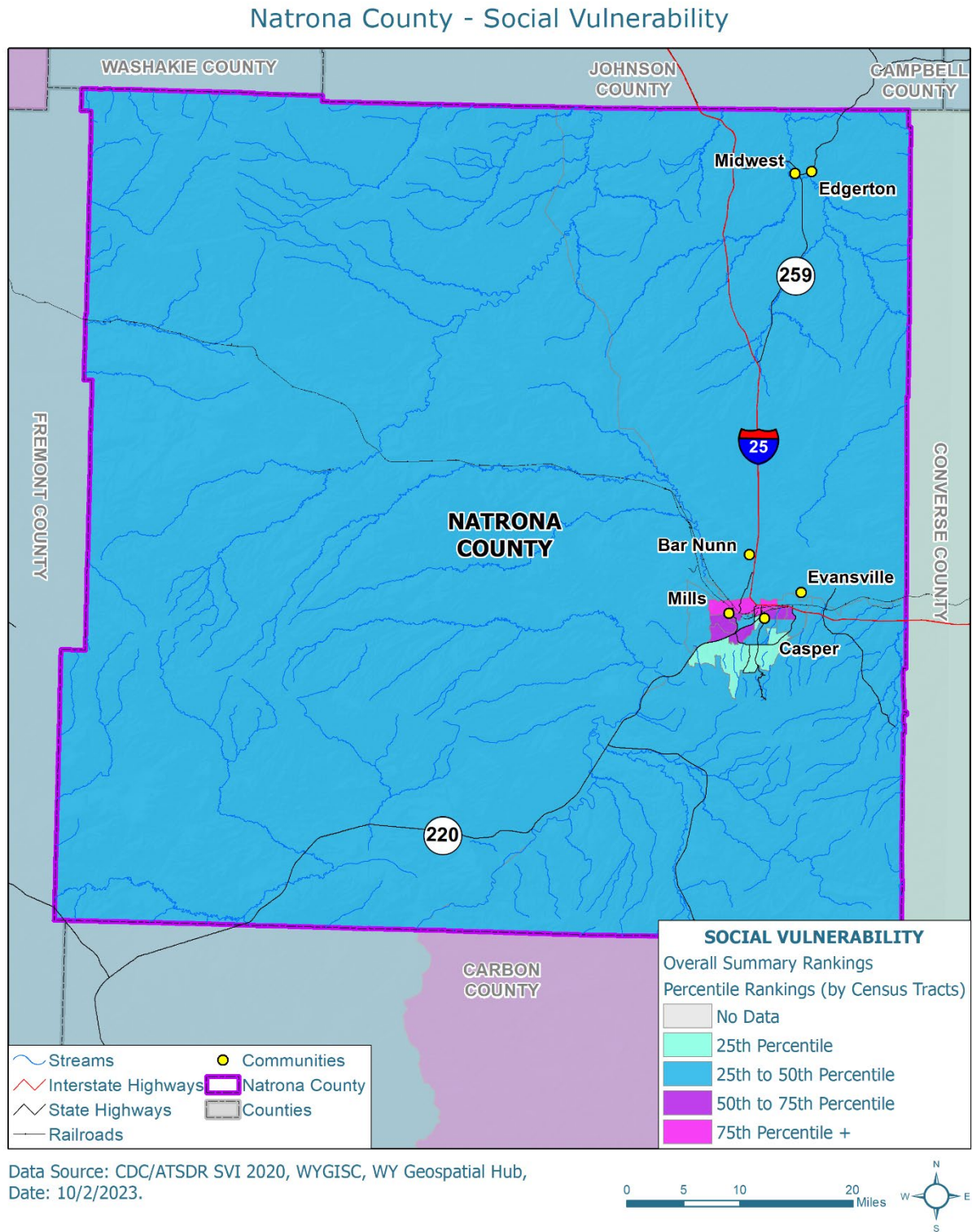
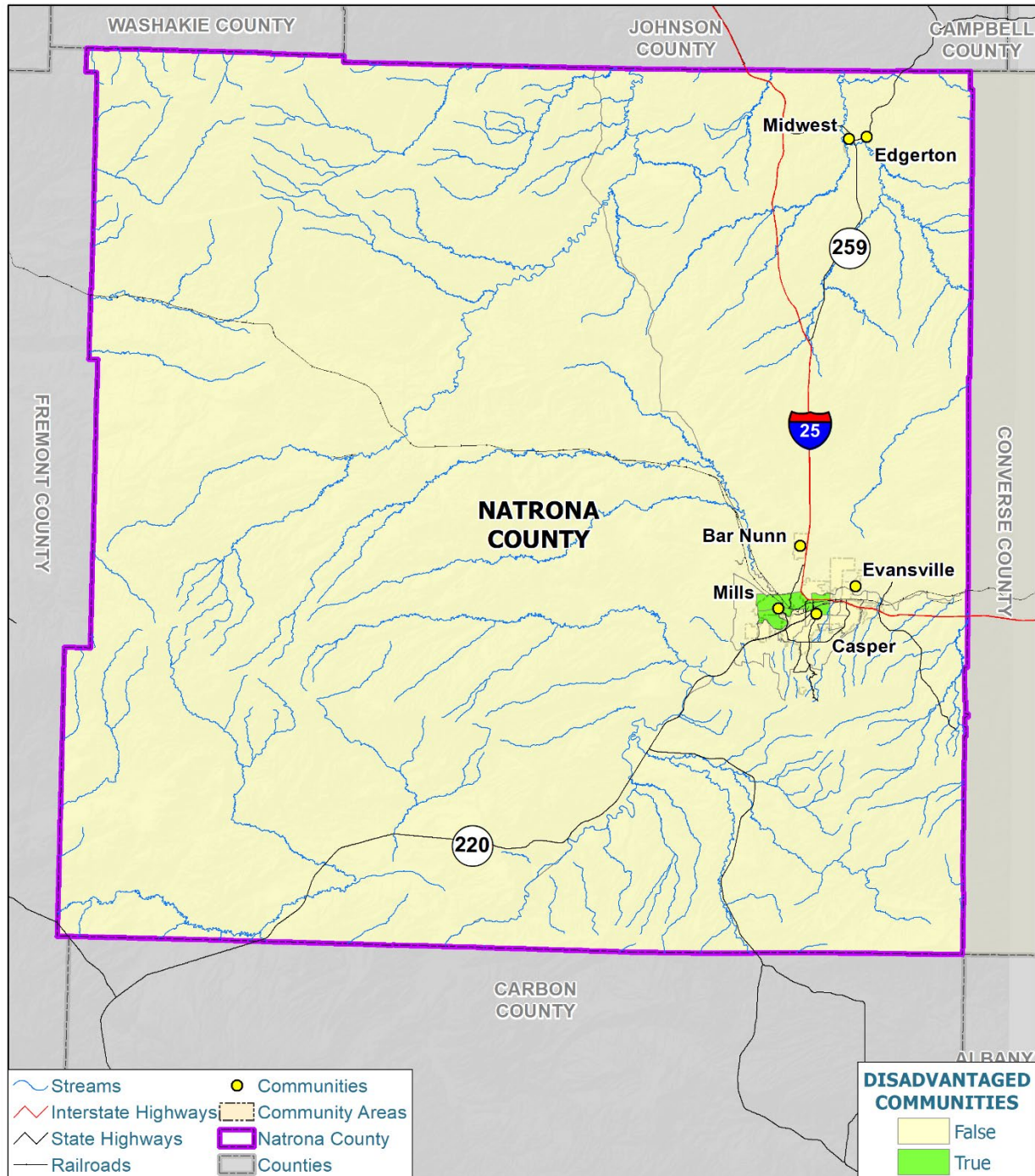


Figure 29 Disadvantaged Communities

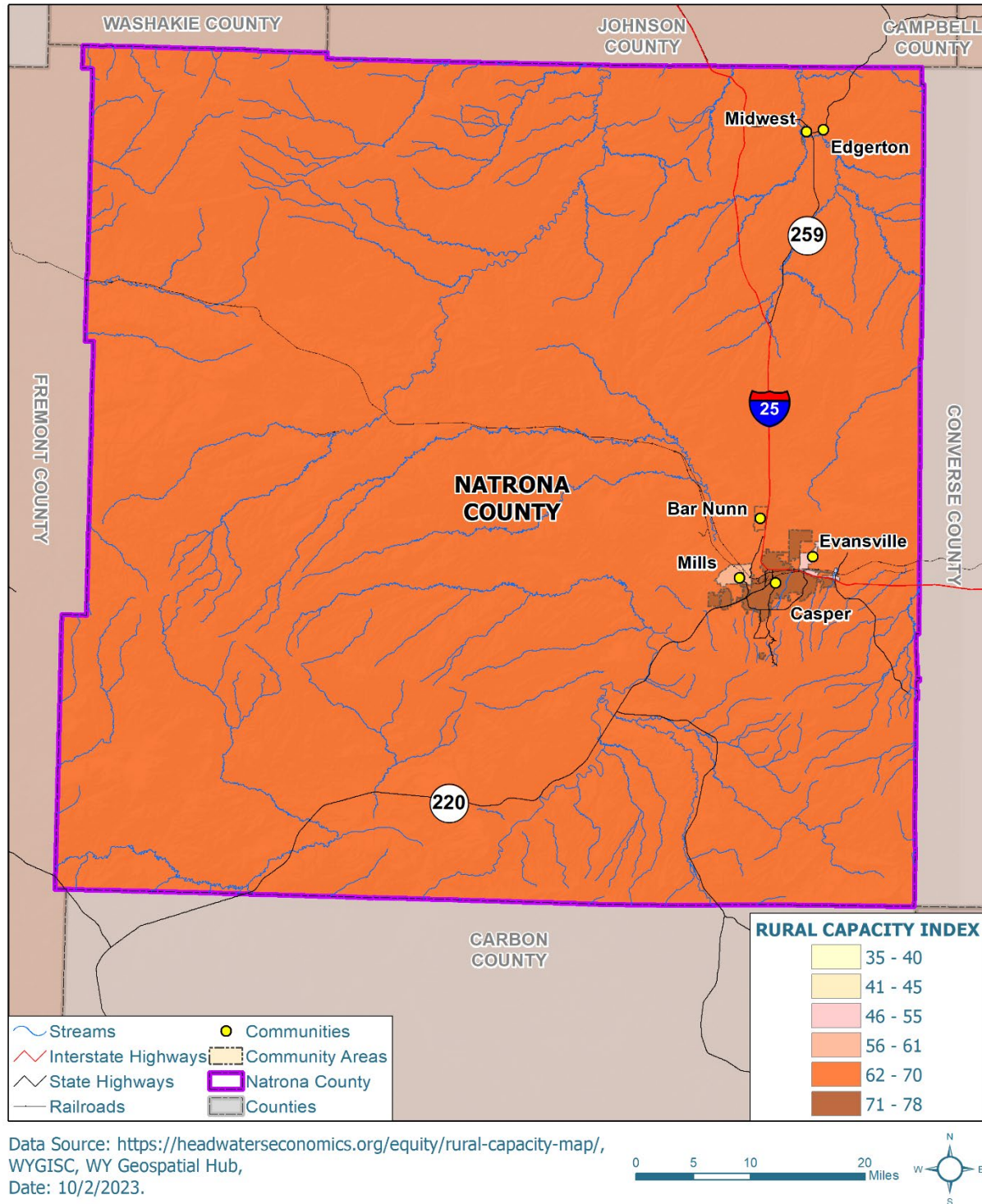
Natrona County - Disadvantaged Communities



Data Source: CEJEST 11/22/2022 (<https://screeningtool.geoplatform.gov/en/>), WYGISC, WY Geospatial Hub, Date: 10/2/2023.

Figure 30 Rural Capacity Index

Natrona County - Rural Capacity Index



MITIGATION STRATEGY

2019 MITIGATION ACTIONS

As part of the plan update process, local participating governments reviewed and reported on the status of all mitigation actions (i.e. – projects) identified in the 2019 HMP. **TABLE 77** provides a summary of progress made towards making Natrona County more resilient to the impacts of hazards.

As important as acknowledging projects that were accomplished, actions in a community that are on-going are often overlooked as examples of positive implementation of the mitigation strategy. On-going projects are those without a timeline and that may not have deliverables that bring closure to a project but rather continued milestones. Examples include education and outreach efforts, maintenance activities, continual work on updating plans and organizational coordination, and constant work to improve processes and infrastructure.

Some 2019 actions did not see any progress made, but a portion of these projects retain community support and are being carried forward in this 2024 HMP (“No Progress – Continue Action”).

Outside of those actions identified in the previous HMP, local governments did report on other mitigation successes that were accomplished since 2019. A summary of these efforts included:

- The City of Casper’s North Platte River Restoration activities.
- The Casper Mountain Fire District’s progress in creating fire breaks through the previously implemented FireWise program.
- The City of Mills’ fuel reduction in areas vulnerable to wildfire risk (see photo).



Table 77 Past 2019 Mitigation Action Reporting

ID	Lead Jurisdiction	Hazard	Project	Priority	2024 Status	2024 Comments
MJ-1	Natrona County	All Hazards	Alert and Warning System	H	On-Going	Last siren installed 2011, 36 total in county. Received 200k for new sirens from 5cent fund for FY 24 & FY 26
MJ-2	Natrona County	All Hazards	Develop a Ready, Set, Go Program for All Hazards	L	On-going	In 2022 all Fire agencies and EM agreed on Ready, Set, Go. Pamphlets were prints and social media push by all agencies
MJ-3	Natrona County	All Hazards	Public Education (CERT) and 72 Preparedness Training	H	On-Going	CERT class Sept-Nov 2023
MJ-4	Natrona County	Wildfire	Wyoming Firewise	H	On-Going	Currently Firewise program is no longer available, working on updating Wildfire Mitigation Plan and applying for grants for education and cost sharing for citizens
MJ-6	Natrona County	Biological Disease	Continue to offer immunizations to residents and educate the public about	L	On-Going	On-going annually and during disease

ID	Lead Jurisdiction	Hazard	Project	Priority	2024 Status	2024 Comments
			novel diseases			outbreaks
C-2	City of Casper	Flood	Industrial Avenue Storm Sewer Improvements	H	Complete	This project was completed in two phases: Phase 1 was completed in 2021 and Phase 2 was completed in 2022.
C-3	City of Casper	Flood	Emigrant Gap Draw Channel Improvements	M	On-Going	
C-4	City of Casper	Flood	Sun Drive Detention Pond on Sage Creek	M	On-Going	
C-5	City of Casper	Flood	Eastdale Creek Diversion to Sage Creek	M	On-Going	
C-6	City of Casper	Flood, Wildfire	North Platte River Restoration	H	In-Progress	Morad Park and the 1st Street Reach phases have been completed. Additional phases of the stretch of the riparian area of the North Platte River continues.
C-7	City of Casper	Technological Human Caused Cyber & Network	Cyber Threat Prevention, Protection, Response and Recovery	H	On-Going	Working with Federal Partners on awareness, assessments, vulnerability scans and best practices. Layers

ID	Lead Jurisdiction	Hazard	Project	Priority	2024 Status	2024 Comments
		Threats				of technical defenses installed and maintained along with conducting user education and training. Continuity of operations and incident response planning and exercises.
C-10	City of Casper	Flood	Flood Hazard Notification and Education	M	No Progress - No Longer a Mitigation Priority	The planning department wasn't sure on this action's specifics. The only notification made is when the department adopts new maps or changes codes.
M1	City of Mills	Flood	Chamberlain Street bank stabilization	H	On-Going	The Chamberlain Rd. should be an ongoing project in conjunction with Natrona County, if the road fails it will affect both Mills and Natrona County Residents. Unfortunately, there has not been funding for this project.
E1	Town of	Flood	Stabilization of ditch bank and	M	No	Still needs to be done

ID	Lead Jurisdiction	Hazard	Project	Priority	2024 Status	2024 Comments
	Evansville		installation of storm sewer pipe along the existing drainage ditch on Oildale Street behind Smith RV		Progress - Continue Action	
E2	Town of Evansville	All Hazards	Hardening of the Town of Evansville Police Department for Flood and Severe Weather	M	No Progress - Continue Action	Still needs to be done
E4	Town of Evansville	Hazardous Materials, Flood, Wildfire	Address evacuation of Evansville due to Train Derailment or other hazards, including developing an alternate route	H	Complete	Memorial Way. completed 2022
BN1	Town of Bar Nunn	Hazardous Materials, Wildfire	Develop additional emergency access/egress for Bar Nunn	H	Complete	Westwinds interchange to the north, Wardwell interchange to the south
BN2	Town of Bar Nunn	Wildland Fire	Cheat grass/flash fuels eradication	H	No Progress - Continue Action	Area of concern is in growth boundary of Bar Nunn but is still considered as Natrona County. No annexation has occurred.
ED1	Town of Edgerton	Wildland Fire	Water storage and treatment facility fire break	H	No Progress -	

ID	Lead Jurisdiction	Hazard	Project	Priority	2024 Status	2024 Comments
					Continue Action	
MW1	Town of Edgerton	Wildland Fire	North boundary fire break	H	On-Going	Fire spread mitigation and mowing operation continue on the North boundary, continues to increase each year.

2024 MITIGATION ACTIONS

TABLE 78 and **TABLE 79** include the full details of all new mitigation actions included in this updated 2024 HMP. It should be noted that for potential funding source(s), reference to a “general fund” includes staff time.

Additionally, **TABLE 80** contains a listing of additional auxiliary mitigation actions and other relevant projects identified by the HMPC to be considered in future years.

Table 78 New 2024 Mitigation Actions

ID	Action Title	Local Government	Lead Organization	Partner Organization(s)	Primary Hazard Mitigated	Relevant Goal(s)	Action Details / Benefits
Natrona - 1	Dam / Levee Risk Awareness Campaign	Natrona County	NC Emergency Management	State Engineer's Office	Dam/Levee Incident	3,5,7	In coordination with the State, develop educational materials and content relating to the risk posed by these incidents and potential mitigation solutions. This yearly information campaign will be disseminated in the Spring to all county residents deemed at risk, with local governmental coordination.
Natrona - 11	Private Dam Owner Engagement	Natrona County	NC Emergency Management	Private Dam Owners	Dam/Levee Incident	2,4	Natrona County will coordinate with high hazard dam owners to develop Emergency Operations Plans for various dam release conditions. Owners include Falls Ranch, Eastgate Ranch, and East Elkhorn Ranch.
Casper -	North Platte River	Casper	City Manager	Bureau of	Dam/Levee	1,2,3,4,6	The "Revitalizing Casper: North Platte River Restoration

ID	Action Title	Local Government	Lead Organization	Partner Organization(s)	Primary Hazard Mitigated	Relevant Goal(s)	Action Details / Benefits
1	Restoration			Recreation	Incident		Project" aims to enhance the ecological health, recreational opportunities, and aesthetic appeal of the North Platte River in Casper. This comprehensive restoration effort involves several key components: Ecological Restoration, Water Quality Improvement, Recreational Enhancement, Flood Mitigation, Community Engagement, Long-Term Maintenance, and Monitoring.
Casper - 13	Private Dam Owner Engagement	Casper	City Manager	Private Dam Owners	Dam/Levee Incident	2,4	The city will develop an Emergency Operations Plan for various dam release conditions for the city-owned Eastdale Creek Detention No. 2 high hazard dam.
N/A		Bar Nunn			Dam/Levee Incident		Per the risk assessment, this hazard does not present a known risk

ID	Action Title	Local Government	Lead Organization	Partner Organization(s)	Primary Hazard Mitigated	Relevant Goal(s)	Action Details / Benefits
Evan - 1	River Flooding Abatement	Evansville	Community. Development Coord.	City of Casper	Dam/Levee Incident	1,5	Collaborative effort to improve banks of the North Platte River throughout the City of Casper and Town of Evansville.
Mills - 1	Mills Water Treatment Facility Area - N. Platte River Bank Elevation Increase or Levee.	Mills	Mills Public Works	Mills Mayor and City Administrator	Dam/Levee Incident	1, 2, 4, & 6	By increasing the bank height in the area of the Mills Water Treatment Facility it will allow for more time before emergent sandbagging and/or water diversion is needed to prevent water incursion into the water treatment facility.
NCF - 1	Dam / Levee Risk Awareness Campaign	Natrona Co. Fire District	Natrona County Fire Protection District Chief	Natrona County Emergency Management	Dam/Levee Incident	3,5,7	In coordination with the County, disseminate educational materials and content relating to the risk posed by these incidents and potential mitigation solutions. This yearly information campaign will be disseminated in the Spring to all residents deemed at risk and elected

ID	Action Title	Local Government	Lead Organization	Partner Organization(s)	Primary Hazard Mitigated	Relevant Goal(s)	Action Details / Benefits
							officials. Additionally, increase evacuation drills with impacted schools and public organizations.
CMFD - 12	Backup Generator for Station	Casper Mountain Fire	Casper Mountain Fire Department Chief		Dam/Levee Incident		To address potential impacts to communication systems, install a backup generator on the fire station.
Natrona - 2	Public Education on Water Conservation	Natrona County	Natrona County Emergency Management	NWS, Local Governments	Drought	5,7	In coordination with NWS and local governments, obtain and distribute information on water conservation methods and related mitigation actions annually in the Spring to all county residents.
Casper - 2	Identify Viability and Capacity of Current Infrastructure	Casper	City of Casper Water Department	Bureau of Recreation	Drought	1,2,3,6,7	Assess city infrastructure to determine the best mitigation solutions to implement, which may include: Long-Term Measures: Water Resources Enhancement: Increase water supply through measures like

ID	Action Title	Local Government	Lead Organization	Partner Organization(s)	Primary Hazard Mitigated	Relevant Goal(s)	Action Details / Benefits
	ure						enhancing storage capacity, water transfers, and locating new potential resources. Drought-Tolerant Crops: Promote the cultivation of drought-resistant crops. Efficient Water Management: Implement practices that optimize water use. Medium-Term Measures: Monitoring and Early Warning Systems: Use triggers provided by monitoring systems to implement timely actions before, during, and after droughts. Emergency Response: Implement emergency measures to address basic needs during severe droughts while contributing to long-term development.
BN - 2	Awareness and Understanding of	Bar Nunn	Town of Bar Nunn Public Works	Natrona County Emergency Management	Drought	5,7	Local community training event on drought mitigation for the town's residents. Use social and traditional media for educating

ID	Action Title	Local Government	Lead Organization	Partner Organization(s)	Primary Hazard Mitigated	Relevant Goal(s)	Action Details / Benefits
	Drought Issues						the public on water conservation. This annual campaign will be directed towards the entire district's population and will occur in the Spring.
Evan - 11	Public Education on Water Conservation	Evansville	Town of Evansville Public Works	Natrona County Emergency Management	Drought	5,7	Use social and traditional media for educating the public on water conservation. This annual campaign will be directed towards the entire district's population and will occur in the Spring.
Mills - 2	Identify viability of existing Well Water infrastructure and potential expansion	Mills	Water Treatment Supervisor		Drought	2,4,6	Conduct surveys to measure the water tables at all of the municipal water wells, to check their viability

ID	Action Title	Local Government	Lead Organization	Partner Organization(s)	Primary Hazard Mitigated	Relevant Goal(s)	Action Details / Benefits
NCF - 2	Public Education on Water Conservation	Natrona Co. Fire District	Brian Oliver	Natrona County Emergency Management	Drought	5,7	Use social and traditional media for educating the public on water conservation. This annual campaign will be directed towards the entire district's population and will occur in the Spring.
CMFD - 2	Public Education on Water Conservation	Casper Mountain Fire	Casper Mountain Fire Department Chief	Natrona County Emergency Management	Drought	5,7	Use social and traditional media for educating the public on water conservation and its relevance to the need for water to fight fire on the mountain. This annual campaign will be directed towards the entire district's population and will occur in the Spring.
Natrona - 3	Earthquake Awareness Campaign	Natrona County	Natrona County Emergency Management	WGS, Local Governments	Earthquake	1,4,6,7	In coordination with WGS and local governments, obtain and distribute information on earthquake mitigation methods and related mitigation actions annually in the Fall to all county

ID	Action Title	Local Government	Lead Organization	Partner Organization(s)	Primary Hazard Mitigated	Relevant Goal(s)	Action Details / Benefits
							residents.
Casper - 3	Enforce existing building codes that require structures to be earthquake resistant	Casper	Community Development	County	Earthquake	1,2,3,4,6,7	Building codes, when properly enforced, reduce the impact of earthquakes on people, buildings, infrastructure, and the environment.
BN - 3	Earthquake Awareness Campaign	Bar Nunn	Bar Nunn Fire Department Chief	Natrona County Emergency Management	Earthquake	1,4,6,7	In coordination with the County, distribute information on earthquake mitigation methods and related mitigation actions annually in the Fall to all residents.
Evan - 3	Building Codes and Regulations	Evansville	Town of Evansville Administration		Earthquake	1,2,4,6,7	Adopt the most recent building codes that require structures to be earth-quake resistant.

ID	Action Title	Local Government	Lead Organization	Partner Organization(s)	Primary Hazard Mitigated	Relevant Goal(s)	Action Details / Benefits
Mills - 4	Earthquake Awareness Campaign	Mills	Mills Fire Department Chief	Natrona County Emergency Management	Earthquake	1,4,6,7	In coordination with the County, distribute information on earthquake mitigation methods and related mitigation actions annually in the Fall to all residents.
NCF - 3	Earthquake Awareness Campaign	Natrona Co. Fire District	Natrona County Fire Protection District Chief	Natrona County Emergency Management	Earthquake	1,4,6,7	In coordination with the County, distribute information on earthquake mitigation methods and related mitigation actions annually in the Fall to all residents.
CMFD - 3	Earthquake Awareness Campaign	Casper Mountain Fire	Casper Mountain Fire Department Chief	Natrona County Emergency Management	Earthquake	1,4,6,7	In coordination with the County, distribute information on earthquake mitigation methods and related mitigation actions annually in the Fall to all residents.
Natrona - 4	Expansive Soil Hazard Education	Natrona County	Natrona County Emergency	WGS, Local Governments	Expansive Soils	5,7	In coordination with WGS and local governments, develop educational materials for elected officials, residents,

ID	Action Title	Local Government	Lead Organization	Partner Organization(s)	Primary Hazard Mitigated	Relevant Goal(s)	Action Details / Benefits
			Management				responders, and construction contractors of the possibilities and outcomes of expansive soils. This annual campaign will occur in the Fall and will provide mitigation solutions to consider.
Casper - 4	Comprehensive Expansive Soil Mitigation Action Plan	Casper	Community Development	Natrona County	Expansive Soils	1,2,3,4,6,7	Planning efforts directed at identifying the most at-risk structures/infrastructure, then development of mitigation solutions to include: Site Evaluation, Moisture Control, Vegetative Cover, Foundation Design, Chemical Stabilization, Mechanical Stabilization, Structural Modifications, Monitoring, and Maintenance
BN - 4	Expansive Soil Hazard Education	Bar Nunn	Bar Nunn Public Works	Natrona County Emergency Management	Expansive Soils	5,7	Educate elected officials, residents, responders, and construction contractors of the possibilities and outcomes of expansive soils. This annual

ID	Action Title	Local Government	Lead Organization	Partner Organization(s)	Primary Hazard Mitigated	Relevant Goal(s)	Action Details / Benefits
							campaign will occur in the Fall and will provide mitigation solutions to consider.
Evan - 4	Expansive Soil Hazard Education	Evansville	Town of Evansville Public Works	Natrona County Emergency Management	Expansive Soils	5,7	Educate elected officials, residents, responders, and construction contractors of the possibilities and outcomes of expansive soils. This annual campaign will occur in the Fall and will provide mitigation solutions to consider.
Mills - 5	Expansive Soil Hazard Awareness	Mills	City Planner	WGS	Expansive Soils	1 ,7	Make planning and zoning aware of the available GIS mapping, determine if local building policies need to be implemented.
NCF - 4	Expansive Soil Hazard Education	Natrona Co. Fire District	Natrona County Fire Protection District Chief	Natrona County Emergency Management	Expansive Soils	5,7	Educate elected officials, residents, responders, and construction contractors of the possibilities and outcomes of expansive soils. This annual campaign will occur in the Fall

ID	Action Title	Local Government	Lead Organization	Partner Organization(s)	Primary Hazard Mitigated	Relevant Goal(s)	Action Details / Benefits
							and will provide mitigation solutions to consider.
CMFD - 4	Expansive Soil Hazard Education	Casper Mountain Fire	Casper Mountain Fire Department Chief	Natrona County Emergency Management	Expansive Soils	5,7	Educate elected officials, residents, responders, and construction contractors of the possibilities and outcomes of expansive soils. This annual campaign will occur in the Fall and will provide mitigation solutions to consider.
Natrona - 5	Public Flooding Education	Natrona County	Natrona County Emergency Management	NWS, WOHS, Local Governments	Flood	1,2,4,5,6,7	Create an annual flood education campaign, through coordination with NWS and WOHS, to be shared with all local governments and residents in the Spring, to educate individuals on the flood risk and benefits of flood insurance.
Casper - 5	North Platte River	Casper	City Manager	Bureau of Recreation	Flood	1,2,3,4,6	The "Revitalizing Casper: North Platte River Restoration Project" aims to enhance the

ID	Action Title	Local Government	Lead Organization	Partner Organization(s)	Primary Hazard Mitigated	Relevant Goal(s)	Action Details / Benefits
	Restoration						ecological health, recreational opportunities, and aesthetic appeal of the North Platte River in Casper. This comprehensive restoration effort involves several key components: Ecological Restoration, Water Quality Improvement, Recreational Enhancement, Flood Mitigation, Community Engagement Long-Term Maintenance and Monitoring.
BN - 5	Public Flooding Education	Bar Nunn	Bar Nunn Public Works	Natrona County Emergency Management	Flood	1,2,4,5,6,7	Perform an annual flood education campaign to be shared with all residents in known floodplains in the Spring, to educate individuals on the flood risk and benefits of flood insurance.
Evan - 5	Improve Drainage in the East Yellowston	Evansville	Town of Evansville Administration	WLC Engineering	Flood	1,2,4, 6	Improve Drainage in the East Yellowstone Highway and Western Avenue Area. Also provide a hard cover or canopy

ID	Action Title	Local Government	Lead Organization	Partner Organization(s)	Primary Hazard Mitigated	Relevant Goal(s)	Action Details / Benefits
	e Highway and Western Avenue Area						over the Police Department Entrance so the building is less likely to flood during storms.
Mills - 6	Flood Awareness	Mills	Comm. Development Coordinator	Natrona County Emergency Management	Flood	1, 2, 4, 5 & 7	Areas of vulnerability shall be marked with signage, residents notified if living in vulnerable areas
NCF - 5	Public Flooding Education	Natrona Co. Fire District	Natrona County Fire Protection District Chief	Natrona County Emergency Management	Flood	1,2,4,5,6,7	Perform an annual flood education campaign to be shared with all residents in known floodplains in the Spring, to educate individuals on the flood risk and benefits of flood insurance.
CMFD - 5	Public Flooding Education	Casper Mountain Fire	Casper Mountain Fire Department Chief	Natrona County Emergency Management	Flood	1,2,4,5,6,7	Perform an annual flood education campaign to be shared with all residents in known floodplains in the Spring, to educate individuals on the flood risk and benefits

ID	Action Title	Local Government	Lead Organization	Partner Organization(s)	Primary Hazard Mitigated	Relevant Goal(s)	Action Details / Benefits
							of flood insurance.
Natrona - 6	Landslide Assessments	Natrona County	Natrona County Emergency Management	WGS, Local Governments	Landslide	2,3,4,5,6	Coordinate with WGS and local governments to perform assessments on known landslide areas across the county. Prioritize specific locations where structural mitigation actions will have the greatest benefit to the community.
Casper - 6	Implementing strategies to reduce the likelihood and impact of slope failures	Casper	Community Development	County	Landslide	1,2,3,4,6	Planning effort to identify an implementation plan for identifying slope stabilization measures to reduce the risk of landslide initiation. Promote the growth of vegetation on slopes to stabilize soil and reduce erosion. Improve surface drainage to redirect water away from slopes and prevent saturation of soil. Manage surface water sources such as springs, seeps, and streams to

ID	Action Title	Local Government	Lead Organization	Partner Organization(s)	Primary Hazard Mitigated	Relevant Goal(s)	Action Details / Benefits
							prevent erosion and soil saturation on slopes. Incorporate landslide hazard mapping and risk assessments into land-use planning decisions to minimize development in high-risk areas.
N/A		Bar Nunn			Landslide		Per the risk assessment, this hazard does not present a known risk
N/A		Evansville			Landslide		Per the risk assessment, this hazard does not present a known risk
Mills - 7	Landslide Assessments	Mills	City of Mills Public Works	Natrona County Emergency Management	Landslide	2,3,4,5,6	Assess known landslide areas to prioritize specific locations where structural mitigation actions will have the greatest benefit to the community.
NCF - 6	Landslide Assessments	Natrona Co. Fire District	Brian Oliver	Natrona County Emergency	Landslide	2,3,4,5,6	Assess known landslide areas to prioritize specific locations where structural mitigation

ID	Action Title	Local Government	Lead Organization	Partner Organization(s)	Primary Hazard Mitigated	Relevant Goal(s)	Action Details / Benefits
	ts			Management			actions will have the greatest benefit to the community.
CMFD - 6	Landslide Assessments	Casper Mountain Fire	Natrona County Planning Department	Natrona County Emergency Management	Landslide	2,3,4,5,6	Assess known landslide areas to prioritize specific locations where structural mitigation actions will have the greatest benefit to the community.
Natrona - 7	Subsidence Assessments	Natrona County	Natrona County Emergency Management	WGS, Local Governments	Mine and Land Subsidence	2,3,4,5,6	Coordinate with WGS and local governments to perform assessments on known subsidence areas across the county. Prioritize specific locations where structural mitigation actions will have the greatest benefit to the community.
N/A		Casper			Mine and Land Subsidence		Per the risk assessment, this hazard does not present a known risk
BN - 7	Subsidence Assessments	Bar Nunn	Bar Nunn Emergency	Natrona County Emergency	Mine and Land	2,3,4,5,6	Assess known subsidence areas to prioritize specific locations

ID	Action Title	Local Government	Lead Organization	Partner Organization(s)	Primary Hazard Mitigated	Relevant Goal(s)	Action Details / Benefits
	ts		Preparedness Committee	Management	Subsidence		where structural mitigation actions will have the greatest benefit to the community.
Evan - 7	Subsidence Assessments	Evansville	Town of Evansville Fire Chief	Natrona County Emergency Management	Mine and Land Subsidence	2,3,4,5,6	Assess known subsidence areas to prioritize specific locations where structural mitigation actions will have the greatest benefit to the community.
Mills - 8	Subsidence Assessments	Mills	City of Mills Mayor	Natrona County Emergency Management	Mine and Land Subsidence	2,3,4,5,6	Assess known subsidence areas to prioritize specific locations where structural mitigation actions will have the greatest benefit to the community.
NCF - 7	Subsidence Assessments	Natrona Co. Fire District	Natrona County Fire Protection District Chief	Natrona County Emergency Management	Mine and Land Subsidence	2,3,4,5,6	Assess known subsidence areas to prioritize specific locations where structural mitigation actions will have the greatest benefit to the community.
CMFD - 7	Subsidence Assessments	Casper Mountain	Casper Mountain Fire Department	Natrona County Emergency	Mine and Land	2,3,4,5,6	Assess known subsidence areas to prioritize specific locations where structural mitigation

ID	Action Title	Local Government	Lead Organization	Partner Organization(s)	Primary Hazard Mitigated	Relevant Goal(s)	Action Details / Benefits
	ts	Fire	Chief	Management	Subsidence		actions will have the greatest benefit to the community.
Natrona - 8	Education on Severe Weather	Natrona County	Natrona County Emergency Management	NWS, Local Governments	Severe Weather	1,2,3,4,5,7	In coordination with NWS, obtain and distribute information on severe weather mitigation methods and related mitigation actions annually in the Summer to all county residents.
Casper - 8	Severe Weather Events Public Education	Casper	Casper Fire	County	Severe Weather	1,2,3,4,5,6	Community Preparedness: Foster community preparedness through education, training, and outreach programs that raise awareness about severe weather risks and encourage individuals and households to mitigate their risk, develop emergency plans, assemble disaster supply kits, and participate in drills and exercises. This annual campaign will be broadcast to

ID	Action Title	Local Government	Lead Organization	Partner Organization(s)	Primary Hazard Mitigated	Relevant Goal(s)	Action Details / Benefits
							the entire city, to occur in the Spring.
BN - 8	Education on Severe Weather	Bar Nunn	Bar Nunn Emergency Preparedness Committee	Natrona County Emergency Management	Severe Weather	1,2,3,4,5,7	In coordination with the County, distribute information on severe weather mitigation methods and related mitigation actions annually in the Summer to all residents.
Evan - 12	Education on Severe Weather	Evansville	Town of Evansville Fire Chief	Natrona County Emergency Management	Severe Weather	1,2,3,4,5,7	In coordination with the County, distribute information on severe weather mitigation methods and related mitigation actions annually in the Summer to all residents.
Mills - 9	Education on Severe Weather	Mills	City of Mills Mayor	Natrona County Emergency Management	Severe Weather	1,2,3,4,5,7	In coordination with the County, distribute information on severe weather mitigation methods and related mitigation actions annually in the Summer to all residents. Inform public of Shelter in Place actions when

ID	Action Title	Local Government	Lead Organization	Partner Organization(s)	Primary Hazard Mitigated	Relevant Goal(s)	Action Details / Benefits
							ordered.
NCF - 11	Education on Severe Weather	Natrona Co. Fire District	Natrona County Fire Protection District Chief		Severe Weather	1,2,3,4,5,7	In coordination with the County, distribute information on severe weather mitigation methods and related mitigation actions annually in the Summer to all residents.
CMFD - 8	Infrastructure Resilience	Casper Mountain Fire	Casper Mountain Fire Department Chief	Natrona County Emergency Management	Severe Weather	1,4,6	Design all future critical infrastructure, including transportation networks, power grids, and communication systems, to be resilient to severe weather events. This may involve elevating infrastructure above flood levels, burying power lines to protect against wind damage, and incorporating redundancy and backup systems to ensure continuity of service. Improve infrastructure of the district to ensure access to response

ID	Action Title	Local Government	Lead Organization	Partner Organization(s)	Primary Hazard Mitigated	Relevant Goal(s)	Action Details / Benefits
							vehicles.
Natrona - 9	Wildfire Education	Natrona County	Natrona County Emergency Management	NWS, Fire Dept., Local Governments	Wildfire	1,2,3,4,5,6,7	In coordination with NWS and the fire department, obtain and distribute information on wildfire mitigation methods and related mitigation actions annually in the Spring to all local governments and county residents. Additionally inform residents of the red flag warnings and local fire bans, encourage the trimming of grasses whenever possible, and encourage personal evacuation planning.
Casper - 9	Wildfire Education	Casper	Casper Fire-EMS	Natrona County Fire, Mills Fire, Evansville Fire, Casper Mountain Fire, BLM	Wildfire	1,2,3,4,5,6,7	In coordination with the county, provide community wildfire mitigation education (focusing on defensible space and continued fuel reduction treatments) to all residents. This annual public education campaign will occur every

ID	Action Title	Local Government	Lead Organization	Partner Organization(s)	Primary Hazard Mitigated	Relevant Goal(s)	Action Details / Benefits
							Spring.
BN - 9	Wildfire Education	Bar Nunn	Town of Bar Nunn Fire Department	Natrona County Emergency Management	Wildfire	1,2,3,4,5,6,7	In coordination with the county, provide community wildfire mitigation education (focusing on defensible space and continued fuel reduction treatments) to all residents. This annual public education campaign will occur every Spring.
Evan - 9	Wildfire Education	Evansville	Evansville FD	Natrona County Fire District	Wildfire	1,2,3,4,5,6,7	In coordination with the county, provide community wildfire mitigation education (focusing on defensible space and continued fuel reduction treatments) to all residents. Use the Ready, Set, Go Program for materials and continue following the IFC for any new construction. This annual public education campaign will occur every

ID	Action Title	Local Government	Lead Organization	Partner Organization(s)	Primary Hazard Mitigated	Relevant Goal(s)	Action Details / Benefits
							Spring.
Mills - 10	Wildfire Education	Mills	Fire Chief	National Interagency Fire Center, National Wildfire Coordination Group, NWS	Wildfire	1,2,3,4,5,6,7	In coordination with the county, provide community wildfire mitigation education (focusing on defensible space and continued fuel reduction treatments) to all residents. This annual public education campaign will occur every Spring. Help residents mitigate hazard fuels around their homes
NCF - 9	WUI Codes	Natrona Co. Fire District	Brian Oliver	County	Wildfire	1,2,3,5,7	Adopt and enforce local Wildland Urban Interface codes.
CMFD - 9	Wildfire Education	Casper Mountain Fire	Casper Mountain Fire Department Chief	Natrona County Emergency Management	Wildfire	1,2,3,4,5,6,7	In coordination with the county, provide community wildfire mitigation education (focusing on defensible space and continued fuel reduction treatments) to all residents. This annual public education

ID	Action Title	Local Government	Lead Organization	Partner Organization(s)	Primary Hazard Mitigated	Relevant Goal(s)	Action Details / Benefits
							campaign will occur every Spring.
Natrona - 10	Winter Storm Education	Natrona County	Natrona County Emergency Management	NWS, Local Governments	Winter Storm	1,2,3,4,5,6,7	In coordination with NWS and local governments, obtain and distribute information on winter storm mitigation methods and related mitigation actions annually in the Fall to all county residents.
Casper - 10	Comprehensive public education strategy to protect people, property, and infrastructure from the impacts of severe winter	Casper	Public Safety	County	Winter Storm	1,2,3,4,5,6	Public Education and Awareness focused on: Road Maintenance and Snow Removal, Utility Infrastructure Resilience, Building Insulation and Weatherization, Emergency Shelter and Heating Assistance, Winterization of Vehicles and Equipment, Snow Load Monitoring and Roof Maintenance, Emergency Response Planning, Community Resilience Programs, Meteorological Monitoring and

ID	Action Title	Local Government	Lead Organization	Partner Organization(s)	Primary Hazard Mitigated	Relevant Goal(s)	Action Details / Benefits
	weather						Forecasting. This annual education campaign will be directed towards all residents and will occur in the Fall.
BN - 11	Winter Storm Education	Bar Nunn	Bar Nunn Emergency Preparedness Committee	County	Winter Storm	2,3,4,5,6,7	In coordination with the County, distribute information on winter storm mitigation methods and related mitigation actions annually in the Fall to all residents. Tools to utilize include the town bill, newspaper, and social media.
Evan - 10	Utility Infrastructure Resilience	Evansville	Evansville EM		Winter Storm		Strengthen utility infrastructure, including power lines, communication networks, and water supply systems, to withstand the impact of winter storms.
Mills - 11	Storm Ready Community	Mills	Mayor	NWS	Winter Storm	1,4,5,7	Ensure city departments are prepared, educate public on city winter storm plan annually in the Fall and in the event of a

ID	Action Title	Local Government	Lead Organization	Partner Organization(s)	Primary Hazard Mitigated	Relevant Goal(s)	Action Details / Benefits
							severe winter storm.
NCF - 10	Winter Heating Education	Natrona Co. Fire District	Brian Oliver / Natrona County Fire District		Winter Storm	1,2,3,5,7	Public education campaign focused on educating residents on safe heating appliance uses and on keeping exhaust openings clear. This campaign will be reshared annually in the Fall to all residents.
CMFD - 10	Building Insulation and Weatherization	Casper Mountain Fire	Casper Mountain Fire Department Chief	Natrona County Emergency Management	Winter Storm	1,5,6	Evaluate all district critical infrastructure to be resilient to winter storm events. Implement building insulation and weatherization activities as necessary.

Table 79 New 2024 Mitigation Actions – Additional Details

ID	Priority	Estimated Timeframe for Completion	Potential Funding Source(s)	Reduces Risk to Existing Structures / Infrastructure?	Limits Risk to New Development / Redevelopment?	Benefits Underserved Communities / Socially Vulnerable Populations?	Mitigation Action Type
Natrona - 1	Low	2028	County General Fund	No	Yes	Yes	Education & Awareness Programs
Natrona - 11	Medium	2027	FEMA HHPD, County General Fund	No	Yes	Yes	Local Plans & Regulations
Casper - 1	High	2028	City General Fund, FEMA BRIC / HMGP / FMA	Yes	Yes	Yes	Natural Systems Protection
Casper - 13	Medium	2027	FEMA HHPD, City General Fund	No	Yes	Yes	Local Plans & Regulations
N/A							
Evan - 1	Low	2027	Town General Fund, FEMA	Yes	Yes	Yes	Structure & Infrastructure

ID	Priority	Estimated Timeframe for Completion	Potential Funding Source(s)	Reduces Risk to Existing Structures / Infrastructure?	Limits Risk to New Development / Redevelopment?	Benefits Underserved Communities / Socially Vulnerable Populations?	Mitigation Action Type
			BRIC & HMGP				Projects
Mills - 1	Medium	2028	Town General Fund, FEMA BRIC & HMGP	Yes	No	Yes	Structure & Infrastructure Projects
NCF - 1	Low	2027	District General Fund, Volunteer Resources	No	Yes	Yes	Education & Awareness Programs
CMFD - 12	Medium	2027	District General Fund	Yes	No	Yes	Structure & Infrastructure Projects
Natrona - 2	Medium	2026	County General Fund	Yes	Yes	Yes	Education & Awareness Programs
Casper - 2	Medium	2028	City General Fund, FEMA BRIC & HMGP	Yes	Yes	Yes	Structure & Infrastructure Projects

ID	Priority	Estimated Timeframe for Completion	Potential Funding Source(s)	Reduces Risk to Existing Structures / Infrastructure?	Limits Risk to New Development / Redevelopment?	Benefits Underserved Communities / Socially Vulnerable Populations?	Mitigation Action Type
BN - 2	Medium	2026	Town General Fund	Yes	Yes	Yes	Education & Awareness Programs
Evan - 11	Medium	2026	Town General Fund	Yes	Yes	Yes	Education & Awareness Programs
Mills - 2	Low	2026	Town General Fund, FEMA BRIC & HMGP	No	Yes	Yes	Local Plans & Regulations
NCF - 2	Medium	2026	District General Fund, Volunteer Resources	Yes	Yes	Yes	Education & Awareness Programs
CMFD - 2	Low	2026	District General Fund, Volunteer Resources	No	Yes	Yes	Education & Awareness Programs

ID	Priority	Estimated Timeframe for Completion	Potential Funding Source(s)	Reduces Risk to Existing Structures / Infrastructure?	Limits Risk to New Development / Redevelopment?	Benefits Underserved Communities / Socially Vulnerable Populations?	Mitigation Action Type
Natrona - 3	Low	2028	County General Fund	Yes	Yes	Yes	Education & Awareness Programs
Casper - 3	Low	2026	City General Fund, FEMA BRIC	Yes	Yes	Yes	Local Plans & Regulations
BN - 3	Low	2028	Town General Fund	Yes	Yes	Yes	Education & Awareness Programs
Evan - 3	Low	2026	Town General Fund, FEMA BRIC	Yes	Yes	Yes	Local Plans & Regulations
Mills - 4	Low	2028	Town General Fund	Yes	Yes	Yes	Education & Awareness Programs
NCF - 3	Low	2028	District General Fund, Volunteer	Yes	Yes	Yes	Education & Awareness Programs

ID	Priority	Estimated Timeframe for Completion	Potential Funding Source(s)	Reduces Risk to Existing Structures / Infrastructure?	Limits Risk to New Development / Redevelopment?	Benefits Underserved Communities / Socially Vulnerable Populations?	Mitigation Action Type
			Resources				
CMFD - 3	Low	2028	District General Fund, Volunteer Resources	Yes	Yes	Yes	Education & Awareness Programs
Natrona - 4	Low	2027	County General Fund	Yes	Yes	Yes	Education & Awareness Programs
Casper - 4	Low	2028	City General Fund, FEMA BRIC & HMGP	Yes	Yes	Yes	Local Plans & Regulations
BN - 4	Low	2027	Town General Fund	Yes	Yes	No	Education & Awareness Programs
Evan - 4	Low	2027	Town General Fund	Yes	Yes	Yes	Education & Awareness Programs

ID	Priority	Estimated Timeframe for Completion	Potential Funding Source(s)	Reduces Risk to Existing Structures / Infrastructure?	Limits Risk to New Development / Redevelopment?	Benefits Underserved Communities / Socially Vulnerable Populations?	Mitigation Action Type
Mills - 5	Medium	2026	Town General Fund	No	Yes	Yes	Local Plans & Regulations
NCF - 4	Low	2027	District General Fund, Volunteer Resources	Yes	Yes	Yes	Education & Awareness Programs
CMFD - 4	Low	2027	District General Fund, Volunteer Resources	Yes	Yes	Yes	Education & Awareness Programs
Natrona - 5	High	2026	County General Fund	Yes	Yes	Yes	Education & Awareness Programs
Casper - 5	High	2028	City General Fund, FEMA BRIC / HMGP / FMA	Yes	Yes	Yes	Natural Systems Protection

ID	Priority	Estimated Timeframe for Completion	Potential Funding Source(s)	Reduces Risk to Existing Structures / Infrastructure?	Limits Risk to New Development / Redevelopment?	Benefits Underserved Communities / Socially Vulnerable Populations?	Mitigation Action Type
BN - 5	Medium	2026	Town General Fund	Yes	Yes	Yes	Education & Awareness Programs
Evan - 5	High	2028	Town General Fund, FEMA BRIC & HMGP	Yes	No	Yes	Structure & Infrastructure Projects
Mills - 6	Medium	2026	Town General Fund	No	No	Yes	Education & Awareness Programs
NCF - 5	Medium	2026	District General Fund, Volunteer Resources	Yes	Yes	Yes	Education & Awareness Programs
CMFD - 5	Low	2026	District General Fund, Volunteer Resources	Yes	Yes	Yes	Education & Awareness Programs

ID	Priority	Estimated Timeframe for Completion	Potential Funding Source(s)	Reduces Risk to Existing Structures / Infrastructure?	Limits Risk to New Development / Redevelopment?	Benefits Underserved Communities / Socially Vulnerable Populations?	Mitigation Action Type
Natrona - 6	Low	2027	County General Fund, FEMA BRIC & HMGP	Yes	Yes	No	Local Plans & Regulations
Casper - 6	Low	2028	City General Fund	Yes	Yes	Yes	Local Plans & Regulations
N/A							
N/A							
Mills - 7	Low	2027	Town General Fund, FEMA BRIC & HMGP	Yes	Yes	No	Local Plans & Regulations
NCF - 6	Low	2027	District General Fund, FEMA BRIC & HMGP, Volunteer Resources	Yes	Yes	No	Local Plans & Regulations

ID	Priority	Estimated Timeframe for Completion	Potential Funding Source(s)	Reduces Risk to Existing Structures / Infrastructure?	Limits Risk to New Development / Redevelopment?	Benefits Underserved Communities / Socially Vulnerable Populations?	Mitigation Action Type
CMFD - 6	Low	2027	District General Fund, FEMA BRIC & HMGP, Volunteer Resources	Yes	Yes	No	Local Plans & Regulations
Natrona - 7	Low	2028	County General Fund, FEMA BRIC & HMGP	Yes	Yes	No	Local Plans & Regulations
N/A							
BN - 7	Low	2028	Town General Fund, FEMA BRIC & HMGP	Yes	Yes	No	Local Plans & Regulations
Evan - 7	Low	2028	Town General Fund, FEMA BRIC & HMGP	Yes	Yes	No	Local Plans & Regulations

ID	Priority	Estimated Timeframe for Completion	Potential Funding Source(s)	Reduces Risk to Existing Structures / Infrastructure?	Limits Risk to New Development / Redevelopment?	Benefits Underserved Communities / Socially Vulnerable Populations?	Mitigation Action Type
Mills - 8	Low	2028	Town General Fund, FEMA BRIC & HMGP	Yes	Yes	No	Local Plans & Regulations
NCF - 7	Low	2028	District General Fund, FEMA BRIC & HMGP, Volunteer Resources	Yes	Yes	No	Local Plans & Regulations
CMFD - 7	Low	2028	District General Fund, FEMA BRIC & HMGP, Volunteer Resources	Yes	Yes	No	Local Plans & Regulations
Natrona - 8	High	2028	County General Fund	Yes	Yes	Yes	Education & Awareness Programs
Casper -	High	2026	City General	Yes	Yes	Yes	Education & Awareness

ID	Pri ty	Estimat ed Timefra me for Comple tion	Potential Funding Source(s)	Reduces Risk to Existing Structures / Infrastruct ure?	Limits Risk to New Development / Redevelopm ent?	Benefits Underserved Communities / Socially Vulnerable Populations?	Mitigation Action Type
8			Fund				Programs
BN - 8	High	2024	Town General Fund	Yes	Yes	Yes	Education & Awareness Programs
Evan - 12	High	2028	Town General Fund	Yes	Yes	Yes	Education & Awareness Programs
Mills - 9	High	2028	Town General Fund	Yes	Yes	Yes	Education & Awareness Programs
NCF - 11	High	2028	District General Fund, Volunteer Resources	Yes	Yes	Yes	Education & Awareness Programs
CMFD - 8	Medi um	2028	District General Fund, FEMA BRIC & HMGP, Volunteer	Yes	Yes	Yes	Structure & Infrastructure Projects

ID	Priority	Estimated Timeframe for Completion	Potential Funding Source(s)	Reduces Risk to Existing Structures / Infrastructure?	Limits Risk to New Development / Redevelopment?	Benefits Underserved Communities / Socially Vulnerable Populations?	Mitigation Action Type
			Resources				
Natrona - 9	High	2025	County General Fund	Yes	Yes	Yes	Education & Awareness Programs
Casper - 9	High	2026	City General Fund	Yes	Yes	Yes	Education & Awareness Programs
BN - 9	High	2025	Town General Fund	Yes	Yes	No	Education & Awareness Programs
Evan - 9	High	2026	Town General Fund	Yes	Yes	Yes	Education & Awareness Programs
Mills - 10	High	2026	Town General Fund	Yes	Yes	Yes	Education & Awareness Programs
NCF - 9	High	2024	District General Fund, FEMA BRIC, Volunteer	Yes	Yes	Yes	Local Plans & Regulations

ID	Priority	Estimated Timeframe for Completion	Potential Funding Source(s)	Reduces Risk to Existing Structures / Infrastructure?	Limits Risk to New Development / Redevelopment?	Benefits Underserved Communities / Socially Vulnerable Populations?	Mitigation Action Type
			Resources				
CMFD - 9	High	2027	District General Fund, Volunteer Resources	Yes	Yes	Yes	Education & Awareness Programs
Natrona - 10	High	2025	County General Fund	Yes	Yes	Yes	Education & Awareness Programs
Casper - 10	High	2026	City General Fund	Yes	Yes	Yes	Education & Awareness Programs
BN - 11	Medium	2025	Town General Fund	Yes	Yes	Yes	Education & Awareness Programs
Evan - 10	Medium	2027	Town General Fund, FEMA BRIC & HMGP	Yes	Yes	Yes	Structure & Infrastructure Projects

ID	Priority	Estimated Timeframe for Completion	Potential Funding Source(s)	Reduces Risk to Existing Structures / Infrastructure?	Limits Risk to New Development / Redevelopment?	Benefits Underserved Communities / Socially Vulnerable Populations?	Mitigation Action Type
Mills - 11	High	2027	Town General Fund	Yes	Yes	Yes	Education & Awareness Programs
NCF - 10	Medium	2026	District General Fund, FEMA BRIC, Volunteer Resources	Yes	Yes	Yes	Education & Awareness Programs
CMFD - 10	Medium	2028	District General Fund, FEMA BRIC & HMGP, Volunteer Resources	Yes	No	No	Structure & Infrastructure Projects

Table 80 Auxiliary Mitigation Actions and Other Relevant Projects

ID	Action Title	Local Government	Lead Organization	Partner Organization(s)	Primary Hazard Mitigated	Relevant Goal(s)	Action Details / Benefits
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ID	Action Title	Local Government	Lead Organization	Partner Organization(s)	Primary Hazard Mitigated	Relevant Goal(s)	Action Details / Benefits
Casper - 11	Severe weather events - infrastructure resilience	Casper	Casper Fire, Casper PD, Public Works	County	Severe Weather	1,2,3,4,5,6	Infrastructure Resilience: Design critical infrastructure, including transportation networks, power grids, and communication systems, to be resilient to extreme weather events. This may involve elevating infrastructure above flood levels, burying power lines to protect against wind damage, and incorporating redundancy and backup systems to ensure continuity of service.

ID	Action Title	Local Government	Lead Organization	Partner Organization(s)	Primary Hazard Mitigated	Relevant Goal(s)	Action Details / Benefits
Casper - 12	Severe weather events - early warning systems	Casper	Casper Fire, Casper PD, Public Works	County	Severe Weather	1,2,3,4,5,6	Early Warning Systems: Develop and deploy early warning systems that provide timely alerts and information to the public about impending severe weather events. This allows people to take protective actions and evacuate if necessary, reducing the risk of injury and loss of life.
CMFD - 3	Land-use planning	Casper Mountain Fire	Natrona County Planning Department	Natrona County Emergency Management	Earthquake	1,4,7	Implement zoning regulations and land-use planning that restricts development in high-risk areas, such as near fault

ID	Action Title	Local Government	Lead Organization	Partner Organization(s)	Primary Hazard Mitigated	Relevant Goal(s)	Action Details / Benefits
							lines or in liquefaction zones. This helps minimize exposure to seismic hazards.
Evan - 2	Limited Firefighting Water Capabilities	Evansville	Fire Department	Natrona County Fire District	Drought	3,5,7	Purchase portable drop tanks for firefighting efforts
Evan - 8	Improved Early Warning Detection - RADAR Project	Evansville	Town of Evansville Fire Chief and Semi-Pro Meteorologist Leo Malsom	Natrona County Emergency Management	Severe Weather	1,4,5,6,7	Design and build a Doppler radar in the central/northeast part of Wyoming to provide better real time data of severe weather and storm development, for a large portion of central and northern Wyoming

ID	Action Title	Local Government	Lead Organization	Partner Organization(s)	Primary Hazard Mitigated	Relevant Goal(s)	Action Details / Benefits
NCF - 2	Increase potable water capacity	Natrona Co. Fire District	Brian Oliver		Drought	2,7	Improve portable water capacity storage throughout the county.
NCF - 12	Wildfire Education	Natrona Co. Fire District	Brian Oliver		Wildfire	1,2,3,5,7	Educate the public on prevention and mitigation options. Continue Fuel mitigation projects in Urban areas. Educate and use the "ready, set, go" evacuation plans.
NCF - 11	Winter storm planning	Natrona Co. Fire District	Brian Oliver/ Natrona County Fire District		Winter Storm	1,2,3,5,7	Preplan response routes, for snowplows, schools busses.
BN - 10	Winter storm preparedness	Bar Nunn	Bar Nunn Emergency Preparedness Committee	NWS, Local Municipalities	Winter Storm	2,3,4,5,6,7	Design and implementation of engineered systems to aid in operations to allow for better

ID	Action Title	Local Government	Lead Organization	Partner Organization(s)	Primary Hazard Mitigated	Relevant Goal(s)	Action Details / Benefits
							preparedness for events
Mills - 3	Expand Well Water infrastructure and capability	Mills	Water Treatment Supervisor		Drought	2,4,6,7	Drill additional water wells to offset low water intake from river due to drought
Casper - 9	Comprehensive Wildfire Mitigation Program	Casper	Casper Fire-EMS	Natrona County Emergency Management	Wildfire	1,2,3,4,5,6	Further develop and enhance the City's wildfire mitigation program to include: Vegetation Management, Community Education and Outreach, Firebreaks and Fuel Breaks, Building Standards and Codes, Early Detection and Monitoring

ID	Action Title	Local Government	Lead Organization	Partner Organization(s)	Primary Hazard Mitigated	Relevant Goal(s)	Action Details / Benefits
							Emergency Planning and Preparedness, Wildfire Response and Suppression: Maintaining a well-equipped and trained firefighting force capable of responding quickly to wildfires. This includes coordination with local, state, and federal agencies, as well as utilizing aerial resources and specialized firefighting teams when needed. Post-Fire Recovery and Rehabilitation
NCF -	Comprehensive Wildfire	Natrona County Fire	Natrona County Fire	Natrona County Emergency	Wildfire	1,2,3,4,5,6	Further develop and enhance the

ID	Action Title	Local Government	Lead Organization	Partner Organization(s)	Primary Hazard Mitigated	Relevant Goal(s)	Action Details / Benefits
13	Mitigation Program	Protection District	Protection District	Management			City's wildfire mitigation program to include: Vegetation Management, Community Education and Outreach, Firebreaks and Fuel Breaks, Building Standards and Codes, Early Detection and Monitoring, Emergency Planning and Preparedness, Wildfire Response and Suppression: Maintaining a well-equipped and trained firefighting force capable of responding quickly to wildfires. This

ID	Action Title	Local Government	Lead Organization	Partner Organization(s)	Primary Hazard Mitigated	Relevant Goal(s)	Action Details / Benefits
							includes coordination with local, state, and federal agencies, as well as utilizing aerial resources and specialized firefighting teams when needed. Post-Fire Recovery and Rehabilitation
Mills - 12	Comprehensive Wildfire Mitigation Program	City of Mills	Mills Fire	Natrona County Emergency Management	Wildfire	1,2,3,4,5,6	Further develop and enhance the City's wildfire mitigation program to include: Vegetation Management, Community Education and Outreach, Firebreaks and Fuel Breaks, Building Standards and

ID	Action Title	Local Government	Lead Organization	Partner Organization(s)	Primary Hazard Mitigated	Relevant Goal(s)	Action Details / Benefits
							Codes, Early Detection and Monitoring Emergency Planning and Preparedness, Wildfire Response and Suppression: Maintaining a well-equipped and trained firefighting force capable of responding quickly to wildfires. This includes coordination with local, state, and federal agencies, as well as utilizing aerial resources and specialized firefighting teams when needed. Post-Fire Recovery

ID	Action Title	Local Government	Lead Organization	Partner Organization(s)	Primary Hazard Mitigated	Relevant Goal(s)	Action Details / Benefits
							and Rehabilitation
Evan - 11	Comprehensive Wildfire Mitigation Program	Town of Evansville	Evansville Fire	Natrona County Emergency Management	Wildfire	1,2,3,4,5,6	Further develop and enhance the City's wildfire mitigation program to include: Vegetation Management, Community Education and Outreach, Firebreaks and Fuel Breaks, Building Standards and Codes, Early Detection and Monitoring Emergency Planning and Preparedness, Wildfire Response and Suppression: Maintaining a well-equipped and

ID	Action Title	Local Government	Lead Organization	Partner Organization(s)	Primary Hazard Mitigated	Relevant Goal(s)	Action Details / Benefits
							trained firefighting force capable of responding quickly to wildfires. This includes coordination with local, state, and federal agencies, as well as utilizing aerial resources and specialized firefighting teams when needed. Post-Fire Recovery and Rehabilitation
BN - 12	Comprehensive Wildfire Mitigation Program	Town of Bar Nunn	Bar Nunn Fire	Natrona County Emergency Management	Wildfire	1,2,3,4,5,6	Further develop and enhance the City's wildfire mitigation program to include: Vegetation Management, Community Education and

ID	Action Title	Local Government	Lead Organization	Partner Organization(s)	Primary Hazard Mitigated	Relevant Goal(s)	Action Details / Benefits
							Outreach, Firebreaks and Fuel Breaks, Building Standards and Codes, Early Detection and Monitoring Emergency Planning and Preparedness, Wildfire Response and Suppression: Maintaining a well-equipped and trained firefighting force capable of responding quickly to wildfires. This includes coordination with local, state, and federal agencies, as well as utilizing aerial resources and specialized

ID	Action Title	Local Government	Lead Organization	Partner Organization(s)	Primary Hazard Mitigated	Relevant Goal(s)	Action Details / Benefits
							firefighting teams when needed. Post-Fire Recovery and Rehabilitation
CMFD - 11	Comprehensive Wildfire Mitigation Program	Casper Mountain Fire	Casper Mountain Fire Department	Natrona County Emergency Management	Wildfire	1,2,3,4,5,6	Further develop and enhance the City's wildfire mitigation program to include: Vegetation Management, Community Education and Outreach, Firebreaks and Fuel Breaks, Building Standards and Codes, Early Detection and Monitoring, Emergency Planning and Preparedness, Wildfire Response

ID	Action Title	Local Government	Lead Organization	Partner Organization(s)	Primary Hazard Mitigated	Relevant Goal(s)	Action Details / Benefits
							and Suppression: Maintaining a well-equipped and trained firefighting force capable of responding quickly to wildfires. This includes coordination with local, state, and federal agencies, as well as utilizing aerial resources and specialized firefighting teams when needed. Post-Fire Recovery and Rehabilitation

MITIGATION CAPABILITIES

Note that the capability assessment asked different questions, depending on the type of local government. Any grey cells in the following four tables are capabilities not applicable to special districts, and therefore not assessed.

Planning and regulatory capabilities are powerful tools for implementing hazard mitigation. The county and local governments currently utilize or have implemented a number of these capabilities shown in **TABLE 81**. The county also supports local governments with some of these available capabilities.

Local governments are encouraged to utilize this assessment to identify those capabilities that they want to expand and improve upon, to enhance implementation efforts towards the county's mitigation strategy. The ability to do so is dictated by each local government's elected leadership, management, and available funding and staffing. It is also noted that grant funding opportunities are available to improve these capabilities. It should be noted that some of the new mitigation actions are also focused on enhancing these mitigation capabilities.

Table 81 Planning & Regulatory Capabilities

Mitigation Capability	Natrona County	City of Casper	Town of Bar Nunn	Town of Evansville	City of Mills	Natrona FPD	Casper Mt. FPD
Comprehensive, Master, or General Plan	No	No	No	No	No	Yes	No
Capital Improvement Program or Plan (CIP)	No	Yes	No	Yes	Yes	Yes	No
Floodplain Management Plan	No	Yes	No	Yes	Yes	Yes	No
Stormwater Program / Plan	Yes	Yes	Yes	Yes	Yes	Yes	No

Mitigation Capability	Natrona County	City of Casper	Town of Bar Nunn	Town of Evansville	City of Mills	Natrona FPD	Casper Mt. FPD
Community Wildfire Protection Plan (CWPP)	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Erosion / Sediment Control Program	Yes	Yes	Yes	No	Yes	Yes	No
Economic Development Plan	Yes	Yes	Yes	Yes	Yes		
Other Plans:	EOP	EOP	EOP	EOP	EOP	Biz. Continuity	N/A
Building Codes (Year)	2018 IBC (2021 pending)	2018 IBC (2021 pending)	2018 IBC (2021 pending)	2018 IBC (2021 pending)	2021 IBC		
Building Code Effectiveness Grading Schedule (BCEGS) Rating	Unknown	Unknown	Unknown	Unknown	Unknown		
Site Plan Review Requirements	Yes	Yes	Yes	Yes	Yes	Yes	No
Other Codes, Permitting, or Inspections:	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Mitigation Capability	Natrona County	City of Casper	Town of Bar Nunn	Town of Evansville	City of Mills	Natrona FPD	Casper Mt. FPD
Zoning Ordinance (Land Use)	Yes	Yes	Yes	Yes	Yes		
Subdivision Ordinance	Yes	Yes	Yes	Yes	Yes		
National Flood Insurance Program (NFIP) Participant	Yes	Yes	No	Yes	Yes		
Flood Insurance Study / Flood Insurance Rate Map / DFIRM	Yes	Yes	No	Yes	Yes		
Floodplain Ordinance	Yes	Yes	No	Yes	Yes		
Elevation Certificates for Floodplain Development	Yes	Yes	No	Yes	No		
Community Rating System (CRS) Participant	No	Yes	No	No	No		
Open Space / Conservation Program	Yes	Yes	Yes	No	Yes		

Mitigation Capability	Natrona County	City of Casper	Town of Bar Nunn	Town of Evansville	City of Mills	Natrona FPD	Casper Mt. FPD
Growth Management Ordinance	No	Yes	No	Yes	No		
Stormwater Ordinance	No	Yes	No	Yes	Yes		
Other Hazard Ordinance (steep slope, wildfire, snow loads, etc.)	No	No	No	No	No		
Other Land Use Planning and Ordinances:	Casper Mt. Land Use Plan	Casper Mt. Land Use Plan	N/A	N/A	N/A		

Administrative and technical capabilities include staff, working groups, and technology which are vital for a community to be able to implement hazard mitigation. The county and local governments currently utilize or have implemented a number of these capabilities shown in **TABLE 82**.

Table 82 Administrative & Technical Capabilities

Mitigation Capability	Natrona County	City of Casper	Town of Bar Nunn	Town of Evansville	City of Mills	Natrona FPD	Casper Mt. FPD
Planning Commission	Yes	Yes	Yes	Yes	Yes		
Mitigation Planning Committee	Yes	Yes	Yes	Yes	Yes		

Mitigation Capability	Natrona County	City of Casper	Town of Bar Nunn	Town of Evansville	City of Mills	Natrona FPD	Casper Mt. FPD
Maintenance Programs (tree trimming, clearing drainage, etc.)	Yes	Yes	Yes	Yes	Yes	No	No
Emergency Manager	Yes	County	County	County	County	County	County
Building Official	Yes	Yes	Yes	Yes	Yes		
Floodplain Administrator	Yes	Yes	No	Yes	Yes		
Community Planner	Yes	Yes	Yes	Yes	Yes		
Transportation Planner	Yes	Yes	Yes	Yes	Yes		
Civil Engineer	Yes	Yes	Yes	Yes	Yes		
GIS Capability	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Resiliency Planner	No	No	No	No	No		
Other Related Staff:	N/A	N/A	N/A	N/A	N/A	IMT Staffing	N/A
Warning Systems / Services (flood)	Yes	Yes	Yes	Yes	Yes		

Mitigation Capability	Natrona County	City of Casper	Town of Bar Nunn	Town of Evansville	City of Mills	Natrona FPD	Casper Mt. FPD
Warning Systems / Services (other / multi-hazard)	Yes	Yes	Yes	Yes	Yes		
Grant Writing / Management	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Other Technical:	N/A	N/A	N/A	N/A	N/A	N/A	N/A

The ability of a community to implement a comprehensive mitigation strategy is largely dependent on available funding. The county and local governments currently utilize or have implemented some of these capabilities shown in **TABLE 83**.

Table 83 Financial Capabilities

Mitigation Capability	Natrona County	City of Casper	Town of Bar Nunn	Town of Evansville	City of Mills	Natrona FPD	Casper Mt. FPD
Levy for Specific Purposes with Voter Approval	No	No	No	No	Yes	Yes	Yes
Utilities Fees	No	Yes	Yes	Yes	Yes	No	No
System Development / Impact Development Fee	No	Yes	Yes	Yes	Yes	No	No

Mitigation Capability	Natrona County	City of Casper	Town of Bar Nunn	Town of Evansville	City of Mills	Natrona FPD	Casper Mt. FPD
General Obligation Bonds to Incur Debt	No	No	No	No	No	No	No
Special Tax Bonds to Incur Debt	No	No	No	No	No		
Withheld Spending in Hazard-Prone Areas	No	No	No	No	No	No	No
Open Space / Conservation Fund	No	No	No	No	No		
Stormwater Utility Fees	No	No	No	No	No	No	No
Capital Improvement Project Funding	Yes	Yes	Yes	Yes	Yes	Yes	No
Community Development Block Grants (CDBG)	Yes	Yes	Yes	Yes	Yes		
Other Funding:	N/A	N/A	N/A	N/A	N/A	N/A	Donations / Grants

Education and outreach are important capabilities that allow a community to continue the conversation with their public regarding hazard risk and opportunities to mitigate. The

county and local governments currently utilize or have implemented some of these capabilities shown in **TABLE 84**.

Table 84 Education & Outreach Capabilities

Mitigation Capability	Natrona County	City of Casper	Town of Bar Nunn	Town of Evansville	City of Mills	Natrona FPD	Casper Mt. FPD
Public Hazard Education / Outreach Program	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Local Citizen Groups that Communicate Hazard Risks	No	Yes	Yes	Yes	No	Yes	Yes
Firewise	No	No	No	No	No	No	No
StormReady	Yes	Yes	Yes	Yes	No		
Other Programs or Organizations:	N/A	N/A	N/A	N/A	N/A	N/A	N/A

TABLE 85 lists those specific capabilities that each local government will work towards expanding over the next five years.

Table 85 Primary Capabilities to Expand

Local Government	Capability
All	All local government are focused on collectively developing a Community Wildfire Protection Plan (CWPP) and evaluation of participation in the Firewise USA program.

COMPLIANCE WITH FLOODPLAIN REQUIREMENTS

Natrona County, Casper, Evansville, and Mills have been mapped and participate in the NFIP, and have adopted NFIP minimum floodplain management criteria.

TABLE 86 includes the details for the NFIP participants in the county, as well as the current policy coverage and claims paid. It should be noted that Bar Nunn, Edgerton, and Midwest are currently not participating. There are no repetitive or severe repetitive loss properties within the county.

The City of Casper also participates in the NFIP Community Rating System (CRS) and is currently a Class 10 community, which provides no discount on flood insurance premium rates.

Table 86 NFIP Summary

Juris-diction	Date of Entry	Initial FIRM ID	Current FIRM	Policies in Force	Coverage	Claims Paid	Value Claims Paid
Natrona County	5/15/1978	5/15/1978	5/18/2015	29	\$9,160,000	5	\$2,726
Casper	9/15/1977	9/15/1977	5/18/2015	150	\$33,477,000	49	\$210,006
Evansville	7/17/1978	7/17/1978	5/18/2015	2	\$700,000	1	\$0
Mills	12/1/1986	12/1/1986	5/18/2015	2	\$460,000	1	\$0

Maintaining compliance under the NFIP is an important component of flood risk reduction. All participating communities will continue to comply with all NFIP requirements which is monitored by FEMA regional staff, including enforcing all locally adopted floodplain management regulations concerning existing structure improvements and new construction. The county and participating communities are currently in good standing with the provisions of the NFIP.

Adopting floodplain management rules is only effective if the rules are followed and enforced. Implementation and enforcement of local floodplain regulations (i.e. – “compliance”) is achieved through the following:

- Continuing to participate in FIRM updates and adopt floodplain maps when created / updated
- Implementing, maintaining, and updating floodplain ordinances
- Continued designation of a local floodplain manager whose responsibilities include reviewing floodplain development permits to ensure compliance with local floodplain management ordinances and rules

- Suggest improvements to the enforcement of, and compliance with, regulations and programs
- Promote and educate the public on the benefits of flood insurance

After a flood event, or any event that may cause loss of a structure such as a fire or tornado, it is the role of the floodplain administrator to review and assess damaged structures located within the Special Flood Hazard Area (SFHA). "Substantial damage" occurs when the cost of restoring a structure exceeds 50 percent of its market value before damage occurred. "Substantial improvement" occurs when the cost of improving a structure exceeds 50 percent of its market value before the start of construction. Property owners are advised that structures experiencing substantial damage, or undergoing substantial improvements, must go through the floodplain application and permit process. Additionally, these structures must be upgraded during the repair or reconstruction process to meet the minimum building standards stipulated in the regulations.

If it is determined substantial damage / improvement has occurred, those structures must be brought up to current floodplain management standards. This ensures compliance with floodplain management measures and contributes to the overall safety and resilience of the affected structures. These provisions are common to each community's floodplain management ordinances.

NFIP compliance is implemented through the following designations:

- Natrona County: The County Development Director has been appointed the Floodplain Administrator to administer and implement the provisions of the community floodplain ordinance and other appropriate sections of 44 CFR pertaining to floodplain management.
- City of Casper: The City Development Director has been appointed the Floodplain Administrator to administer and implement the provisions of the community floodplain ordinance and other appropriate sections of 44 CFR pertaining to floodplain management.
- Town of Evansville: The Town Engineer, or their designated employee, has been appointed the Floodplain Administrator to administer and implement the provisions of the community floodplain ordinance and other appropriate sections of 44 CFR pertaining to floodplain management.
- City of Mills: The City Planner has been appointed the Floodplain Administrator to administer and implement the provisions of the community floodplain ordinance and other appropriate sections of 44 CFR pertaining to floodplain management.

Also, to be considered are the flood mitigation actions contained in this HMP that support the ongoing efforts by participating communities to minimize the risk and vulnerability to the flood hazard.

PLAN MONITORING AND MAINTENANCE

Natrona County and the HMPC agreed upon these HMP maintenance procedures. It was determined that the emergency manager will serve as the primary point of contact for these tasks. This position will coordinate all local efforts to monitor, evaluate, and update the HMP. Each participating local government will be responsible for implementing their specific mitigation actions and reporting on the status of these actions to the emergency manager.

Throughout the year, the emergency manager will monitor hazard events that may require the HMPC to revisit sections of the HMP. Reasons for this may include but are not limited to: disaster events (affecting the county or other communities across the nation); changes in hazard risk or vulnerability due to population change, development, and/or climate change; changes in available funding resources; updated hazard studies or information; changes in governmental organizational structure; or public input / concerns.

Events that do not necessitate a HMP update at that time will be tracked by the emergency manager for integration into the five-year update.

Emergency Management will annually monitor ongoing action items by maintaining contact with all local jurisdictions. An evaluation of the HMP's effectiveness will be directly measured through this monitoring.

CONTINUED PUBLIC ENGAGEMENT

Continuing public engagement over the HMP's next five-year lifespan is paramount to retaining community momentum as it relates to implementing the mitigation strategy. It is also important to use this opportunity to identify additional ways that the county's underserved communities and populations can be best represented by the HMP (detailed in the **UNDERSERVED COMMUNITIES** section). **TABLE 87** identifies these planned public engagement efforts for each local government.

Table 87 Planned Continued Public Engagement Efforts

Local Government	Engagement Effort(s)
Natrona County	On an ongoing basis, the county will utilize social media and community education opportunities to educate the public about the hazards in our community and mitigations actions that can be taken by citizens to improve their abilities to be prepared.
City of Casper	On an ongoing basis, the city will utilize social media and community newsletters to educate our public about the hazards in our community and

Local Government	Engagement Effort(s)
	mitigation progress made.
City of Mills	The city will provide hazard mitigation information, project implementation updates, and educational materials through regular government public meetings. Including use of meeting streaming and other media tools.
Town of Bar Nunn	On an ongoing basis, the town will utilize social media and community newsletters to educate our public about the hazards in our community and mitigation progress made.
Town of Evansville	On an ongoing basis, the town will utilize social media and community newsletters to educate our public about the hazards in our community and mitigation progress made.
Natrona County Fire District	On an ongoing basis, the district will utilize social media and community newsletters to educate our public about the hazards in our community and mitigation progress made.
Casper Mountain Fire District	On an ongoing basis, the district will utilize social media and community newsletters to educate our public about the hazards in our community and mitigation progress made.

CHANGES IN COMMUNITY PRIORITIES

Communities are continually evolving over the HMP's five-year lifespan. For some, this can lead to changes in local government priorities, as it relates to hazard mitigation. Factors potentially influencing these priorities can include but are not limited to: recent disaster events; changing local resources, needs, or capabilities; new state or federal policies and funding resources; new hazard impacts identified by the updated risk assessment; or changes in growth and development. At the same time, other communities may have experienced no major changes that would influence the updated HMP. **TABLE 88** presents how this HMP was revised due to these potential changes in each local government.

Table 88 Changes in Community Priorities

Local Government	Changes Since Last HMP
------------------	------------------------

Local Government	Changes Since Last HMP
Natrona County	Changing priorities were dictated by the updated risk assessment and identified vulnerabilities.
City of Casper	Changing priorities were dictated by the updated risk assessment and identified vulnerabilities.
City of Mills	There have been no major changes to community priorities relating to hazards and related mitigation since the previous plan.
Town of Bar Nunn	Changing priorities were dictated by the updated risk assessment and identified vulnerabilities.
Town of Evansville	Changing priorities were dictated by the updated risk assessment and identified vulnerabilities.
Natrona County Fire District	Changing priorities were dictated by the updated risk assessment and identified vulnerabilities.
Casper Mountain Fire District	Changing priorities were dictated by the updated risk assessment and identified vulnerabilities.

PLANNING PROCESS

PLANNING INTEGRATION

Integration of the HMP into other planning mechanisms is vital for the overall implementation of the mitigation strategy. This also benefits a community by ensuring that there are no strategic conflicts across planning documents. **TABLE 89** documents how local governments were able to successfully integrate the 2019 HMP into other planning efforts.

Table 89 Integration of the 2019 HMP

Local Government	Plan Integration
Natrona County	The current HMP plan was referenced and used in the updated Natrona County EOP (Emergency Operation Plan) and was utilized as part of the update for the THIRA.

Local Government	Plan Integration
City of Casper	The current HMP plan was referenced and used in the updated Natrona County EOP (Emergency Operation Plan) and was utilized as part of the update for the THIRA. Additionally, it was referenced during drafting of the City Emergency Response Plan (water / waste water)
City of Mills	The current HMP plan was referenced and used in the updated Natrona County EOP (Emergency Operation Plan) and was utilized as part of the update for the THIRA.
Town of Bar Nunn	The current HMP plan was referenced and used in the updated Natrona County EOP (Emergency Operation Plan) and was utilized as part of the update for the THIRA.
Town of Evansville	The current HMP plan was referenced and used in the updated Natrona County EOP (Emergency Operation Plan) and was utilized as part of the update for the THIRA.
Natrona County Fire District	The current HMP plan was referenced and used in the updated Natrona County EOP (Emergency Operation Plan) and was utilized as part of the update for the THIRA.
Casper Mountain Fire District	The current HMP plan was referenced and used in the updated Natrona County EOP (Emergency Operation Plan) and was utilized as part of the update for the THIRA.

TABLE 90 details each local government's planned integration efforts for the 2024 HMP.

Table 90 Integration of the 2024 HMP

Local Government	Plan Integration
Natrona County	The HMP will be integrated in future THIRAs and used to seek federal grant funding for mitigation projects. The information from this HMP will be

Local Government	Plan Integration
	considered and integrated into future countywide CWPP planning efforts as appropriate.
City of Casper	The information from this HMP will be considered and integrated into future countywide CWPP planning efforts as appropriate.
City of Mills	The information from this HMP will be considered and integrated into future countywide CWPP planning efforts as appropriate.
Town of Bar Nunn	The information from this HMP will be considered and integrated into future countywide CWPP planning efforts as appropriate.
Town of Evansville	The information from this HMP will be considered and integrated into future countywide CWPP planning efforts as appropriate.
Natrona County Fire District	The information from this HMP will be considered and integrated into future countywide CWPP planning efforts as appropriate.
Casper Mountain Fire District	The information from this HMP will be considered and integrated into future countywide CWPP planning efforts as appropriate.

INCORPORATION OF EXISTING PLANS & INFORMATION

In addition to the data provided by stakeholders mentioned previously, all HMP-relevant existing plans, studies, reports, and technical information were reviewed during the update process. **TABLE 91** provides an overview of how each of these resources were incorporated into the HMP.

Table 91 Existing Resource Incorporation

Local Government	Plan Integration
Wyoming State HMP (2021)	Informed the mitigation strategy and risk assessment

Local Government	Plan Integration
National Oceanic and Atmospheric Administration (NOAA) National Centers for Environmental Information (2023)	Informed the risk assessment
NOAA National Weather Service (NWS) Storm Prediction Center	Informed the risk assessment
Casper Mountain Land Use Plan (20)	Informed the mitigation strategy
Zoning Resolution (2022)	Informed the mitigation strategy

HAZARD IDENTIFICATION AND RISK ASSESSMENT

A qualitative risk ranking was performed by each participating local government for the hazards profiled in this plan. This risk ranking assessed the probability of each hazard's occurrence, as well as its likely impact on the people, property / environment, and economy of the planning area. The responses were collected utilizing a four-category qualitative scale. For probability of the hazard this included "unlikely (1)" "possible (2)", "probable (3)", and "likely (4)". For the impacts of the hazard to the three community sectors, the scale included "minor (1)", "limited (2)", "critical (3)", and "catastrophic (4)". The responses were then calculated into a quantitative range by combining the impact scores and multiplying by the probability score, which correlates with the "high," "moderate (mod)," and "low" risk rankings. **TABLE 92** presents each local government's hazard risk ranking.

For some local governments, select hazards identified as affecting the county may not currently present an immediate or impactful risk. Those hazards are denoted as not applicable (N/A).

Table 92 Local Government Hazard Risk Rankings

Hazard	Natrona County	Casper	Bar Nunn	Evansville	Mills	Natrona Co. Fire	Casper Mountain Fire
Dam/Levee Incident	Mod	Mod	N/A	Low	Mod	Mod	Low
Drought	Mod	Mod	Mod	High	Mod	Mod	Mod

Hazard	Natrona County	Casper	Bar Nunn	Evansville	Mills	Natrona Co. Fire	Casper Mountain Fire
Earthquake	Mod	Low	Mod	Mod	Mod	Mod	Mod
Expansive Soils	Low	Mod	Low	Low	Low	Low	Low
Flood	Mod	High	Low	High	Mod	Mod	Mod
Landslide / Rockfall / Debris Flow	Low	Low	N/A	N/A	Low	Low	Low
Mine and Land Subsidence	Low	N/A	Low	Low	Low	Low	Low
Severe Weather	High	High	High	High	High	High	High
Severe Winter Weather	High	High	High	High	High	High	High
Wildfire	High	High	High	High	High	High	High

LIFELINES

FEMA's *Hazus Inventory National Database* was utilized for all Lifeline analysis. A baseline of this data is presented in **TABLE 93** and **FIGURE 31**.

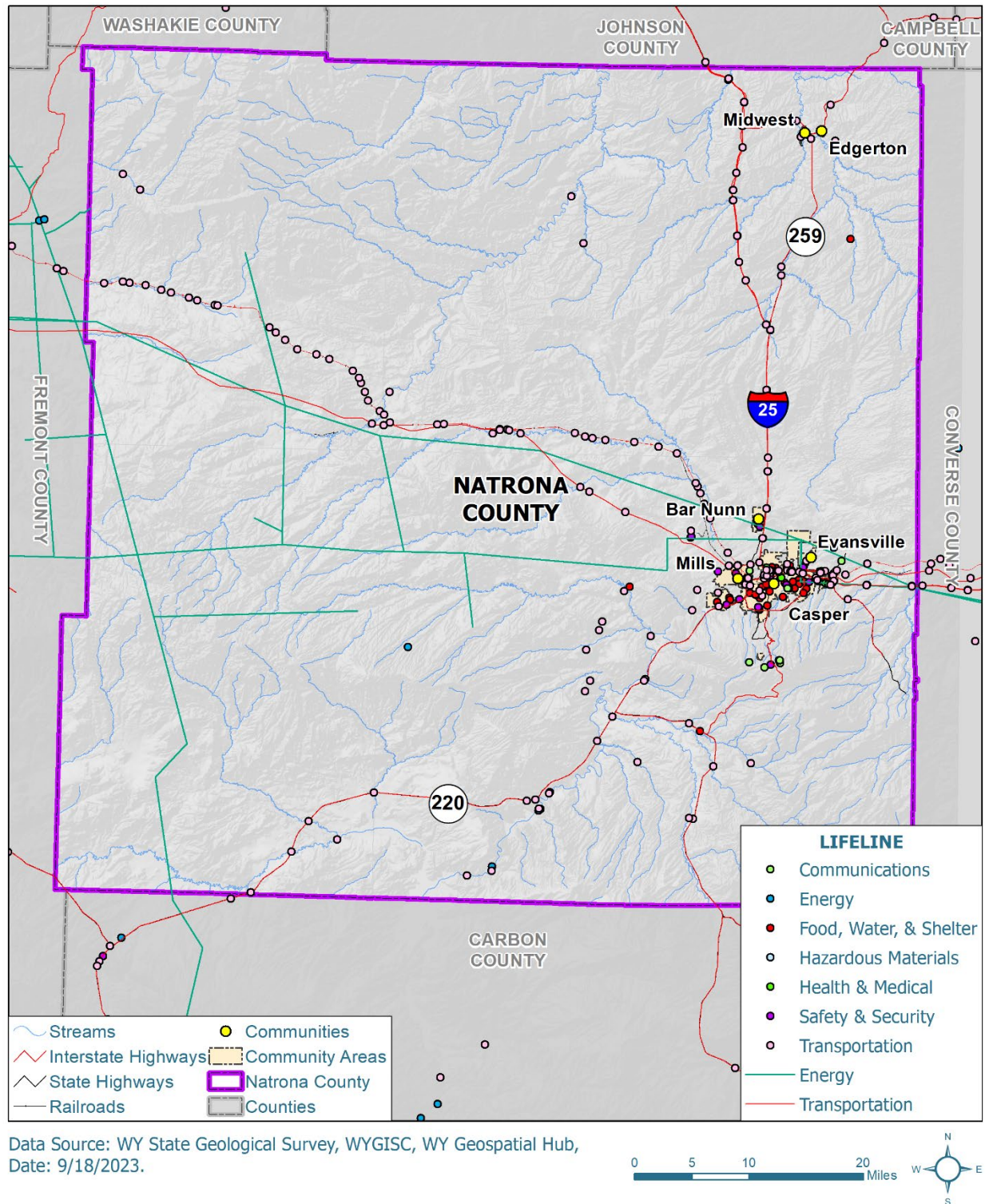
Table 93 Lifelines Inventory

Lifeline	Bar Nunn	Casper	Edgerton	Evansville	Midwest	Mills	Unincorporated	Total
Communications	-	1	-	-	-	1	15	17
Energy	-	1	-	1	-	-	7	9
Energy (Miles)	1.0	8.5	-	5.4	-	-	260.9	275.8
Food, Hydration, & Shelter	1	30	-	1	1	-	4	37
Health & Medical	-	8	-	3	-	-	-	11

Lifeline	Bar Nunn	Casper	Edgerton	Evansville	Midwest	Mills	Unincorporated	Total
Safety & Security	1	10	-	6	2	2	5	26
Transportation	-	26	-	-	-	5	155	186
Transportation (Miles)	-	23.0	0.5	4.5	0.7	6.8	358.2	393.7

Figure 31 Lifelines

Natrona County - Lifelines



BUILDING INVENTORY

The US Army Corps of Engineers *National Structure Inventory* was utilized for all structure assessments. A baseline of this data is presented in **TABLE 94**.

Table 94 Structure Inventory

Jurisdiction (Structure Type)	Total Structure Count	Total Improved Structure Count	Total Structure Value	Estimated Content Value
Bar Nunn	1,049	1,049	\$215,590,484	\$311,185,202
Commercial	26	26	\$23,927,913	\$47,800,937
Industrial	16	16	\$10,872,269	\$32,009,050
Public	3	3	\$7,183,117	\$14,366,234
Residential	1,004	1,004	\$173,607,186	\$217,008,982
Casper	23,864	23,831	\$7,646,515,880	\$12,244,215,947
Commercial	2,054	2,032	\$2,321,040,874	\$4,625,840,321
Industrial	458	454	\$327,252,954	\$989,452,177
Public	220	215	\$495,164,690	\$1,000,101,748
Residential	21,132	21,130	\$4,503,057,362	\$5,628,821,702
Edgerton	149	149	\$48,919,018	\$107,850,255
Commercial	25	25	\$17,033,035	\$34,669,995
Industrial	13	13	\$16,031,857	\$51,088,459
Public	5	5	\$3,032,192	\$6,064,385
Residential	106	106	\$12,821,934	\$16,027,417
Evansville	1,596	1,586	\$455,937,541	\$836,534,914
Commercial	120	120	\$170,155,912	\$326,272,777

Jurisdiction (Structure Type)	Total Structure Count	Total Improved Structure Count	Total Structure Value	Estimated Content Value
Industrial	59	59	\$71,386,859	\$214,289,038
Public	4	4	\$7,901,337	\$16,055,710
Residential	1,188	1,183	\$157,513,601	\$196,892,001
Midwest	225	220	\$48,979,832	\$83,025,388
Commercial	5	5	\$3,783,786	\$7,348,183
Industrial	2	2	\$1,731,753	\$5,628,196
Public	7	7	\$19,101,049	\$39,594,953
Residential	211	206	\$24,363,244	\$30,454,055
Mills	2,322	2,311	\$713,931,887	\$1,467,266,439
Commercial	297	289	\$282,667,020	\$571,612,549
Industrial	188	186	\$183,240,917	\$564,748,369
Public	13	13	\$26,089,141	\$53,487,008
Residential	1,824	1,823	\$221,934,810	\$277,418,513
Unincorporated	8,090	8,014	\$2,928,277,960	\$5,810,152,882
Commercial	893	851	\$845,711,220	\$1,681,205,085
Industrial	712	701	\$795,755,665	\$2,472,941,152
Public	38	33	\$61,020,916	\$123,768,946
Residential	6,447	6,429	\$1,225,790,159	\$1,532,237,698
Total	37,295	37,160	\$12,058,152,603	\$20,860,231,029

DAM / LEVEE INCIDENT

There are 98 total dams / levees in Natrona County, eight of which pose high hazard potential and ten that pose significant hazard potential. Notably, Badwater Creek Dam and Cardine Keith dam, which both pose high hazard potential, have been assessed to be in poor condition. **TABLE 95** describes the other high hazard potential dams.

Table 95 Dams

Dam Name	City	Distance to Nearest City (Miles)	River or Stream Name	Hazard Potential Class	Condition	EAP
Badwater Creek Dam	Arminto	0.75	Unnamed Draw	High	Poor	Yes
Pathfinder Dike	Casper	0	North Platte River Offstream	High	Unavailable	Yes
Cardine Keith	Glenrock	23	Skeen Creek	High	Poor	Yes
Alcova	Casper	30	North Platte River	High	Unavailable	Yes
Eastgate	Hat Six road	1	Jones Draw	High	Unavailable	Yes
Pathfinder	Casper	45	North Platte River	High	Unavailable	Yes
McMurry No. 4	Casper Country Club	1	Elkhorn Creek	High	Satisfactory	Yes
Eastdale Creek Detention No.2	Casper	0	Holman Draw	High	Fair	Yes

PREVIOUS OCCURRENCES

The Wyoming State Hazard Mitigation Plan 2021- 2026 highlights a particular event on March 1, 1906, where flooding along the North Platte River near Casper, resulting from snow/ice melt, caused a diversion dam to fail. A stream returned to its natural channel with a culvert too small to handle the flood, causing the water to rise against a railroad embankment. The embankment failed. Twelve were killed in a train wreck when the railroad bridge was damaged.

In September of 1982, the Shriner Reservoir Dam along the South Casper Creek was reported as having completely failed. No impacts were recorded from this failure.

Snow melt flooding caused another dam to fail in 1984. Dozens of residences, businesses, and farms were impacted for a total of \$5 million in damages to the area.

LOCATION

FIGURE 32 presents the location of dams across the county, in addition to those dam inundation areas that have currently been mapped. **FIGURE 33** shows the only mapped levee inundation areas, which are all located within the City of Casper.

Figure 32 Dam Inundation Areas

Natrona County - Dikes and Dam & Levee Inundation Areas

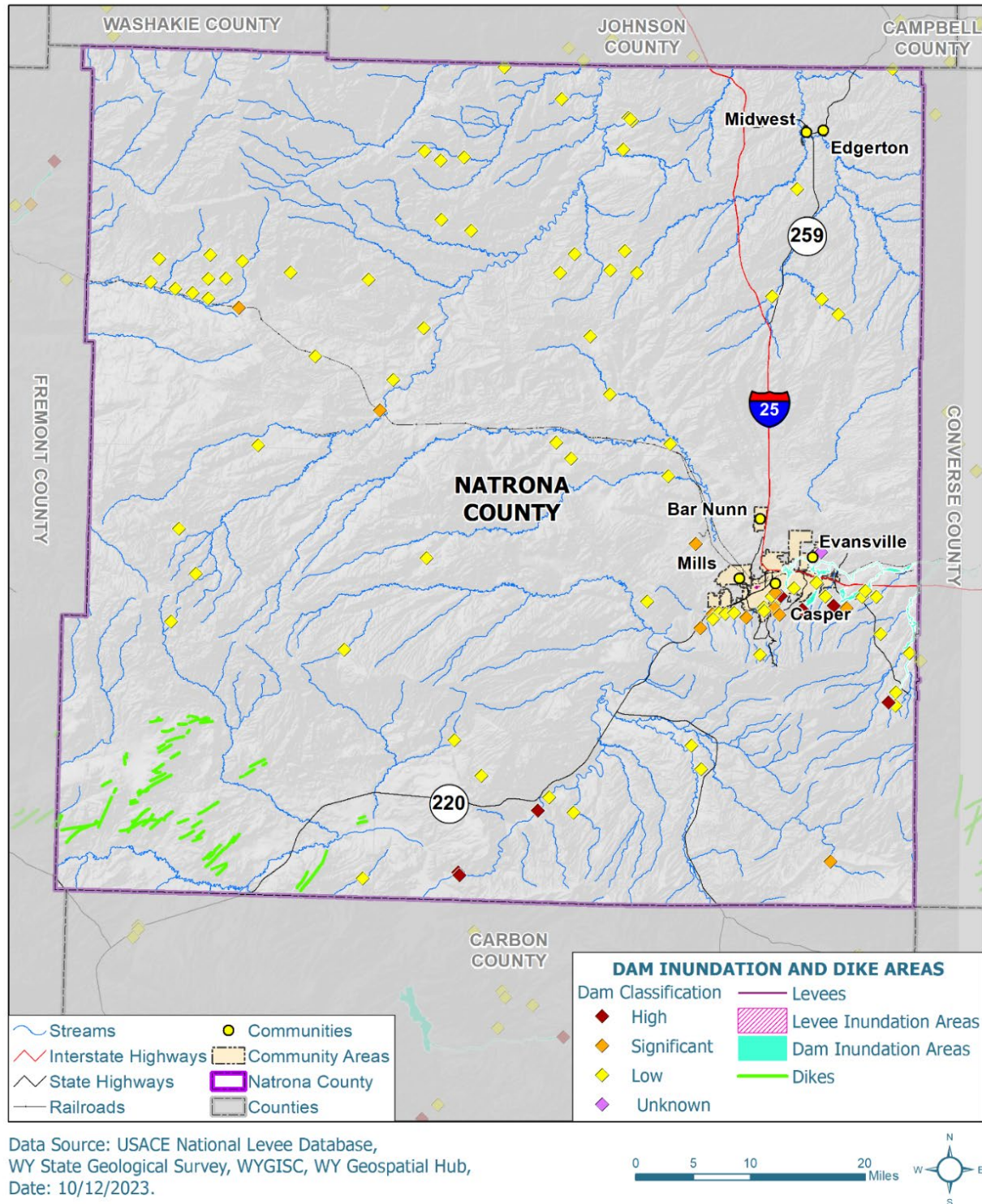
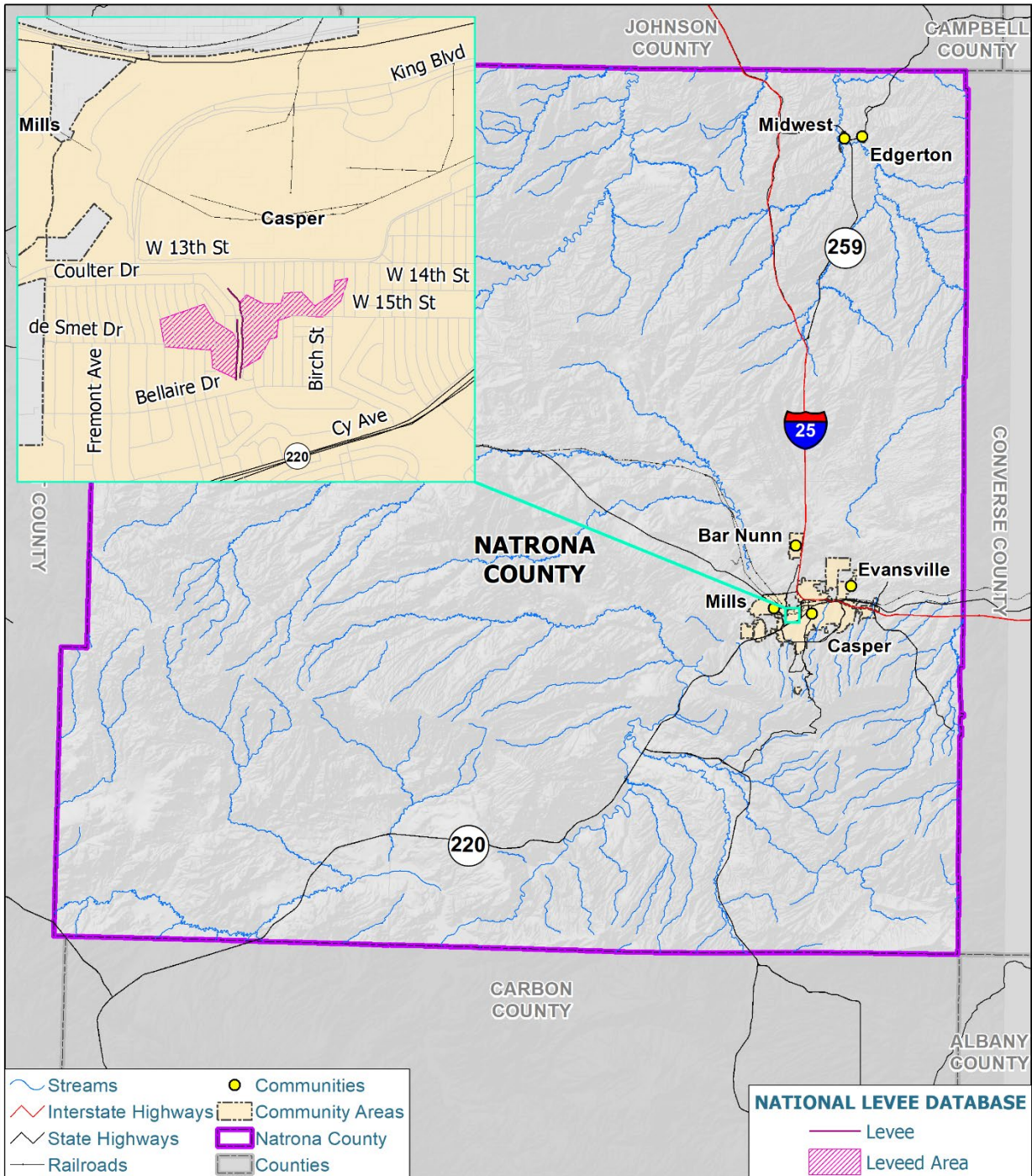


Figure 33 Leveed Protected Areas

Natrona County - Leveed Areas



Data Source: WY State Geological Survey, WYGISC, WY Geospatial Hub,
Date: 9/18/2023.



EXPOSURE AND VULNERABILITY

Through development of the dam inundation risk assessment, the county identified no data limitations. All readily available data was incorporated into this plan. It was noted that one existing gap is the ability of first responders to utilize inundation mapping at the operational level.

Lifelines

Many Lifelines can be at risk from the effects of a dam or levee incident and resulting flooding; however, Food, Hydration, & Shelter will see the greatest immediate impact. A reservoir that serves as the primary source of drinking water can be disrupted or halted entirely, affecting the day-to-day lives of those who rely on the source, not only those who are in close proximity downstream of the dam. An incident may displace community members which could be for a short period or an extended duration, if a home is destroyed.

Other Lifelines that can be affected are Energy, Communications, and Transportation. If a dam is used to generate power, the disruption of delivery to communities would impact daily operations and potentially Communications. If Communication infrastructure is damaged, the disruption or failure of communications can be dangerous for the community, as they may not receive alerts and dispatch can be interrupted. This would also greatly hinder response efforts.

Transportation system damage and interruptions can interfere with evacuations and incident response, including emergency services. If Transportation and Communications are affected, the impact on the Health and Medical Lifeline can be extensive. The Hazardous Material Lifeline can be affected also, as flood waters can lead to release of materials, from facilities downstream and private properties, especially unsecured propane tanks.

TABLE 96 details the Lifelines that are located in dam inundation areas. There are no lifelines located in mapped levee protected areas.

Table 96 Lifelines in Dam Inundation Areas

Lifeline	Bar Nunn	Casper	Edgerton	Evansville	Midwest	Mills	Unincorporated	Total
Communications	0	0	0	0	0	0	0	0
Energy	0	0	0	0	0	0	2	2

Lifeline	Bar Nunn	Casper	Edgerton	Evansville	Midwest	Mills	Unincorporated	Total
Energy (Miles)	-	-	-	0.1	-	-	0.4	0.5
Food, Hydration, & Shelter	0	1	0	0	0	0	0	1
Health & Medical	0	0	0	0	0	0	0	0
Safety & Security	0	0	0	0	0	0	0	0
Transportation	0	1	0	3	0	0	3	7
Transportation (Miles)	-	0.9	-	0.7	-	-	1.7	3.3

People

Based on the structure exposure analysis in the following section, it is estimated that ~144 people (2.4 per household for Converse County) live in dam inundation areas (all in unincorporated areas). This does not take into account other people who might be in those areas at the time of an event.

Those in the community with access and functional needs (AFN), located downstream in dam inundation areas (or within levee protected areas), may be incapable of evacuating the area within the necessary time frame. This population includes elderly people, people with disabilities and mobility issues, those with independent living difficulty, those who are institutionalized and those without means of transportation. Non-English speaking populations are also included as communications and emergency messaging may not be available in languages other than English. In general, anyone who does not have adequate access to warnings from an emergency warning system may be disproportionately impacted by the hazard.

Structures

All hazard potential classes of dams pose a risk to properties downstream. Vulnerable properties are those closest to, or within, the dam inundation or levee protected areas. Based on an evaluation of best available structure footprint data for the county, there are numerous properties within levee inundation areas. Currently, much of the downtown area is protected by levees from the 100-year flood.

Property damages range greatly after a dam or levee incident, based on the severity of the water release. Structures can be completely washed away or flooded by a relatively

small level of water. Any flood has the potential to render buildings uninhabitable, either permanently or for a temporary period while clean up occurs.

Agricultural lands can be greatly affected and depending on the time of year crop loss could be severe. Roads and bridges may become impassable and potentially need repairs.

Dam / levee incidents also cause damage to infrastructure. Roads or railroads that are blocked or damaged can isolate residents and can prevent access throughout the county. This is especially critical for those needing emergency service providers or for getting crews in to make repairs. Bridges washed out or blocked by floods or debris can also cause isolation. Utilities including power lines, cable, and phone lines may be knocked down or rendered unusable by the waters.

Water and sewer systems can be affected by flooding. Floodwater can back up drainage systems, causing localized flooding. Culverts can be blocked by debris from flood events, also causing localized flooding. Floodwater can get into drinking water supplies, causing contamination. Sewer systems can be backed up, causing wastewater to spill into homes, neighborhoods, rivers, and streams. Underground utilities can also be damaged.

To assess the exposure and vulnerability of structures in Natrona County, **TABLE 97** records the structure counts as well as the valuation of these structures located in dam inundation areas and **TABLE 98** records those in levee protected areas.

Table 97 Structures in Dam Inundation Areas

	Total Structure Count	Total Improved Structure Count	Total Structure Value	Estimated Content Value
Bar Nunn	-	-	\$-	\$-
Casper	-	-	\$-	\$-
Edgerton	-	-	\$-	\$-
Evansville	-	-	\$-	\$-
Midwest	-	-	\$-	\$-
Mills	-	-	\$-	\$-
Unincorporated	60	60	\$36,275,145	\$62,670,738
Commercial	15	15	\$7,979,399	\$15,958,797
Industrial	4	4	\$5,671,129	\$18,431,169

	Total Structure Count	Total Improved Structure Count	Total Structure Value	Estimated Content Value
Public	41	41	\$22,624,617	\$28,280,772
Residential	60	60	\$36,275,145	\$62,670,738
Total	60	60	\$36,275,145	\$62,670,738

Table 98 Structures in Individual Leveed Area

	Total Structure Count	Total Improved Structure Count	Total Structure Value	Estimated Content Value
Bar Nunn	-	-	\$-	\$-
Casper	109	109	\$11,516,983.93	\$14,415,213.98
Residential	108	108	\$11,441,048	\$14,301,309
Commercial	1	1	\$75,936	\$113,904
Edgerton	-	-	\$-	\$-
Evansville	-	-	\$-	\$-
Midwest	-	-	\$-	\$-
Mills	-	-	\$-	\$-
Unincorporated	-	-	\$-	\$-
Total	109	109	\$11,516,983.93	\$14,415,213.98

Natural, Historic, and Cultural Resources

Dam incidents pose a great risk to the environment in the affected area. Flooding can change the local ecosystem, including permanent displacement of animals and extensive damage to vegetation. Damage to vegetation can contribute to erosion of riverbanks. Erosion can alter the waterway and push silt and debris downstream. The environment

closest to the incident will likely be the most impacted; however, the repercussions of flooding can be felt much farther downstream.

Reservoirs held behind dams, and rivers held behind levees affect many ecological aspects of a river. River topography and dynamics depend on a wide range of flows. Rivers below dams often experience long periods of very stable flow conditions, or saw-tooth flow patterns, caused by releases followed by no releases. Water releases from dams usually contain very little suspended sediment and this can lead to scouring of riverbeds and banks.

Local Vulnerability

Depending on the severity of a dam / levee incident there can be drastic effects on the county and regional economies, as well as financial issues for affected residents. Repairs to the dam itself can be considerable and many costs can fall to local agencies, businesses, and private owners. These costs could be considerable if the structures are not insured for floods. Any resulting damage downstream can affect daily operations for an extended period and has the potential to impact critical aspects of the economy such as recreation areas and tourist destinations.

Roads and infrastructure needed for day-to-day operations may be damaged. The transport of goods and travel across the county could be impacted, affecting the supply chain for local industry and the ability for residents to commute. **TABLE 99** provides additional vulnerability information identified by each local government.

Table 99 Local Government Vulnerability

Local Government	Local Vulnerability
Bar Nunn	The town will never be directly impacted by a dam inundation event.
Casper	Critical infrastructure within inundation areas.
Evansville	Most of the town is built next to the North Platte River, these areas would be most impacted by an upstream event. The water plant would be unable to function.
Mills	The water treatment plant would be most impacted by an event.
Natrona Co. Fire	An incident at Pathfinder Dam would have impacts to all structures and infrastructure.
Casper Mountain Fire	Reduced communications capabilities due to loss of power supply.
Unincorporated County	An incident at Pathfinder Dam would have impacts to all structures and infrastructure, including critical infrastructure, along the North

Local Government	Local Vulnerability
	Platte River.

FUTURE TRENDS IN DEVELOPMENT

Any development downstream of dams in Natrona County could increase risk and possibly elevate the dam hazard potential classifications. It is crucial to consider the hazards posed by dams and levees when making any future development and construction decisions, to ensure new construction does not increase the county's risk to dam / levee incidents.

TABLE 100 provides additional information identified by each local government.

Table 100 Local Government Population Trends

Local Government	Local Population Trends
Bar Nunn	No population change has recently occurred, or is expected, which would impact hazard vulnerability.
Casper	Any population growth within known or unknown inundation areas will increase the community's collective vulnerability.
Evansville	No population change has recently occurred, or is expected, which would impact hazard vulnerability.
Mills	No population change has recently occurred, or is expected, which would impact hazard vulnerability.
Unincorporated County	Population in the unincorporated areas of the county did not increase, nor are major increases expected in the future. Overall vulnerability has not increased, nor is expected to, due to development.

PROBABILITY OF FUTURE OCCURRENCES

The likelihood of future events increases based on multiple factors including age, correct operation and regular maintenance, and inspections of dam infrastructure. With the added issue of severe weather events, all dams, many of which may be well maintained and functional, can potentially have more incidents, especially overtopping or spillway discharges.

Between 1906 and 2023, there were three recorded dam failures within the county, predicting a 3% chance of a dam failure occurring annually.

DROUGHT

PREVIOUS OCCURRENCES

The county has experienced several multi-year droughts over the past several decades. The most severe statewide drought in recent history started in 1999, but began in earnest in the spring of 2000 and lingered through 2004. 2005 was a wetter year, technically signifying the end of the drought period. Dry conditions returned in the following years and became especially severe between 2006 and 2007. According to the Wyoming State Climate Office, “conditions eased somewhat in mid-2008, but a near decade with warm temperatures and relatively little precipitation has left [Wyoming] very vulnerable”.⁸ Another particularly intense but short drought occurred in 2012.

The 1999-2004 drought is considered by many to be the most severe in collective memory. According to instrument records, since 1895 there have been seven multi-year (three years or longer) statewide droughts. **TABLE 101** presents multi-year drought events from least to most precipitation.

Table 101 Significant Multi-Years Wyoming Droughts

Years	Average Annual Precipitation (inches)	Percent of 1985-2006 Average Annual Precipitation (13.04")
1952-1956	10.65	81.69%
1900-1903	10.76	82.52%
1999-2004	11.07	84.89%
1987-1990	11.12	85.28%
1958-1964	11.67	89.49%
1974-1977	11.77	90.26%
1931-1936	11.79	90.41%

The county has experienced five USDA drought declarations as shown in **Table 4**.

⁸ [Wyoming Drought - Wyoming Water Resources Data System and State Climate Office - Snow, Water, Climate data \(uwyo.edu\)](#)

LOCATION

Drought is a regional phenomenon that can affect all areas of the county and participating jurisdictions with similar frequency and severity; however, this can vary across the county.

EXPOSURE AND VULNERABILITY

Lifelines

The Lifeline most impacted by a drought event is Food, Hydration, & Shelter which includes Agriculture. Droughts can affect people and their livelihoods in a multitude of ways. Most critically, a drought can be detrimental to the supply of drinking water and available water for agricultural use. If a drought affects agricultural yields, food scarcity can become an issue. The bigger impact is financial, as a decimated harvest can harm the local farmers, regional economy, and influence the greater market for a crop.

The Health and Medical Lifeline can be impacted in the public health area, as drinking water quality and availability can quickly be affected in a drought. If availability is an issue, medical facilities may not be able to perform the necessary duties due to sanitary concerns.

People

The effects of water availability and quality on public health is the primary concern in a drought. The immediate concern of availability of safe drinking water during the drought affects everyone in the affected region. Extreme heat that may accompany a drought can be dangerous for community members, especially for the elderly, children, those with chronic health conditions, and those who do not have a way to cool their homes.

Those with breathing difficulties may be impacted if soil is dry and strong winds occur in the area, as air quality can worsen due to dust particles.

Structures

The majority of buildings and infrastructure are typically not affected by drought as they do not depend on water for functionality or stability. However, any power infrastructure that uses water to produce electricity for communities, such as the hydroelectric component of dams, could be greatly impacted by an extended drought. If water levels are insufficient for generating the necessary power, operations may be halted.

Natural, Historic, and Cultural Resources

The geographic extent of drought can be far reaching, and the effects can vary greatly across the impacted areas. In the region, abnormally low precipitation over an extended period puts stress on all ecosystems. As waterways decrease in flow, fish and aquatic plants can suffer and it may be difficult to recover the populations. Vegetation acting as food for animals and important binding for soils can dry out and struggle to grow back. Animals in search of water and food may have to travel farther, which can affect migration and breeding. Natural areas such as wetlands that play an important role in the overall health of the environment can be destroyed if water levels decrease. The risk of wildfires

increases as fuel dries out and becomes easier to ignite. Soil erosion resulting from dying vegetation can impact air quality, as strong winds pick up the dry dust.

Local Vulnerability

Natrona is dependent on agricultural activity for a significant portion of its economic base. The lack of precipitation caused by drought can drastically impact the economy of the county. The loss of crops and livestock due to drought has compounding and long-term consequences for the local economy.

Lack of water, for irrigation and watering livestock, can affect the quality of water that is available as higher salinity concentrations result from water level drops. The lack of water availability will increase costs further limiting the value of the products.

Productivity of crop lands is reduced by drought which decreases yield, and results in crops of lower quality. The income loss for farmers due to a devastated harvest can be felt by the local and regional economies and can last an extended period depending on the length of the drought and possibility of recovery.

Manufacturing, recreation, and commercial and domestic use can also be impacted by drought. Depending on the needs of a sector, poor water quality could result in higher costs to obtain water from acceptable sources.

TABLE 102 provides additional vulnerability information identified by each local government.

Table 102 Local Government Vulnerability

Local Government	Local Vulnerability
Bar Nunn	Impacts to the ranching community, which would harm the local economy.
Casper	Water treatment system, an event could impact the ability to produce potable water.
Evansville	Availability of water for the water plant for potable water.
Mills	The municipal water delivery and water treatment facility would experience the greatest impacts from an event.
Natrona Co. Fire	Impacts to the ranching community, which would harm the local economy.
Casper Mountain Fire	Potential of limited water resources available for fire suppression.
Unincorporated County	Impacts to the ranching community, which would harm the local

Local Government	Local Vulnerability
	economy.

FUTURE TRENDS IN DEVELOPMENT

Water in the county is sourced from “surface waters”, such as creeks, streams, lakes, and reservoirs and drought can drastically impact the population as these sources fluctuate. Leadership has an obligation to the county and communities to mitigate against drought and foster resilience in water management. Developing water management infrastructure, policies, codes, and public education can help to ensure that drought has a lessened effect as development continues. Addressing the pertinent issues during the development stage can help to avoid stressing the water supply unnecessarily.

TABLE 103 provides additional information identified by each local government.

Table 103 Local Government Population Trends

Local Government	Local Population Trends
Bar Nunn	No population change has recently occurred, or is expected, which would impact hazard vulnerability.
Casper	Any increases in population will increase the community’s collective vulnerability.
Evansville	No population change has recently occurred, or is expected, which would impact hazard vulnerability.
Mills	No population change has recently occurred, or is expected, which would impact hazard vulnerability.
Unincorporated County	Population in the unincorporated areas of the county did not increase, nor are major increases expected in the future. Overall vulnerability has not increased, nor is expected to, due to development.

PROBABILITY OF FUTURE OCCURRENCES

The relatively steady issuing of USDA disaster declarations over the last 15 years, as presented in **Table 4**, suggests it is likely the county will continue to experience drought substantial enough to need aid. It should also be noted that the counties have been contiguous to others that have received additional declarations.

The county has received five drought declarations since 2012, which equates to a 45% annual chance of a notable event occurring.

EARTHQUAKE

PREVIOUS OCCURRENCES

In 1984, a series of earthquakes were recorded in northern Albany County. The most significant earthquake to occur in the area occurred on October 18, 1984. This magnitude 5.5, intensity VI event was centered approximately 44 miles southeast of Casper. It was felt in Wyoming, South Dakota, Nebraska, Colorado, Utah, Montana, and Kansas. Stover (1985) reports that cracks were found in the exterior brick walls of the Douglas City Hall and a public school in Medicine Bow. Chimneys were cracked at Casper, Douglas, Guernsey, Lusk, and Rock River. A wall in a Laramie-area school was slightly cracked by the earthquake. The earthquake was one of the largest felt in eastern Wyoming. **TABLE 104** records the aftershocks of this event. **TABLE 105** highlights additional seismic events in the county since 1873.

Table 104 1984 Aftershocks

Date	Magnitude / Intensity
October 18, 1984	4.5, IV and 3.8 events
October 19, 1984	3.3
October 20, 1984	3.5
October 22, 1984	3.1
October 24, 1984	3.2
November 6, 1984	3.3
December 5, 1984	2.9

Table 105 Notable Seismic Events

Date	Magnitude / Intensity
December 10, 1873	Intensity III
On December 10, 1873, approximately 2 miles south of Powder River, people in the area reported feeling the earthquake as an intensity III event. Two of the earliest recorded earthquakes in Wyoming occurred near Casper.	

Date	Magnitude / Intensity
June 25, 1894	Intensity V
An estimated intensity V earthquake was reported approximately 3 miles southwest of Evansville. Residents on Casper Mountain reported that dishes rattled to the floor and people were thrown from their beds. Water in the Platte River changed from fairly clear to reddish, and became thick with mud due to the riverbanks slumping into the river during the earthquake (Mokler, 1923).	
November 14, 1897	Intensity VI-VII
An even larger earthquake was felt in the same area on November 14, 1897. This intensity VI-VII earthquake, one of the largest recorded in central and eastern Wyoming, caused considerable damage to a few buildings. As a result of the earthquake, a portion of the Grand Central Hotel was cracked from the first to the third story. Some of the ceilings in the hotel were also severely cracked. In another part of Casper, a person sitting in a chair was thrown to the floor (Mokler, 1923).	
October 25, 1922	Intensity IV-V
On October 25, 1922, an intensity IV-V earthquake was detected approximately 6 miles north-northeast of Barr Nunn. The event was felt in Casper; at Salt Creek, 50 miles north of Casper; and at Bucknum, 22 miles west of Casper. Dishes were rattled and hanging pictures were tilted near Salt Creek. No significant damage was reported at Casper (Casper Daily Tribune, October 26, 1922).	
December 11, 1942	Intensity IV-V
One of the first earthquakes recorded near Midwest occurred on December 11, 1942. The intensity IV-V event occurred approximately 14 miles south of Midwest. Although no damage was reported, the event was felt in Casper, Salt Creek, and Glenrock (Casper Tribune-Herald, December 12, 1942).	
August 27, 1948	Intensity IV
On August 27, 1948, another intensity IV earthquake was detected approximately 6 miles north-northeast of Bar Nunn. No damage was reported (Casper Tribune-Herald, August 27, 1948).	
January 23, 1954	Intensity IV
On January 23, 1954, an intensity IV earthquake occurred approximately 7 miles northeast of Alcova. Although this event did not result in any reported damage, one area resident reported that he thought that an intruder in the attic of his house had fallen down (Casper Tribune-Herald, January 24, 1954).	

Date	Magnitude / Intensity
August 19, 1959	Intensity IV
On August 19, 1959, an intensity IV earthquake was recorded north of Casper, approximately 6 miles north-northeast of Bar Nunn. People in Casper reported feeling this event (Reagor, Stover, and Algermissen, 1985). It is uncertain if this earthquake actually occurred in the Casper area, as it coincides with the Hebgen Lake, Montana, earthquakes that initiated on August 17, 1959.	
January 8, 1968	Magnitude 3.8
On January 8, 1968, a magnitude 3.8 earthquake occurred approximately 10 miles north-northwest of Alcova. No damage was reported.	
March 9, 1993	Magnitude 3.2
A magnitude 3.2 earthquake was recorded 17 miles west of Midwest. No damage was reported	
November 9, 1999	Magnitude 3.1
A magnitude 3.1 earthquake also occurred in the far northwestern corner of the county on November 9, 1999. No one reported feeling this earthquake that was centered approximately 32 miles northwest of Waltman.	
February 1, 2003	Magnitude 3.7
On February 1, 2003, a magnitude 3.7 earthquake occurred approximately 16 miles north-northeast of Casper. Numerous Casper residents felt this event. One person reported feeling two jolts in rapid succession.	

TABLE 106 reports events that have occurred near Natrona County.

Table 106 Seismic Events Near Natrona County

Date	Magnitude / Intensity	Location	Damages
August 11, 1916	III	Fremont County	None Reported
August 27, 1938	III	Albany County	None Reported
June 3, 1965	4.7	Johnson County	None Reported

Date	Magnitude / Intensity	Location	Damages
May 11, 1967	4.8	Campbell County	None Reported
April 22, 1973	4.8, V	Fremont County	Rattled dishes, pictures on the wall
May 29, 1973	Not specified	Carbon County	None Reported
December 19, 1975	3.5	Fremont County	None Reported
December 30, 1975	Not specified	Fremont County	None Reported
June 6, 1978	4.0	Hot Springs County	None Reported
November 15, 1983	3.0, III	Converse County	None Reported
October 18, 1984	5.5, VI	Albany County	Cracks in brick walls, chimneys, walls
June 12, 1986	3.0	Albany County	None Reported
June 1, 1993	3.8, III	Fremont County	None Reported
October 9, 1993	3.7, IV	Albany County	None Reported
October 19, 1996	4.2	Converse County	None Reported
December 11, 1996	3.4	Fremont	None Reported
February 1, 2000	3.0	Carbon County	None Reported
April 13, 2000	3.3	Albany County	None Reported
May 26, 2000	4.0	Sweetwater County	None Reported
May 30, 2000	3.2	Sweetwater County	None Reported
November 8, 2000	3.0	Fremont County	None Reported

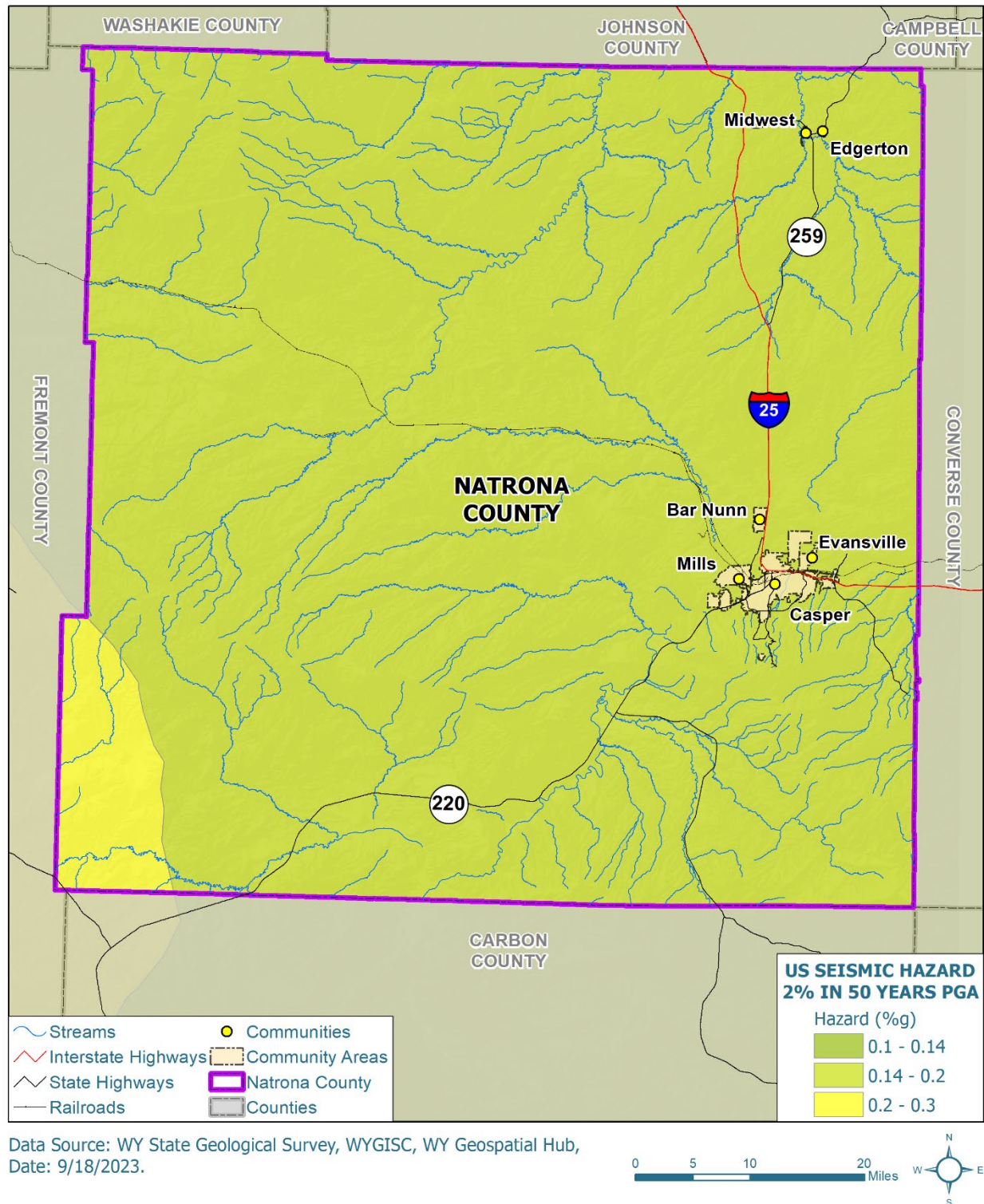
LOCATION

Earthquakes have the potential to impact all areas of the county. Peak ground acceleration (PGA) is a measure of the maximum force experienced by a small mass located at the

surface of the ground during an earthquake. A higher PGA roughly equates to more intense shaking. **Figure 34** illustrates the PGA for Natrona County.

Figure 34 Peak Ground Acceleration

Natrona County - Earthquake PGA



EXPOSURE AND VULNERABILITY

Lifelines

All Lifelines can be impacted significantly by an earthquake. Even with minimal damage Food, Hydration, & Shelter can be greatly affected due to need for sheltering displaced individuals, the likelihood of water pipelines leaking and breaking, and the possible contamination of the drinking water supply.

Infrastructure damage to Communications, Energy, and Transportation can range from minimal impacts on functionality to systems completely unable to provide information and power to the community. Transportation can be slowed by small upheavals in pavements or completely halted due to downed bridges or impassable roadways.

Health and Medical operations can be disrupted due to building damage or inability to transport patients. Fatality management may be needed on a large scale. Safety and Security may be unable to meet community needs if there is building or equipment damage. Hazardous Materials have the potential to be released from facilities or impacted in transit.

People

All people in the county are at risk to earthquakes. Depending on the location, magnitude, and other characteristics of the event, the effect on life safety can vary drastically. In a populated, developed area the risk of people being harmed is much higher than in an event that affects a rural area. Community members residing in multi-unit structures are vulnerable to the impacts of earthquakes, especially if their building is unstable or not built to current building codes.

Structures

There are many factors that affect the property damage an earthquake is capable of inflicting. Age and type of a building, as well as the materials used in construction all contribute to the likelihood of withstanding an earthquake with minimal damage. Historic buildings are especially at risk for these reasons.

Buildings constructed to meet updated codes or retrofitted to bring them up to code are at an advantage if an event were to happen. These codes are rated to a certain level of seismic activity; however, if an event of higher magnitude happens, serious damage is still possible.

Earthquakes can also rupture pipeline leading to sink holes causing damages to roads. Seismic waves can also cause damages to bridges, tunnels, sewer lines, and railways.

Damages from an earthquake can be broad, from minor cosmetic cracking to rendering a building uninhabitable. The variables of an event, as well as characteristics and the specifics of each building make estimation of damages difficult.

Based on 2,500 year probabilistic modeling of a 5.5 magnitude event, FEMA's Hazus loss estimation tool estimates the following. The full

Earthquake Hazus Risk Report can be found later in this annex.

- Most structures will experience no (32,440) or slight (3,407) damage from a seismic event.
- 52 households will be displaced as a result of an earthquake.
- 25 persons will seek temporary public shelter after an earthquake event.
- The majority of casualties will be level 1 (Injuries will require medical attention but hospitalization is not needed), mostly occurring at 2pm.

Natural, Historic, and Cultural Resources

Earthquakes can change the very landscape of an environment, as ground openings, liquefaction, and landslides are possible. Wildlife may leave the area for an extended period, especially if an ecosystem is impacted. The secondary impacts of a dam failure or fire being ignited could have devastating effects in addition to the damage from the earthquake.

Local Vulnerability

Earthquakes have the potential to impact the economy on a large scale. Depending on the magnitude and location of the earthquake there could be extensive damage to infrastructure, buildings, and roads. Major damage to any of these would disrupt daily operations and require considerable construction and repairs. The duration of recovery could have a significant effect on the ability of businesses to reopen.

TABLE 107 presents local government vulnerabilities to earthquake events.

Table 107 Local Government Vulnerability

Local Government	Local Vulnerability
Bar Nunn	Critical infrastructure is the top concern.
Casper	Critical infrastructure and structures.
Evansville	Infrastructure and pipeline damage would be the largest impact.
Mills	Impacts expected would include the power and gas distribution system, in addition to the sewer and water systems.
Natrona Co. Fire	Pipelines and other underground infrastructure.
Casper Mountain Fire	Possible damage to emergency radio communications towers would limit emergency communications. Potential for road closures due to debris would limit ingress/egress.

Local Government	Local Vulnerability
Unincorporated County	Critical infrastructure and structures.

FUTURE TRENDS IN DEVELOPMENT

The adopting of the most recent building codes is crucial to public safety, as growth continues and development increases. Adherence and enforcement of these codes, and ensuring the continued adoption of building code updates will ensure construction is built to withstand a seismic event. **TABLE 108** provides additional information identified by each local government.

Table 108 Local Government Population Trends

Local Government	Local Population Trends
Bar Nunn	No population change has recently occurred, or is expected, which would impact hazard vulnerability.
Casper	Any increases in population will increase the community's collective vulnerability, although the adoption of recent building codes should help to reduce fatalities.
Evansville	No population change has recently occurred, or is expected, which would impact hazard vulnerability.
Mills	No population change has recently occurred, or is expected, which would impact hazard vulnerability.
Unincorporated County	Population in the unincorporated areas of the county did not increase, nor are major increases expected in the future. Overall vulnerability has not increased, nor is expected to, due to development.

PROBABILITY OF FUTURE OCCURRENCES

Earthquakes may occur in the region, but it is difficult to know the specifics of an event. Lower magnitude events have been the most common in the region, but a larger, more devastating magnitude could occur with virtually no warning.

Between 1873 and 2023 there were 12 seismic events within Natrona County, predicting a 8% chance of a seismic event occurring annually.

EXPANSIVE SOILS

PREVIOUS OCCURRENCES

Due to the slow nature and primarily localized effects of expansive soils, they are often not reported as events. Damages within communities, such as cracking of foundations, sidewalks, roads, and parking lots are repaired and may not be attributed to expansive soils. Effects on supply lines, railways, bridges, and utility infrastructure are repaired or relocated without further investigation. Individual property owners become aware of damage to their homes and typically will handle repairs without informing towns or counties of the issue.

LOCATION

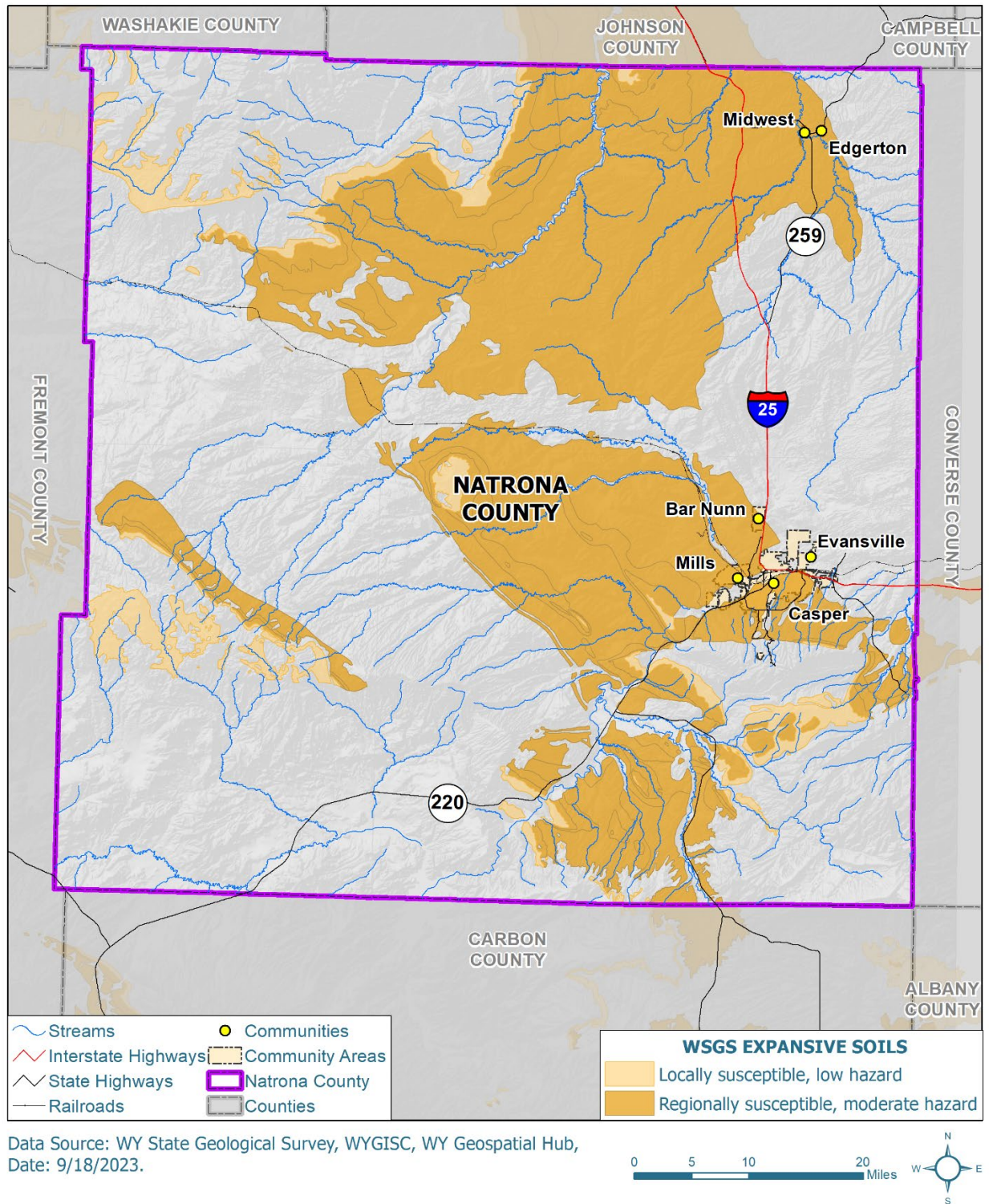
Expansive soils have been identified in multiple areas across the Region. While damage costs from expansive soils can be significant, they are typically localized and it is unlikely a large area would be impacted all at once. Due to the slow nature of soil swelling and shrinking, damages may not be apparent for years and estimating the overall costs in the affected area can be difficult.

Throughout the county numerous communities fall within identified expansive soil areas and could be impacted by this hazard. Viewing countywide and sometimes even municipal-scale maps does not provide the ability to see an individual community's specific hazard risk. Readers are urged to utilize available hazard data viewers to better understand their community's hazard risk. Expansive soil hazard information can be accessed through WY State Geological Survey's [Wyoming Geologic Hazards Map](#).

FIGURE 35 maps the location of areas locally and regionally susceptible to expansive soils in the county.

Figure 35 Expansive Soils

Natrona County - Expansive Soils



EXPOSURE AND VULNERABILITY

Lifelines

Some Lifelines have the potential to be affected by expansive soils, primarily Transportation and Energy. Shifting soils can disrupt pipelines and power infrastructure, and impact the safety of roads, railways, and bridges.

TABLE 109 shows the lifelines located in expansive soil areas.

Table 109 Lifelines in Expansive Soil Areas

Lifelines	Bar Nunn	Casper	Edgerton	Evansville	Midwest	Mills	Unincorporated	Total
Low Hazard								
Communications	-	-	-	-	-	-	-	0
Energy	-	-	-	-	-	-	-	0
Energy (Miles)	-	-	-	-	-	-	7.6	7.6
Food, Hydration, & Shelter	-	-	-	-	-	-	-	0
Health & Medical	-	-	-	-	-	-	-	0
Safety & Security	-	-	-	-	-	-	-	0
Transportation	-	-	-	-	-	-	2	2
Transportation (Miles)	-	-	-	-	-	-	1.2	1.2
Moderate Hazard								
Communications	-	1	-	-	-	1	-	2
Energy	-	-	-	-	-	-	1	1
Energy (Miles)	1.0	3.4	0.4	-	-	-	75.7	80.5
Food, Hydration, & Shelter	1	23	-	-	1	-	2	27

Lifelines	Bar Nunn	Casper	Edgerton	Evansville	Midwest	Mills	Unincorporated	Total
Health & Medical	-	4	-	-	-	-	-	4
Safety & Security	1	4	-	-	2	2	3	12
Transportation	-	2	-	-	-	1	62	65
Transportation (Miles)	-	10.7	0.5	0.6	0.7	4.7	107.3	124.5

People

There is no immediate threat to the public from expansive soils. Since there is no sudden shifting of the ground, people are able to notice changes in structures caused by the soil expansion over time. Observed changes in the structure can be addressed and repaired, or if necessary, people can be relocated. While small, there is a chance that damage to a structure would pose a threat to people if it went unnoticed for a long period and the structure failed.

Structures

Expansive soils can damage building foundations, pavement, supply lines, and utility infrastructure. **TABLE 110** outlines the properties within each jurisdiction that are exposed to expansive soils. Casper has the largest total number of exposed buildings at \$7,584,061,884 with 16,753 total buildings, 16,734 of which are improved. In total the number of buildings exposed to expansive soils in Natrona County is valued at \$272,977,179.

Table 110 Structures in Expansive Soil Areas (Moderate Hazard)

	Total Structure Count	Total Improved Structure Count	Total Structure Value	Estimated Content Value
Bar Nunn	896	896	\$187,867,949.27	\$272,977,179.44
Commercial	26	26	\$23,927,913	\$47,800,937
Industrial	13	13	\$9,060,167	\$26,189,068

	Total Structure Count	Total Improved Structure Count	Total Structure Value	Estimated Content Value
Public	3	3	\$7,183,117	\$14,366,234
Residential	854	854	\$147,696,752	\$184,620,941
Casper	16,753	16,734	\$4,983,183,657.61	\$7,584,061,884.39
Commercial	1,002	987	\$1,200,704,479	\$2,430,287,655
Industrial	153	153	\$90,402,259	\$264,491,159
Public	119	116	\$358,608,009	\$722,446,933
Residential	15,479	15,478	\$3,333,468,910	\$4,166,836,138
Edgerton	149	149	\$48,919,018.40	\$107,850,255.33
Commercial	25	25	\$17,033,035	\$34,669,995
Industrial	13	13	\$16,031,857	\$51,088,459
Public	5	5	\$3,032,192	\$6,064,385
Residential	106	106	\$12,821,934	\$16,027,417
Evansville	23	22	\$28,254,486.17	\$51,684,884.86
Commercial	17	17	\$26,697,472.21	\$49,137,527.14
Industrial	1	1	\$300,545.13	\$976,771.68
Public	5	4	\$1,256,468.83	\$1,570,586.04
Residential	225	220	\$48,979,832.32	\$83,025,387.96
Midwest	5	5	\$3,783,786.42	\$7,348,183.34
Commercial	2	2	\$1,731,752.70	\$5,628,196.28
Industrial	7	7	\$19,101,049.25	\$39,594,953.40

	Total Structure Count	Total Improved Structure Count	Total Structure Value	Estimated Content Value
Public	211	206	\$24,363,243.95	\$30,454,054.95
Residential	1,485	1,477	\$443,738,750.48	\$916,226,144.16
Mills	200	192	\$174,498,145.86	\$350,613,570.18
Commercial	146	146	\$121,104,588.08	\$368,726,681.33
Industrial	7	7	\$13,876,193.53	\$29,061,113.88
Public	1,132	1,132	\$134,259,823.00	\$167,824,778.77
Residential	3,927	3,883	\$1,640,745,299.29	\$3,330,361,897.91
Unincorporated	562	533	\$564,968,207.82	\$1,114,790,224.06
Commercial	421	414	\$470,875,080.06	\$1,432,143,700.47
Industrial	19	17	\$34,414,195.02	\$70,318,202.97
Public	2,925	2,919	\$570,487,816.38	\$713,109,770.42
Residential	23,458	23,381	\$7,381,688,993.54	\$12,346,187,634.05
Total	896	896	\$187,867,949.27	\$272,977,179.44

Natural, Historic, and Cultural Resources

Soil expansion does not have a large immediate impact on the environment as the effects occur over extended periods. Overall, expansive soils have the potential to alter the landscape of an area, but not drastically and should not affect wildlife and plant life in an ecosystem.

Local Vulnerability

A regional economic impact is highly unlikely. If transportation routes, power infrastructure, or pipelines are damaged it could result in costs for repair or relocation, which may be a local or private responsibility.

TABLE 111 provides additional vulnerability information identified by each local government.

Table 111 Local Government Vulnerability

Local Government	Local Vulnerability
Bar Nunn	Damages to utilities would most impact water/sewer and gas/natural gas/oil lines.
Casper	Damages to utilities would most impact water/sewer and gas/natural gas/oil lines.
Evansville	Very low impacts but would affect facilities and critical infrastructure.
Mills	One area in the SSW section of the city would experience the worst impacts from an event.
Natrona Co. Fire	Damages to utilities would most impact water/sewer and gas/natural gas/oil lines.
Casper Mountain Fire	Very limited impacts to a few structures.
Unincorporated County	Damages to utilities would most impact water/sewer and gas/natural gas/oil lines.

FUTURE TRENDS IN DEVELOPMENT

As development trends continue, the proper identification of expansive soil areas will be critical to new development being safe and sustainable over decades. All new developments in the region should be aware of this need for identification and enforce building codes and mitigation measures accordingly. **TABLE 112** provides additional information identified by each local government.

Table 112 Local Government Population Trends

Local Government	Local Population Trends
Bar Nunn	No population change has recently occurred, or is expected, which would impact hazard vulnerability.
Casper	Any increases in population will increase the community's collective vulnerability.
Evansville	No population change has recently occurred, or is expected, which

Local Government	Local Population Trends
	would impact hazard vulnerability.
Mills	No population change has recently occurred, or is expected, which would impact hazard vulnerability. Any future growth in the SSW portion of would increase risk.
Unincorporated County	Population in the unincorporated areas of the county did not increase, nor are major increases expected in the future. Overall vulnerability has not increased, nor is expected to, due to development.

PROBABILITY OF FUTURE OCCURRENCES

Expansive soils do not change composition and therefore are always capable of swelling and shrinking. Due to this, soils can impact buildings and infrastructure in the region over years. This likelihood can increase if new development is built in expansive soil areas without addressing the risks posed by the hazard. There is a 100% chance that expansive soils will impact some portion of the county in a given year.

FLOOD

PREVIOUS OCCURRENCES

There have been many notable and damaging flood events across the county since 1895. A flood event on July 3, 2009, caused by a severe thunderstorm caused \$5,000,000 in property damages. Since then, further events have caused significant damages. On June 15, 2023, slow moving thunderstorms dumped heavy rain on Natrona County, the subsequent flooding caused \$2,866,000 in property damages.

TABLE 113 highlights notable flood events that have occurred in the county beginning in 1895 provided by the University of Wyoming⁹.

Table 113 Notable Flood Events

Date	Damages
July 1895	3 Lives Lost
Greatest recorded flood produced a 20-foot-high wall of water sweeping down Garden Creek, wiping out camp of settlers at present-day Westwood School. Three people drowned.	

⁹ [Map Mod - Natrona County \(uwyo.edu\)](https://www.uwyo.edu/mapmod/natrona-county/)

Date	Damages
March 1, 1906	12 Lives Lost
Casper - Flooding resulting from snow/ice melt, a diversion dam giving way, a stream returned to natural channel culvert too small to handle flood, rose against railroad embankment, earth gave way. Twelve were killed in a train wreck and a railroad bridge was damaged.	
September 27, 1923	18 Lives Lost
North Platte River - Five days of widespread rainfall caused a 60- to greater than 100-year flood resulting in a railroad bridge washed out east of Casper. The event took 18 lives.	
July 6, 1961	
High intensity rain showers caused considerable flash flooding in Casper and vicinity with numerous houses, cars and streets damaged. Some crop land damaged.	
June 15, 1962	
Casper - Several inches of 1- to 2-inch hail along with heavy rain caused considerable damage to range land, and to flocks of sheep in the area. Flash flooding occurred with resultant damage to roads and bridge.	
July 15, 1967	\$1,000,000 property
Over 2 inches of rain in less than 2 hours caused flash flooding in Casper with damage to houses, stores, lawns, cars, etc. (WEMA Flood damage inventory, storm data)	
July 16, 1968	
Nearly 1.5 inches of rain in an hour caused flash flooding in the central portion of Casper with damage to houses, lawns, streets, cars, and utilities.	
July 6, 1971	
West of Casper the heaviest damage reported in suburban Red Butte Village. Some homes were demolished.	
June 23, 1974	
Casper - Heavy rain with soft hail up to 2.75 inches caused damage to houses, trees, and cars. Rain caused brief minor flooding in downtown streets and into some stores to a few inches.	
May 15, 1978	\$15,500,000 property

Date	Damages
	Heavy wet snow and record rains did very extensive damage to property, crops, and livestock in 12 counties. Hundreds of homes were damaged, and many totally destroyed. Numerous bridges and sections of roads were washed out, power lines downed, with much damage to cars and personal property. The event was estimated to be a 20- to greater than 100-year flood.
June 19, 1986	
	Flash flooding occurred along Casper Creek. Extensive damage was reported west of Casper. Over 2.5 inches of rain fell on the west side of Casper, 1730 to 1930 MST.
May 8, 1995	
	Moderate to heavy rain fell in two counties. Amounts between 1.5 to 3 inches fell on already saturated soil. This produced some flooding of creeks and streams in two counties. In the Casper area, high water washed out sections of three roads and partially washed out two others.
January 29, 1996	\$2,000 property
	Warmer temperatures caused minor ice jam flooding on the Big Horn River from Worland to Manderson.
June 16, 2003	
	Rocks, boulders, mud and water were over Wyoming Highway 220 near mile marker 103.
July 25, 2005	\$500,000 property
	A line of strong thunderstorms moved west to east across Natrona County between 4:30 p.m. and 6:30 p.m. These storms originated over the Bighorn Mountains and rapidly intensified near the Natrona County International Airport, 6 miles west of Casper, where a 54 kt wind gust was reported. The airport received nearly an inch of rain between 5:35 p.m. and 6:05 p.m. The storms hit the Casper area between 5:50 p.m. and 6:20 p.m. with similar strong outflow winds followed by reports of up to 1.44 inches of rainfall over this 30-minute period. The brief torrent of rain produced flooding on the north side of downtown Casper, shutting down portions of Interstate 25. Portions of Poplar and McKinley streets near the interstate were also blocked with water and mud, which flowed into some business buildings. The strong outflow winds preceding the storm snapped the top of a cottonwood tree off of its 18 inch diameter trunk and ripped a sheet metal roof off a RV storage shed.
August 3, 2005	\$85,000 property

Date	Damages
In the early evening hours, a strong thunderstorm and its associated heavy rainfall neared the Casper area dropping a significant amount of rainfall. Within the city of Casper, rainfall totals ranged from 1 to 1.5 inches in less than an hour which led to an area of flash flooding. The rushing water moved cars several feet, approached the doorsteps and flooded the basements of several homes in the Allendale area, and caused an underground drainage pipe to give way causing a 20-foot wide sinkhole.	
July 19, 2007	\$55,000 property
Strong and severe thunderstorms spread south along the eastern slopes of the Bighorn Mountains during the afternoon and early evening. These storms produced long periods of hail and very heavy rain. Additional thunderstorms brought heavy rain to areas west and southwest of Casper, including the area near the Jackson Canyon fire burn scar. Heavy rain carried ash, mud, and debris. Access to State Highway 220 was cut-off due to the debris flow. Flooding was reported along Poison Spider Road where water of one foot depth covered the road in four or five places.	
July 25, 2007	\$300,000 property, \$6,000 crop
Copious moisture was brought north into Wyoming in strong monsoonal flow. Low-level upslope flow from the north aided the development of showers and thunderstorms. Atmospheric moisture values were around 200 percent of normal. Rainfall estimated by radar to be three inches or more fell in a swath from Emigrant Gap to Bar Nunn. The heavy rain caused flash flooding along Poison Spider Road and other nearby roads as culverts could not handle the large volume of water. Portions of a ranch along Poison Spider Road were under several feet of water. A mobile home park south of Bar Nunn was flooded as water flowed from surrounding higher terrain. The lower floor of the rural Poison Spider Elementary School sustained flood damage as the water poured in through several doorways.	
August 2, 2007	\$500,000 property
Thunderstorms producing heavy rain formed northwest of Casper during the late evening. The storms tracked southeast along and south of U.S. Highway 20/26 over areas that had been hard hit by heavy rain over the previous two weeks. Natrona County Emergency Management officials reported flooding at the intersection of Poison Spider and 12 Mile roads at 8:57 p.m. Flooding along Poison Spider Road continued to increase through 10:00 p.m. with reports of ditches overflowing in and around Mills. Heavy rainfall of nearly one inch fell in less than 30 minutes at the Natrona County International Airport causing flooding. The Poison Spider Elementary School flooded for the second time in eight days causing over \$100,000 in damage.	
August 3, 2007	\$65,000 property

Date	Damages
One to two inches of rain fell on already saturated ground west of Casper along Poison Spider Road. Rainfall of 0.50 to 1.50 inches fell in less than an hour in and near the city of Casper. The rain produced flash flooding along Poison Spider and Paradise Valley roads and in some locales around Paradise Valley. Urban flooding was observed along Interstate 25 in Casper.	
June 13, 2009	\$2,000 property
Severe thunderstorms developed in a moist, upslope flow air mass east of the Continental Divide. The severity of the storms was aided by a disturbance that moved northeast across the area and a favorable jet stream position. Rainfall of one to two inches fell in and around Casper. One location at Wyoming Medical Center recorded 1.75 inches of rain. The water accumulated at the intersection of Poplar and CY avenues and flooded the area.	
July 3, 2009	\$5,000,000 property
A vicious thunderstorm struck the city of Casper between about 5:15 and 6:00MST at the start of the July 4th holiday weekend. Extreme rainfall rates falling on the urbanized landscape produced flash flooding throughout Casper, with the most extensive inundation centered on the intersection of Poplar and Collins streets. Nearly one inch of rain fell in 21 minutes at the Natrona County International Airport northwest of the city. A precipitation gauge along the North Platte River in Casper reported 1.79 inches of rain in 30 minutes. Final tallies around town showed rainfall from around one inch up to a high of about 2.25 inches occurred within about a 35 minute time frame. Several streets, including Poplar and McKinley were reported to be rivers carrying rocks and other debris toward downtown Casper. Reports indicated one to three feet of water was present on some city streets. The flash flooding floated several cars and sent storm drains shooting wildly into the air. One storm drain cover injured an individual as the surging water displaced it. Emergency management estimated anywhere from 800 to 1000 structures, mainly homes, were impacted by the flooding. In addition to hundreds of impacted homes, many well-known locations also sustained damage, including the Nicolaysen Art Museum, Wyoming Medical Center, Central Wyoming Fairgrounds, Three Crowns Golf Course, and several city school buildings. Major damage also occurred at Casper College where five buildings, including the gymnasium and theater, were significantly impacted. Retaining wall bricks and landscape gravel were washed from a hillside at the college and cascaded to neighboring residences and streets below. The Hall of Justice on North David Street also sustained significant damage when water poured through a door into an underground garage. The building's elevator shafts and the ceilings in several sheriff's offices were also damaged. One injury was reported.	

Date	Damages
July 29, 2013	\$200,000 property
Heavy rain began falling around 7:00MST over east Casper and the east end of Casper Mountain. Thunderstorms had approached the area from the southwest and a low-level northeast flow made for a slower progression over east Casper bringing rainfall of one-half to one-inch in about 25 minutes. Street flooding was observed along East 2nd Street from Wyoming Boulevard toward Hat Six Road. The water was two feet deep near the intersection of Blackmore Road and East 2nd Street. Hail around one-half inch in diameter accumulated to a depth of several inches. The most significant flooding occurred at the Hat Six Ranch at the east end of Casper Mountain. The steep canyons and hillsides above the ranch were torched the previous September by the Sheep Herder Hill Wildfire. Excessive rainfall quickly brought a mix of rock, mud, and debris down one canyon and another draw damaging two homes, at least three vehicles, and two all-terrain vehicles. Water and debris found the Clear Fork Muddy Creek channel and spread out to be anywhere from 50 to 100 yards wide. One ranch was damaged as the creek swept northeast and eventually topped the Hat Six Road.	
August 9, 2013	\$17,000 property
One strong storm produced heavy rain and strong outflow wind as it tracked east-southeast across northern Natrona County. Heavy rain fell in the Buffalo and Cottonwood creek drainages in northwest Natrona County along the extreme southeast slope of the Bighorn Mountains. A nearly stationary thunderstorm dropped rainfall estimated at over one to two inches in one hour, generating very heavy rain, strong wind gusts, and hail up to nickel size. Run-off quickly reached Buffalo Creek along the Buffalo Creek Road near a rural ranch. The creek swelled to be many times its normal size and flooded the road near the ranch. Debris was left on the roadway in the wake of the flood and a five-mile stretch of the road needed repair.	

Date	Damages
August 5, 2014	\$200,000 property
Slow-moving thunderstorms produced very heavy rain near the Red Wall and Gray Wall in northern Natrona County. Radar estimated up to 3.5 inches of rain fell within one hour in the Hackett Creek drainage, while widespread 1.5 inch amounts were estimated across a larger area near the walls. The Alkali, Indian, and Willow creek drainages were significantly impacted. Damage to county roads was extensive as culverts could not handle the volume of water and debris which washed down hillsides and across the roads. There were numerous instances of water, mud, and debris across Willow Creek and Baker Cabin roads. Small reservoirs quickly filled with water and overflow channels were utilized. Large hail also occurred with the thunderstorms which further complicated the situation. Hail stones larger than a quarter were still visible in deep drifts the morning after the deluge. Hay meadows, backcountry roads, and a ranch fence line were all damaged by the flood waters and hail. Near the Willow Creek Ranch and downstream near the rural Willow Creek School, the flood waters on Willow Creek were estimated at over 100 yards wide and at least 4 to 5 feet deep. The high water re-routed the creek and left a large amount of sediment and debris behind. Farther upstream near the two walls, the flood waters tore loose the soil and grass of Hackett Creek scouring out the creek bed. Numerous fences were destroyed and at least one residence reported flooding near the school. The school itself was damaged when a small drainage overflowed a county road sending water and debris cascading into the building.	
May 24, 2015	\$100,000 property
A slow-moving upper level low south of Wyoming sent waves of moisture northward over central and eastern Wyoming during the Memorial Day holiday weekend. Measured and estimated rainfall totals ranged from two to around five inches. This resulted in flooding and flash flooding in several areas. Johnson County saw significant flooding along the tributaries and main stem of the Powder River and around Buffalo. The greatest impact was felt in Hot Springs County where heavy rains in the Wind River Canyon resulted in several mud and rock slides that closed State Highway 789 between Thermopolis and Shoshoni. Several storm spotters reported flash flooding on Salt Creek in Natrona County. Some county and Bureau of Land Management roads were washed out. At least one fracking trailer was destroyed south of town. Property damage occurred in the area of Salt Creek.	
June 5, 2015	
Flash flooding resulted in evacuations in the 33 Mile area (the day after flooding in Lusk in 2015).	

Date	Damages
October 2, 2015	\$40,000 property
West-northwest moving showers and thunderstorms tracked up the south slope of the Bighorn Mountains during the late afternoon. Heavy rain estimated at 0.75 inch to around 1.00 inch fell in a 20 to 30 minute period in the Buffalo Creek drainage. The water quickly ran off the steep slopes into creeks and streams feeding Buffalo Creek. Eyewitness reports indicated the creek went from a dry creek to well outside its banks in just minutes. The raging waters damaged a county road in several spots, overtopped and damaged a ranch road, and ruined fence line at a rural ranch.	
June 5, 2017	
A cold front swept across Wyoming on the afternoon and evening of June 5th. With some additional upper level support from a vorticity maximum, thunderstorms developed across central Wyoming. A couple of these storms become severe. Quarter size hail was reported near Evansville. In addition, very heavy rain fell with some of these storms and caused localized flash flooding along Webb Creek Road when Webb Creek overflowed it's banks.	
June 23, 2018	
Three slowly moving thunderstorms merged over Midwest and brought large amounts of hail and street flooding. A rain gauge measured over 2.5 inches of precipitation with rain and melting hail. The hail flowed into a wash and drifted up to four feet in some areas. Flooding was also noted in Salt Creek Oil Field as well as in portions of Midwest.	
July 30, 2021	
Drenching thunderstorms brought very heavy rain to Casper and Casper Mountain. On Casper Mountain Road, a mudslide closed the road for several hours from the evening of July 30th through the morning of July 31st.	
June 15, 2023	\$2,866,000 property
On June 15th, roughly between 300 PM and 415 PM MDT, slow moving thunderstorms fueled by a wet air mass led to heavy rain over parts of Natrona County, including the city of Casper, WY and surrounding suburbs. Rainfall rates of 1 to 2 inches per hour were common for many locations. These high rainfall rates combined with other factors, such as wet antecedent conditions, hilly topography, and urban impermeable surfaces resulted in the flash flood event that afternoon and evening.	
June 29, 2023	

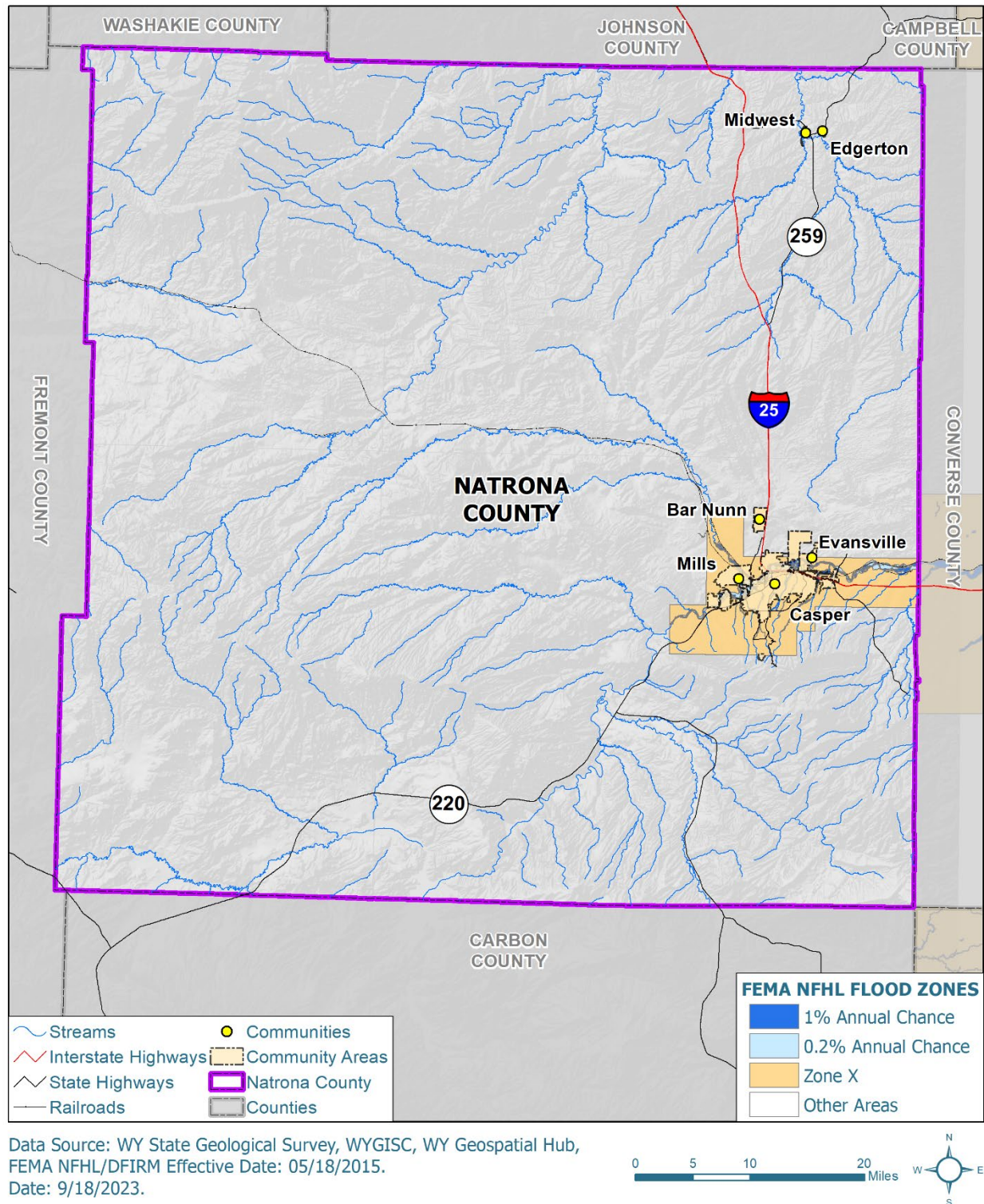
Date	Damages
	Deep moisture and a passing shortwave combined to produce a slow moving strong to severe thunderstorms across Natrona County. The most notable storm occurred in northern Natrona County to the south of Midwest. A thunderstorm dropped large amounts of hail up to quarter size along Highway 259, leaving up to a foot of hail on the road that made travel very difficult for several hours. The combination of hail and very heavy rain brought local flooding to that area as well, resulting in some dirt and gravel roads washing out. To the southwest of Casper, there was a brief touchdown of a rope tornado, but no damage was reported. Heavy rain also caused minor flooding in northwestern Natrona County later in the evening.

LOCATION

Across Natrona County there are a number of areas that are at risk of a flood event. **Figure 36** presents the location of mapped areas of flood hazard within the county.

Figure 36 Flood Hazards

Natrona County - Flood Hazards



EXPOSURE AND VULNERABILITY

Lifelines

Floods impact Lifelines through closure of businesses and government facilities, disrupted communications, interruption in the delivery of utilities such as water and sewer, excess burden on emergency response resources, and generally hinder the normal functions of a community. Food, hydration, and shelter lifelines are impacted by floods as community residents can be displaced from their homes during a flooding event, agricultural activities can be disrupted, and potable water sources can be contaminated.

Additionally, Transportation can be disrupted by flooding events causing road damages and closures and increased traffic in the case of community evacuation.

Health and Medical lifelines can also be impacted by flood events. Transportation impacts can disrupt patient and medical supply transportation. Health and medical facilities management can also be impacted with physical damages and increases in in-coming patients.

TABLE 114 details the Lifelines that are located in floodplain areas.

Table 114 Lifelines in 100- and 500- Year Floodplains

Lifelines	Bar Nunn	Casper	Edgerton	Evansville	Midwest	Mills	Unincorporated	Total
100 - Year Floodplain								
Communications	-	-	-	-	-	-	-	0
Energy	-	-	-	-	-	-	-	0
Energy (Miles)	-	-	-	0.3	-	-	0.5	0.8
Food, Hydration, & Shelter	-	1	-	-	-	-	-	1
Health & Medical	-	-	-	-	-	-	-	0
Safety & Security	-	-	-	-	-	-	-	0
Transportation	-	4	-	-	-	1	6	11
Transportation (Miles)	-	1.5	-	0.3	-	1.1	1.6	4.5

Lifelines	Bar Nunn	Casper	Edgerton	Evansville	Midwest	Mills	Unincorporated	Total
500 - Year Floodplain								
Communications	-	-	-	-	-	-	-	0
Energy	-	1	-	-	-	-	2	3
Energy (Miles)	-	-	-	2.1	-	-	0.6	2.7
Food, Hydration, & Shelter	-	2	-	-	-	-	-	2
Health & Medical	-	-	-	-	-	-	-	0
Safety & Security	-	6	-	-	-	-	-	6
Transportation	-	10	-	1	-	2	8	21
Transportation (Miles)	-	4.2	-	0.5	-	1.8	2.5	9.0

People

People living in floodplains, known flooding areas, or near areas where flash floods can occur are at an increased risk from the hazard. Those in the community with access and functional needs (AFN) may have issues evacuating and are at increased further risk, including the elderly, children, those with mobility or communication issues, those with low incomes, institutionalized, and people who may be unfamiliar with the area. Floods can cause serious injury and death if people are unable to get to safe locations. Some of the population may be displaced from their homes, with varying durations which can strain community resources.

Non-English speaking populations are also included as having a higher vulnerability as communications and emergency messaging may not be available in languages other than English. In general, anyone who does not have adequate access to warnings from an emergency warning system may be disproportionately impacted by the hazard.

The dangers of flash flooding pose an even greater risk, as those in these populations may not be able to extricate themselves from an immediately threatening situation. The need for emergency responders to place these populations as a priority is crucial to the best possible outcomes.

Structures

It is important to identify who may be at risk if infrastructure is damaged by flooding. Roads or railroads that are blocked or damaged can isolate residents and can prevent access throughout the county. This is especially critical for those needing emergency service providers or for getting crews in to make repairs. Bridges washed out or blocked by floods or debris can also cause isolation. Utilities including power lines, cable, and phone lines may be knocked down or rendered unusable by the waters.

Water and sewer systems can be affected by flooding. Floodwater can back up drainage systems, causing localized flooding. Culverts can be blocked by debris from flood events, also causing localized flooding. Floodwater can get into drinking water supplies, causing contamination. Sewer systems can be backed up, causing wastewater to spill into homes, neighborhoods, rivers, and streams. Underground utilities can also be damaged.

Many properties in the county are vulnerable to flooding, including those that may not be within a mapped floodplain. While some properties make be flood proofed, the majority are likely to be significantly damaged if in the flooded area. Properties near waterways may have stability issues as the flood waters erode the banks and carry debris, while properties in low-lying areas are more vulnerable as these are where water would collect. **TABLE 115** records the structure counts as well as the valuation of these structures located in 100-year floodplain areas and **TABLE 116** shows those in 500- year floodplain areas.

Table 115 Structures in 100- Year Floodplains

	Total Structure Count	Total Improved Structure Count	Total Structure Value	Estimated Content Value
Bar Nunn	-	-	\$-	\$-
Casper	544	544	\$126,086,612	\$220,269,166
Commercial	22	22	\$21,082,371	\$43,178,867
Industrial	23	23	\$22,684,870	\$73,387,985
Public	2	2	\$1,070,803	\$2,141,606
Residential	497	497	\$81,248,567	\$101,560,709
Edgerton	-	-	\$-	\$-
Evansville	7	7	\$4,650,443	\$10,312,016

	Total Structure Count	Total Improved Structure Count	Total Structure Value	Estimated Content Value
Commercial	3	3	\$2,004,609	\$4,009,218
Industrial	2	2	\$2,396,405	\$5,991,012
Residential	2	2	\$249,429	\$311,786
Midwest	-	-	\$-	\$-
Mills	12	12	\$10,294,040	\$25,232,754
Commercial	4	4	\$2,468,868	\$4,847,845
Industrial	2	2	\$5,301,722	\$17,230,598
Residential	6	6	\$2,523,450	\$3,154,312
Unincorporated	245	242	\$106,328,106	\$184,359,904
Commercial	40	38	\$45,162,552	\$90,325,104
Industrial	9	8	\$9,212,970	\$29,094,069
Residential	196	196	\$51,952,584	\$64,940,730
Total	808	805	\$247,359,201	\$440,173,839

Table 116 Structures in 500- Year Floodplains

	Total Structure Count	Total Improved Structure Count	Total Structure Value	Estimated Content Value
Bar Nunn	-	-	\$-	\$-
Casper	2,077	2,074	\$697,821,098	\$1,199,912,223
Commercial	275	273	\$286,050,917	\$542,108,448

	Total Structure Count	Total Improved Structure Count	Total Structure Value	Estimated Content Value
Industrial	67	66	\$61,062,208	\$185,942,264
Public	24	24	\$39,755,064	\$83,170,374
Residential	1,711	1,711	\$310,952,910	\$388,691,137
Edgerton	-	-	\$-	\$-
Evansville	283	283	\$43,972,950	\$60,297,869
Commercial	3	3	\$7,010,332	\$14,020,664
Industrial	1	1	\$59,146	\$147,865
Public	-	-	\$-	\$-
Residential	279	279	\$36,903,472	\$46,129,340
Midwest	-	-	\$-	\$-
Mills	349	346	\$91,958,372	\$196,616,643
Commercial	22	22	\$24,140,484	\$53,032,092
Industrial	14	12	\$28,519,197	\$90,673,079
Public	2	2	\$5,050,812	\$10,101,624
Residential	311	310	\$34,247,878	\$42,809,848
Unincorporated	320	319	\$149,005,048	\$297,616,445
Commercial	54	54	\$57,587,619	\$115,918,826
Industrial	27	27	\$33,865,684	\$102,029,281
Public	3	2	\$10,304,873	\$20,609,747
Residential	236	236	\$47,246,872	\$59,058,591

	Total Structure Count	Total Improved Structure Count	Total Structure Value	Estimated Content Value
Total	3,029	3,022	\$982,757,468	\$1,754,443,179

Natural, Historic, and Cultural Resources

Flooding is a natural event, and floodplains provide many natural and beneficial functions. However, with human development factored in, flooding can impact the environment in negative ways. Wildlife habitats can be impacted, due to altered food availability and interrupted breeding patterns. The effects on water quality due to silt and debris can impact wildlife downstream of the flooding. Erosion of riverbanks can permanently alter a waterway and vegetation on the banks may not recover from the damage. Aquatic life can wash onto roads or over dikes into flooded fields. Pollution from roads such as oil and hazardous materials can wash into rivers and streams. During floods, these can settle onto normally dry soils, polluting them for agricultural uses.

Local Vulnerability

Flooding can have a long-term economic impact on individuals and the county. Homes that are damaged may require extensive repairs which can take place over a long duration, especially if mold develops. The cost of infrastructure repair for utilities, roads, and bridges, as well as the components of Lifelines may extend over multiple years as projects are prioritized and funds are acquired. Costs for debris clean-up can be considerable and can be a burden to property owners.

Returning to normal operations and daily life can take time which affects the day-to-day economy of the flooded area. Some businesses may struggle with repair costs and whether they can reopen at all.

Destruction of crops, erosion of topsoil, and deposition of debris and sediment on croplands due to flood would be expensive to remediate, as well as recover from lack of yield. Direct costs for the value lost and indirect costs for the loss of work that comes from harvest and livestock transport can impact the agricultural community for an extended period.

TABLE 117 provides additional vulnerability information identified by each local government.

Table 117 Local Government Vulnerability

Local Government	Local Vulnerability
Bar Nunn	Localized flooding of neighborhoods and critical infrastructure.
Casper	Structures and critical infrastructure located along the North Platte River.
Evansville	Critical infrastructure including the water plant and Town Hall / Police Department. Road closures including East Yellowstone Highway, Oildale Street, and Western Avenue.
Mills	Isolated areas of Lower Mills would be most impacted. Roads would be temporarily shut down.
Natrona Co. Fire	Structures and critical infrastructure located along the North Platte River.
Casper Mountain Fire	Impacts to culverts and roadways would hinder response efforts.
Unincorporated County	There are a number of areas in Natrona County that can be affected by flooding: Garden Creek, Elk Horn Creek, and the North Platte River could and have all flooded in the past. Impacts include flooding of neighborhoods and critical infrastructure.

FUTURE TRENDS IN DEVELOPMENT

As development in the county continues, flood risks will have larger impacts and increase community vulnerability. Proper mitigation will include public education on flood plains and building codes that recognize flood risks. **TABLE 118** provides additional information identified by each local government.

Table 118 Local Government Population Trends

Local Government	Local Population Trends
Bar Nunn	No population change has recently occurred, or is expected, which would impact hazard vulnerability.
Casper	Any population growth in mapped or unmapped floodplains will increase the community's collective vulnerability.
Evansville	No population change has recently occurred, or is expected, which

Local Government	Local Population Trends
	would impact hazard vulnerability.
Mills	No population change has recently occurred, or is expected, which would impact hazard vulnerability. There is no growth potential in currently mapped floodplains.
Unincorporated County	Population in the unincorporated areas of the county did not increase, nor are major increases expected in the future. Overall vulnerability has not increased, nor is expected to, due to development.

PROBABILITY OF FUTURE OCCURRENCES

Flooding is likely in the region and the effects could be extensive, considering the amount of area and property that lies within floodplain. Flash floods will occur more often in areas that have seen damage from wildfires, affecting the soil's ability to retain moisture.

As shown in **TABLE 113** there were 34 major flood events in the 128 years from 1895 to 2023, predicting a 26% chance of a notable flood event occurring annually.

LANDSLIDE / ROCKFALL / DEBRIS FLOWS

PREVIOUS OCCURRENCES

TABLE 119 highlights previous landslide / rock fall / debris flow events in the county, it is important to note that there have been no events past 2013.

Table 119 Notable Landslide / Rockfall / Debris Flow Events

Date	Damages
June 16, 2003	
	Rocks, boulders, mud and water were over Wyoming Highway 220 near mile marker 103.
July 19, 2007	\$55,000 property

Date	Damages
Strong and severe thunderstorms spread south along the eastern slopes of the Bighorn Mountains during the afternoon and early evening. These storms produced long periods of hail and very heavy rain. Additional thunderstorms brought heavy rain to areas west and southwest of Casper, including the area near the Jackson Canyon fire burn scar. Heavy rain carried ash, mud, and debris. Access to State Highway 220 was cut-off due to the debris flow. Flooding was reported along Poison Spider Road where water of one foot depth covered the road in four or five places.	
April 18, 2011	\$237,000
A rockslide on US Highway 14A east of Lovell in the Bighorn Mountains deposited at least 7,500 cubic yards of rock on the roadway. The slide occurred near milepost 73.4 and was witnessed and recorded by at least one person. The slide along with record snowpack kept the road closed beyond its typical Memorial Day opening. The cost of rock removal and road repair exceeded \$200,000.	
June 10, 2011	\$165,000
The melting of record snowpack combined with heavy rain to saturate soils in the western Bighorn Mountains. Land below a section of U.S. Highway 14 above Shell Falls gave way near milepost 31.5 making travel on the highway unsafe. The slide, which measured at least 100 feet long, closed the highway for about three weeks.	
July 29, 2013	\$200,000 property
Heavy rain began falling around 7:00MST over east Casper and the east end of Casper Mountain. Thunderstorms had approached the area from the southwest and a low-level northeast flow made for a slower progression over east Casper bringing rainfall of one-half to one-inch in about 25 minutes. Street flooding was observed along East 2nd Street from Wyoming Boulevard toward Hat Six Road. The water was two feet deep near the intersection of Blackmore Road and East 2nd Street. Hail around one-half inch in diameter accumulated to a depth of several inches. The most significant flooding occurred at the Hat Six Ranch at the east end of Casper Mountain. The steep canyons and hillsides above the ranch were torched the previous September by the Sheep Herder Hill Wildfire. Excessive rainfall quickly brought a mix of rock, mud, and debris down one canyon and another draw damaging two homes, at least three vehicles, and two all-terrain vehicles. Water and debris found the Clear Fork Muddy Creek channel and spread out to be anywhere from 50 to 100 yards wide. One ranch was damaged as the creek swept northeast and eventually topped the Hat Six Road.	
May 24, 2015	\$100,000 property

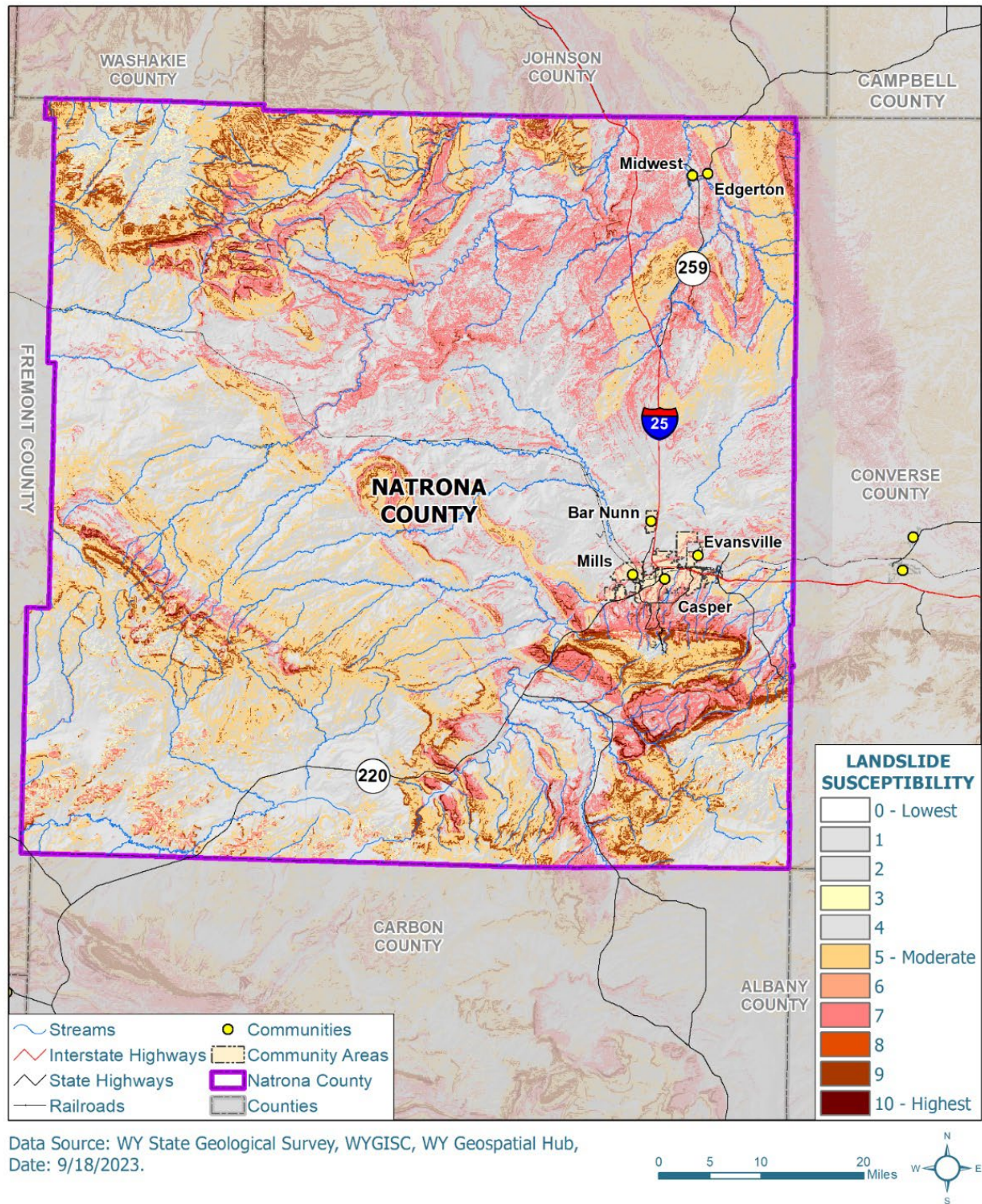
Date	Damages
	A slow-moving upper level low south of Wyoming sent waves of moisture northward over central and eastern Wyoming during the Memorial Day holiday weekend. Measured and estimated rainfall totals ranged from two to around five inches. This resulted in flooding and flash flooding in several areas. Johnson County saw significant flooding along the tributaries and main stem of the Powder River and around Buffalo. The greatest impact was felt in Hot Springs County where heavy rains in the Wind River Canyon resulted in several mud and rock slides that closed State Highway 789 between Thermopolis and Shoshoni. Several storm spotters reported flash flooding on Salt Creek in Natrona County. Some county and Bureau of Land Management roads were washed out. At least one fracking trailer was destroyed south of town. Property damage occurred in the area of Salt Creek.

LOCATION

Landslides have the possibility to occur across the county but have high susceptibility in areas south of Casper and around Edgerton and Midwest. The mapped areas of landslide susceptibility can be seen in **FIGURE 37**.

Figure 37 Landslide Susceptibility

Natrona County - Landslide Susceptibility



EXPOSURE AND VULNERABILITY

Lifelines

All community Lifelines across the county are vulnerable to the impacts from a mass wasting event. The Transportation Lifeline could be the most impacted. While no analysis is possible without mapped hazard areas, the likelihood of road closures and bridge damage in a debris flow event is high. Most debris flows will have little to no impact to Lifelines. In some cases, single events may have significant impact, resulting in deaths or causing extensive damage to public infrastructure.

TABLE 120 details the Lifelines that are located in landslide susceptible areas.

Table 120 Lifelines in Landslide Susceptible Areas

Lifelines	Bar Nunn	Casper	Edgerton	Evansville	Midwest	Mills	Unincorporated	Total
Moderate Hazard								
Communications	-	-	-	-	-	-	-	0
Energy	-	-	-	-	-	-	-	0
Energy (Miles)	-	1.5	-	0.7	-	-	17.5	19.7
Food, Hydration, & Shelter	-	4	-	-	-	-	1	5
Health & Medical	-	-	-	-	-	-	-	0
Safety & Security	-	1	-	-	-	-	-	1
Transportation	-	1	-	-	-	-	11	12
Transportation (Miles)	-	3.2	0.1	0.1	0.1	1.0	36.7	41.2

People

Exposure to landslide hazard areas is likely limited. Individuals in recreation areas or driving on roadways may also be exposed to landslide hazards. In general, all persons exposed to landslide hazard areas are considered to be vulnerable.

In most debris flow events, there are limited or no deaths and injuries.

Structures

Several types of infrastructure are exposed to mass movements, including transportation, water and sewer, and power. Highly susceptible areas of the county include mountain roads and transportation infrastructure. At this time, all infrastructure and transportation corridors identified as exposed to the landslide hazard are considered vulnerable until more information becomes available.

TABLE 121 accounts for the total exposure of buildings to landslide susceptibility areas. These areas are where landslides are most likely to happen and therefore pose the highest risk to people and property.

Table 121 Structures in Landslide Susceptible Areas (High Hazard)

	Total Structure Count	Total Improved Structure Count	Total Structure Value	Estimated Content Value
Bar Nunn	-	-	\$-	\$-
Casper	60	60	\$10,360,214	\$12,997,036
Commercial	1	1	\$62,358	\$124,716
Residential	59	59	\$10,297,856	\$12,872,320
Edgerton	-	-	\$-	\$-
Evansville	-	-	\$-	\$-
Midwest	-	-	\$-	\$-
Mills	-	-	\$-	\$-
Unincorporated	104	103	\$19,637,763	\$25,107,886
Commercial	3	2	\$747,577	\$1,495,153
Residential	101	101	\$18,890,186	\$23,612,733
Total	164	163	\$29,997,977	\$38,104,922

Natural, Historic, and Cultural Resources

Landslides, debris flows, and rockfalls have the ability to cause damages to the various natural, historic, and cultural resources of a community. These events can damage historic

buildings, museums, as well as other historic and culturally important structures and spaces. Additionally, these events can damage agricultural systems, destroying crops and harming livestock, and disrupt natural ecosystems.

Local Vulnerability

Road closures caused by landslides, debris flows, and rockfalls have economic impacts on communities. Not only may businesses along closed road experience decreased customer traffic, reduced sales, and potential financial losses, road closures can impact supply chains, transportation logistics, and productivity.¹⁰ **TABLE 122** provides additional vulnerability information identified by each local government.

Table 122 Local Government Vulnerability

Local Government	Local Vulnerability
Bar Nunn	The town is not at risk to landslide / rockfall / debris flow events.
Casper	Critical infrastructure located in known landslide paths.
Evansville	Extended closures and impacts to main transit corridors outside of town. No mitigation can be performed within town boundaries.
Mills	Minor to no impacts expected from this hazard.
Natrona Co. Fire	Structures in Casper Mountain area. Debris flow in areas below previous burn scars.
Casper Mountain Fire	Limited impacts, potential for debris to block roadways and hinder ingress/egress.
Unincorporated County	Structures in Casper Mountain area. Debris flow in areas below previous burn scars.

FUTURE TRENDS IN DEVELOPMENT

Any development in known landslide area could increase risk to this hazard. Development in and around previous wildfire burn scars will also experience increased risk. **TABLE 123** provides additional information identified by each local government.

¹⁰ <https://www.nationaltrafficdesigns.com/how-does-a-road-closure-affect-traffic-flow/>

Table 123 Local Government Population Trends

Local Government	Local Population Trends
Bar Nunn	No population change has recently occurred, or is expected, which would impact hazard vulnerability.
Casper	Any increases in population will increase the community's collective vulnerability.
Evansville	No population change has recently occurred, or is expected, which would impact hazard vulnerability.
Mills	No population change has recently occurred, or is expected, which would impact hazard vulnerability.
Unincorporated County	Population in the unincorporated areas of the county did not increase, nor are major increases expected in the future. Overall vulnerability has not increased, nor is expected to, due to development.

PROBABILITY OF FUTURE OCCURRENCES

The frequency of landslide events within the county are difficult to ascertain due to a lack of information regarding past events. For the purposes of this plan, it will be assumed that landslide / rockfall events are likely to occur in any given year (100% annual chance).

Debris flows can occur rapidly with little warning during torrential rains. Debris flows generally occur with floods and downpours associated with the late summer monsoon season. Quantitative data availability is limited but, future debris flow events are likely to occur across the county. Multiple factors may increase the frequency, including the effects of wildfire on the landscape and its ability to retain water.

MINE AND LAND SUBSIDENCE

PREVIOUS OCCURRENCES

Collapsible soils, evaporite sinkholes, undermined area subsidence are present across the state. Previous losses due to collapsible soils, sinkholes, and coal undermined area subsidence can be difficult to quantify as there is no central reporting location for any of these hazards. Although one incident of these hazards can cost millions to repair and remediate, which is shown in the loss figures for some of the notable events.

LOCATION

The variance in geography across the state creates very different geologic conditions and therefore unique exposure to the specific hazards impacting communities. It should be

noted that the location of undermined areas is not the same thing as subsidence hazard. In general, subsidence hazards typically extend beyond the mapped footprint of a mine. The coal undermined subsidence areas provide a best available data snapshot, as there are known mines that have not been studied to determine the subsidence risk.

EXPOSURE AND VULNERABILITY

Lifelines

Communications, energy, and transportation are the community lifelines most vulnerable to the impacts from ground subsidence. It is unlikely that all sectors could be affected, or resources strained due to the relatively small footprint of hazard events. There are likely no long-term effects on recovery and resilience. There are no Lifelines in mapped subsidence areas.

People

Anyone living over or near an undermined area or other area susceptible to ground subsidence is at risk from the hazard. In many cases it is known where mines are located, as well as the shaft openings.

Structures

Subsidence can result in ground displacement of several feet and serious structural damage to buildings, roads, irrigation ditches, underground utilities, and pipelines. It can disrupt and alter the flow of surface or underground water. Surface depressions created by subsidence may be filled in, only to sink further because the underground void has not been completely closed.

Natural, Historic, and Cultural Resources

Mine and land subsidence events can damage the nature ecosystem within the county. Ground collapse can additionally impact agriculture by damaging farmland and infrastructure.

Local Vulnerability

Previous losses due to collapsible soils, sinkholes, and coal undermined area subsidence can be difficult to quantify as there is no central reporting location for any of these hazards. Although one incident of these hazards can cost millions to repair and remediate, which is shown in the loss figures for some of the notable events. **TABLE 124** provides additional vulnerability information identified by each local government.

Table 124 Local Government Vulnerability

Local Government	Local Vulnerability
Bar Nunn	Any development over historic underground mines.

Local Government	Local Vulnerability
Casper	Any development over historic underground mines.
Evansville	Any development over historic underground mines.
Mills	Minor to no impacts expected from this hazard. No known mining claims in Mills.
Natrona Co. Fire	Any development over historic underground mines.
Casper Mountain Fire	Any development over historic underground mines.
Unincorporated County	Natrona County has 34,151 mining claims and only 7.95% are active. Most are not in populated areas.

FUTURE TRENDS IN DEVELOPMENT

All future development can be affected by land and mine subsidence. The vulnerability of community assets is increasing through time as more people enter the planning area. Public education is critical as new residents move to the area, as many may not have experienced the extent of hail seen in the county. While property damage is often unavoidable, public safety can be improved with education.

TABLE 125 provides additional information identified by each local government.

Table 125 Local Government Population Trends

Local Government	Local Population Trends
Bar Nunn	No population change has recently occurred, or is expected, which would impact hazard vulnerability.
Casper	Any increases in population will increase the community's collective vulnerability, as there are still many unknown historical mining locations.
Evansville	No population change has recently occurred, or is expected, which would impact hazard vulnerability.
Mills	No population change has recently occurred, or is expected, which would impact hazard vulnerability.
Unincorporated	Population in the unincorporated areas of the county did not

Local Government	Local Population Trends
County	increase, nor are major increases expected in the future. Overall vulnerability has not increased, nor is expected to, due to development.

PROBABILITY OF FUTURE OCCURRENCES

While mine and land subsidence events are rarely recorded, they will continue to occur throughout Natrona County. There is a 100% chance that these events will impact some portion of the county in a given year.

SEVERE WEATHER

PREVIOUS OCCURRENCES

Thunderstorms and Lightning

TABLE 126 highlights severe weather events reported in the county since 2006.

Table 126 Notable Lightning Events

Date	Damages
May 8, 2006	\$65,000 property
Lightning struck the peak of a roof at a house on Platte River Road igniting a fire within the structure. Smoke quickly spread throughout the house and into the attic. A portion of the home's cement foundation was blown apart. The home's lone resident was not injured but did report that she felt the house shake when the bolt struck.	
May 30, 2009	\$150,000 property
A lightning strike destroyed or damaged five oil tanks about 20 miles west of Casper near the intersection of county roads 201 and 210. The strike occurred about 1:00MST blowing the lid off one tank containing about 400 barrels of crude oil. The fire quickly spread to a nearby tank and burning crude oil ignited the other tanks. Two additional propane tanks were burned but did not explode. A nearly century old storage building at the site was also completely destroyed.	
August 12, 2013	\$35,000 crop
A 160-ton, 190 bale haystack was set ablaze by a lightning strike. The fire burned through the night but did not spread beyond the stack.	

Hail

The NCDC records any hail events with hailstones that are .75 inch or larger in diameter, or any hail of a smaller diameter which causes property and/or crop damage, or casualties. According to the NCDC definition, there have been 123 separate hail incidents in the County since 1955. The cumulative hail incidents had a total recorded property damage of \$125,000. No deaths and one injury have been associated with these storms in the region during this timeframe. **FIGURE 38** maps historic hail events in Natrona County and **TABLE 127** highlights notable hail events that adhere to NCDC standards and have caused significant damage in Natrona County.

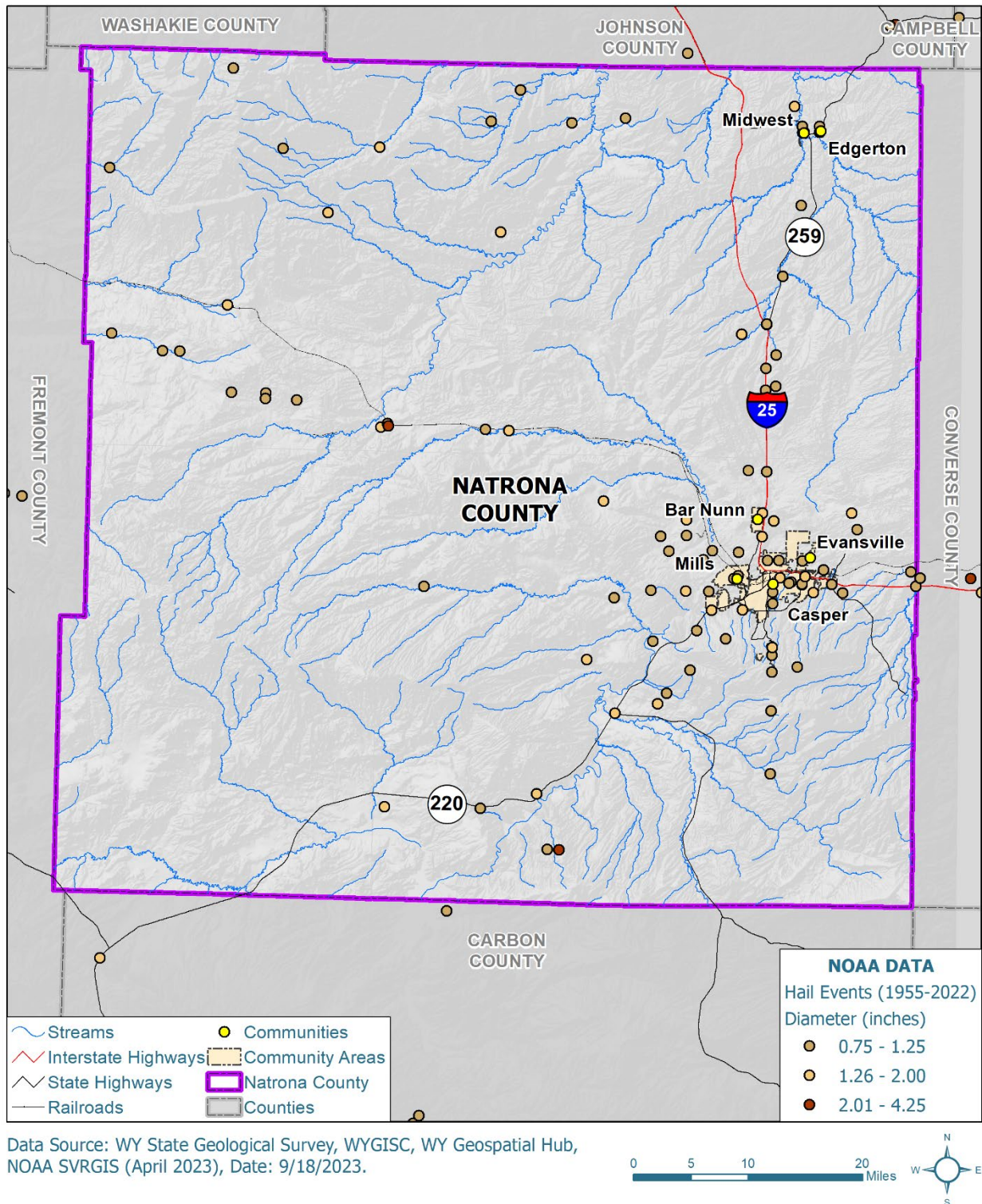
Table 127 Notable Hail Events

Location	Date	Hail Size (inches)	Injuries	Property Damages
Unknown	7/24/1994	1	0	\$5,000
Numerous car windshields were damaged by hail up to one inch in diameter from a lone thunderstorm over central Wyoming.				
Midwest	7/20/2000	1.75	1	\$108,000
A large hailstorm caused extensive damage to homes and vehicles. At least 90 sparrows were killed. Unofficial reports of some softball size hail.				
Powder River	6/22/2013	2.75	0	\$10,000
Petrie	6/22/2013	1.75	0	\$2,000
Powder River	6/22/2013	1.5	0	\$2,000
6/22/2013		Total Property Damage: \$14,000		
Strong to severe thunderstorms erupted over the eastern Wind River Mountains during the morning hours and moved east-northeast across Fremont and Natrona counties. A favorable wind profile helped the storms become severe and produce hail up to the size of baseballs at Powder River. There were numerous reports of quarter to golf ball sized hail in a swath from Castle Gardens to around Natrona. As the storm approached Casper at least three funnel clouds were observed, one of which briefly touched down northeast of Evansville.				
Bar Nunn	7/26/2018	1.5	0	\$1,000

Location	Date	Hail Size (inches)	Injuries	Property Damages
Severe thunderstorms moved through Johnson and Natrona Counties. There were numerous reports of quarter to golf ball size hail from west of Buffalo through Midwest and into Casper. Trained spotters reported hail ranging from quarter to ping pong ball size from Bar Nunn into the east side of Casper. Some of larger hail damaged a carport in Casper. A weak land spout tornado also touched down north of Casper.				

Figure 38 Historical Hail Events

Natrona County - Historical Hail Events



Wind

There have been 25 reported wind events that have causing \$571,000 in damages in Natrona from 2006 to 2022 documented in **TABLE 128**. Notably a wind event on December 11, 2021 recorded a maximum wind speed of 76 mph and caused \$50,000 worth of property damages. **TABLE 129** outlines other notable wind events with significant damages. **Figure 39** maps the historical wind events in Natrona County.

Table 128 Notable Wind Events

Date	Highest Wind Speed Recorded (mph)	Property Damages
6/19/2006	65	\$1,000
8/22/2007	56	\$22,000
1/4/2008	68	\$50,000
1/27/2008	57	\$22,000
12/25/2008	59	\$15,000
1/8/2009	52	\$10,000
5/4/2010	52	\$15,000
10/24/2010	52	\$50,000
12/29/2010	53	\$10,000
2/13/2011	56	\$1,000
6/16/2011	52	\$3,000
11/3/2011	56	\$5,000
12/29/2011	56	\$20,000
1/19/2012	79	\$30,000
3/26/2012	69	\$2,000
6/15/2012	61	\$25,000
7/5/2013	70	\$30,000

Date	Highest Wind Speed Recorded (mph)	Property Damages
1/3/2014	56	\$20,000
8/17/2015	52	\$50,000
2/18/2016	69	\$20,000
10/3/2016	63	\$25,000
12/18/2016	76	\$20,000
12/27/2016	76	\$50,000
12/11/2021	76	\$50,000
12/26/2022	77	\$25,000
Total Damages		\$571,000

Table 129 Notable Events

Date	Damages
January 4, 2008	\$50,000 property
A strong pressure gradient across Wyoming produced damaging southwest wind in favored locations from Sweetwater County northeast through Natrona and southern Johnson counties. Sustained wind speeds of 40 to 45 mph were common in this region. Notable peak wind gusts included 78 mph at Casper/Natrona County International Airport and 85 mph at a RAWS site in western Natrona County. The hurricane force wind ripped a 15x20-foot section off the roof of the Casper Events Center. Several power poles were reported down between Pathfinder and Casper.	
December 25, 2008	\$15,000 property
Favorable southwest flow increased significantly over central Wyoming in advance of a powerful Pacific storm. The winds were strongest across Natrona County where sustained speeds of 40 mph with gusts over 65 mph were common Christmas Day. The wind ripped a portion of a roof from a house in southwest Casper and downed a power line in downtown Casper. At the Natrona County International Airport a peak wind speed of 68 mph was recorded at 9:45 and 10:49MST Christmas Day. A peak gust to 75 mph was clocked the same morning at Fales Rock RAWS.	

Date	Damages
May 4, 2010	\$15,000 property
Favorable upper level dynamics coupled with a cold front associated with an approaching Pacific storm system brought high winds to much of the area. Winds up to 113 mph were recorded at ridgetop level on Mount Coffin, and maximum gusts of 76 mph were recorded at lower elevation at the Camp Creek RAWS site. Wind gusts caused roof damage at a machinery plant in Bar Nunn, four miles north of Casper.	
October 24, 2010	\$50,000 property
A tight pressure gradient ahead of a Pacific storm system brought high wind to Natrona and southeast Fremont counties. Wind gusts up to 60 mph were recorded by automated weather stations. The wind was strong enough to topple a two-story bank building under construction in downtown Casper.	
December 29, 2011	\$20,000 property
A strengthening pressure gradient ahead of a winter storm system brought high wind to areas east of the Continental Divide. High wind was recorded along the Green Mountains and Rattlesnake Hills north through Natrona and Johnson counties. A large McDonald's sign was blown down onto a roadway near the intersection of CY Avenue and Wyoming Boulevard in southwest Casper at 10:57MST Thursday, December 29.	
January 19, 2012	\$30,000 property
High wind was noted throughout the day in the Green Mountains and Rattlesnake Range. A gust of 91 mph was recorded by a Department of Transportation official at the site where two tractor-trailers were toppled approaching South Pass on State Highway 28.	
June 15, 2012	\$25,000 property
An isolated thunderstorm formed west of Casper and tracked along the south side of town. The storm produced a microburst that blew out car windows and caused damage to about 20 vehicles at Casper Country Club. The wind also snapped a 70-foot-tall tree at the golf course and damaged a tall chain link fence surrounding the tennis courts.	
July 5, 2013	\$30,000 property
Five large cottonwood trees were toppled and limbs up to one foot in diameter were ripped to the ground by wind gusts estimated up to 80 mph. At a ranch along West Willow Creek Road, one large feeding shed was gradually torn apart by the wind while another was rolled.	

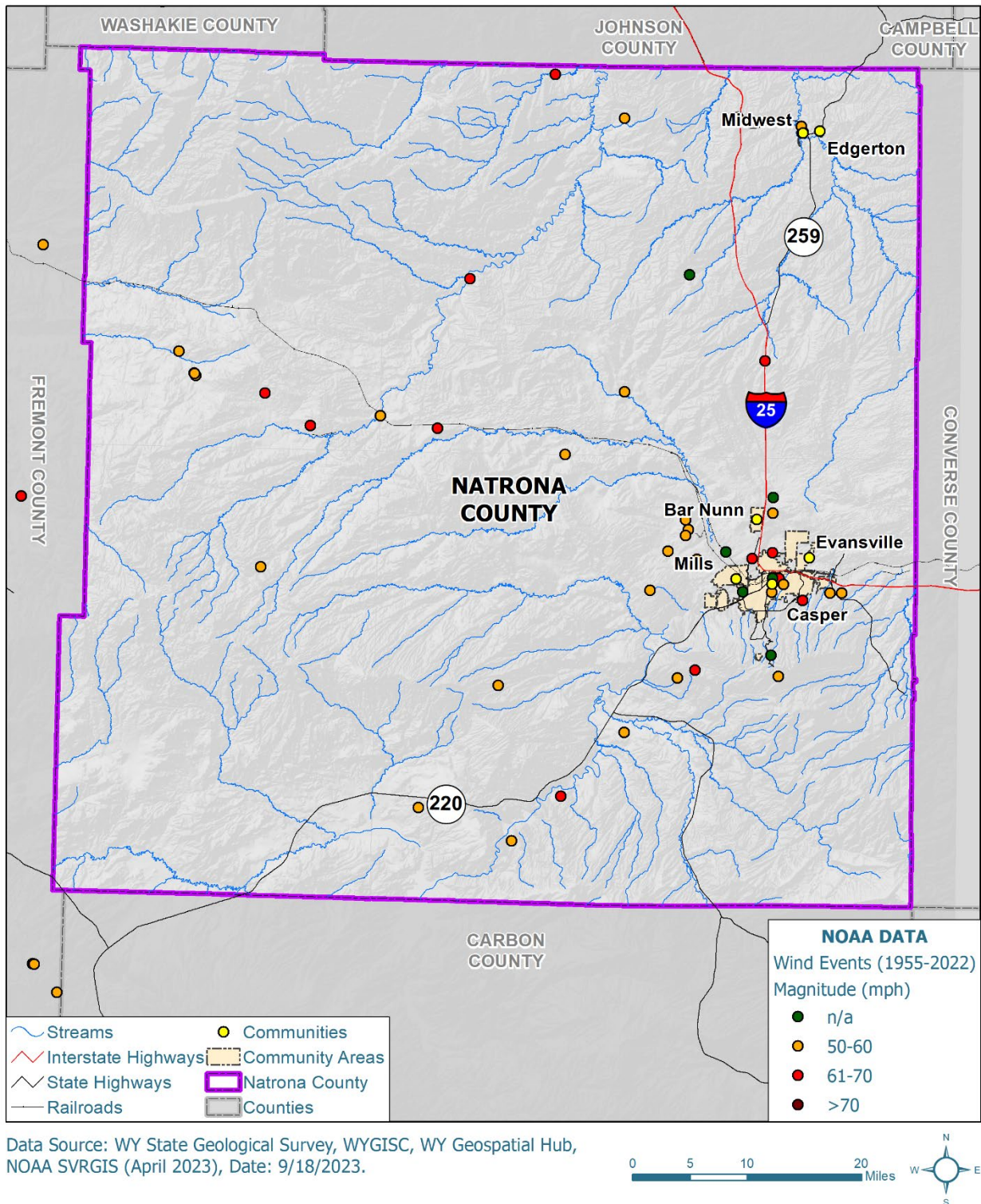
Date	Damages
January 3, 2014	\$20,000 property
A vigorous cold front in combination with an upper level disturbance produced high wind and heavy snow across portions of northern and central Wyoming. Gusty southwest winds ahead of the cold front were strong enough to topple an empty semitrailer on Wyoming Boulevard on the south side of Casper. The truck blew over about 9:30MST on January 3. A brief period of strong westerly wind also occurred near Clark where a peak speed of 89 mph was clocked around 7:00MST. Strong northwest wind behind the cold front favored a period of 60+ mph wind gusts during the early evening across the Interstate 90 corridor through northern Johnson County. Behind the cold front, much colder air filtered into the Wind River Basin.	
August 17, 2015	\$50,000 property
A severe thunderstorm erupted over the southern Bighorn Mountains west of Kaycee in the warm, moist air ahead of a cold front dropping south from Montana. The storm increased in intensity as it moved southeast off the Bighorns and tapped more unstable air over southern Johnson and northern Natrona counties. High winds also plagued both counties and eastern Fremont County in the wake of the cold front. A strong pressure gradient allowed for northerly wind gusting to around 60 mph. The wind was strong enough to damage a storage unit at Alcova in southern Natrona County. A portion of the unit, which was oriented perpendicular to the wind, was torn apart and tossed over 100 feet into the North Platte River. Strong north wind in the wake of a cold front struck a storage unit oriented west-to-east on the north side of the North Platte River. The nearly perpendicular wind eventually tore a portion of the roof and walls from the unit and threw the debris over 100 feet into the river.	

Date	Damages
February 18, 2016	\$20,000 property
The passage of a potent Pacific cold front in concert with a favorable jet stream position, strong mid-level winds, and a tightening pressure gradient led to widespread high wind east of the Continental Divide. Some foothill locations experienced the strong wind over an extended period spreading across two days. The strongest winds were in the wind prone areas near Clark where a wind gust of 103 mph was recorded on February 18. In northern Johnson County, damage was reported in and around the town of Buffalo where wind gusts of 71 to 81 mph were recorded. The damage consisted of three downed light poles, roof damage of varying degrees, and trees toppled. A semi-truck was overturned by high winds along Outer Drive on the south side of Casper around 7:45MST on Friday. Strong wind on the west side of Cody blew down at least one billboard later that afternoon. Wind gusts near or above hurricane force were also recorded outside of Casper and in the Absaroka Range. Many locations across Natrona County reported wind gusts over 58 mph. Some of the highest gusts included 79 mph along Outer Drive south of Casper, 73 mph at Twenty Mile Hill, and 66 mph at the airport west of Casper. On Outer Drive, a semi-truck was overturned by the wind around 7:45MST.	
October 3, 2016	\$25,000 property
The pressure gradient ahead of a deepening low pressure system in the Great Basin produced strong southwest wind across central Wyoming. Peak wind speeds topped 60 mph at several locations. Wind gusts on the south side of Casper reached 73 mph around 1800MST and damaged the roof of a church just north of the intersection of Wyoming Boulevard and Casper Mountain Road.	
December 18, 2016	\$20,000 property
An extended period of high wind occurred in Natrona County. Along Outer Drive south of Casper, there were many wind gusts of hurricane force, including a maximum of 88 mph. The strong winds blew over a tractor trailer truck along Outer Drive south of Casper, resulting in the closure of the road for several hours. The strong winds also knocked out power to close to 5000 people in Casper when the winds were strongest.	
December 27, 2016	\$50,000 property
Hurricane force winds occurred in Casper and caused significant damage. Wind gusts of 88 mph were clocked along Outer Drive with 64 mph at the Casper Airport. Damage around Casper included several car ports being destroyed at the Pheasant Ridge Apartment Complex that damaged several cars, a tree falling on two trucks along CY Avenue and a trailer blowing over at the Sunrise Shopping Center.	
December 11, 2021	\$50,000 property

Date	Damages
	A trough moving across Wyoming, strong mid-level winds, and a potent jet combined to produce high wind across much of central Wyoming. The highest recorded wind was west of Clark where a maximum wind gust of 118 mph occurred. The maximum wind gust reported around Casper was 88 mph along Wyoming Boulevard. Other notable wind gusts included 77 mph at I-25 and Hat Six Road and 63 mph at the Casper-Natrona County International Airport. The high wind caused the collapse of a barn at the Central Wyoming Fairgrounds with 21 horses inside of it. Only 2 horses suffered scratches from the collapse. Wind gusts of hurricane force also occurred in the Green Mountains and Wind River Range. The high winds led to road closures at times and a ban on high-profile vehicles on many roads.
December 26, 2022	\$25,000 property
	High wind was reported through much of Natrona County, especially around Casper. The highest wind gusts were along Wyoming Boulevard south of Casper, with gusts as high as 89 mph. Wind gusts of hurricane force were also reported along Hat Six Road, the Natrona County airport and near Mills. The wind caused minor damage near Casper, including a trailer that was destroyed at a restaurant.

Figure 39 Historical Wind Events

Natrona County - Historical Wind Events



Tornado

Tornado events have caused \$352, 680 in damages from 1962 to 1988 detailed in **TABLE 131**. There have been 38 tornados (**TABLE 130**) in Natrona County that have had no crop damages with three occurring since the last plan was published. Additionally, there has been no tornado damage reported in the county since 1988. **Figure 40** maps the Historical tornado events in Natrona County.

Table 130 Tornado Events

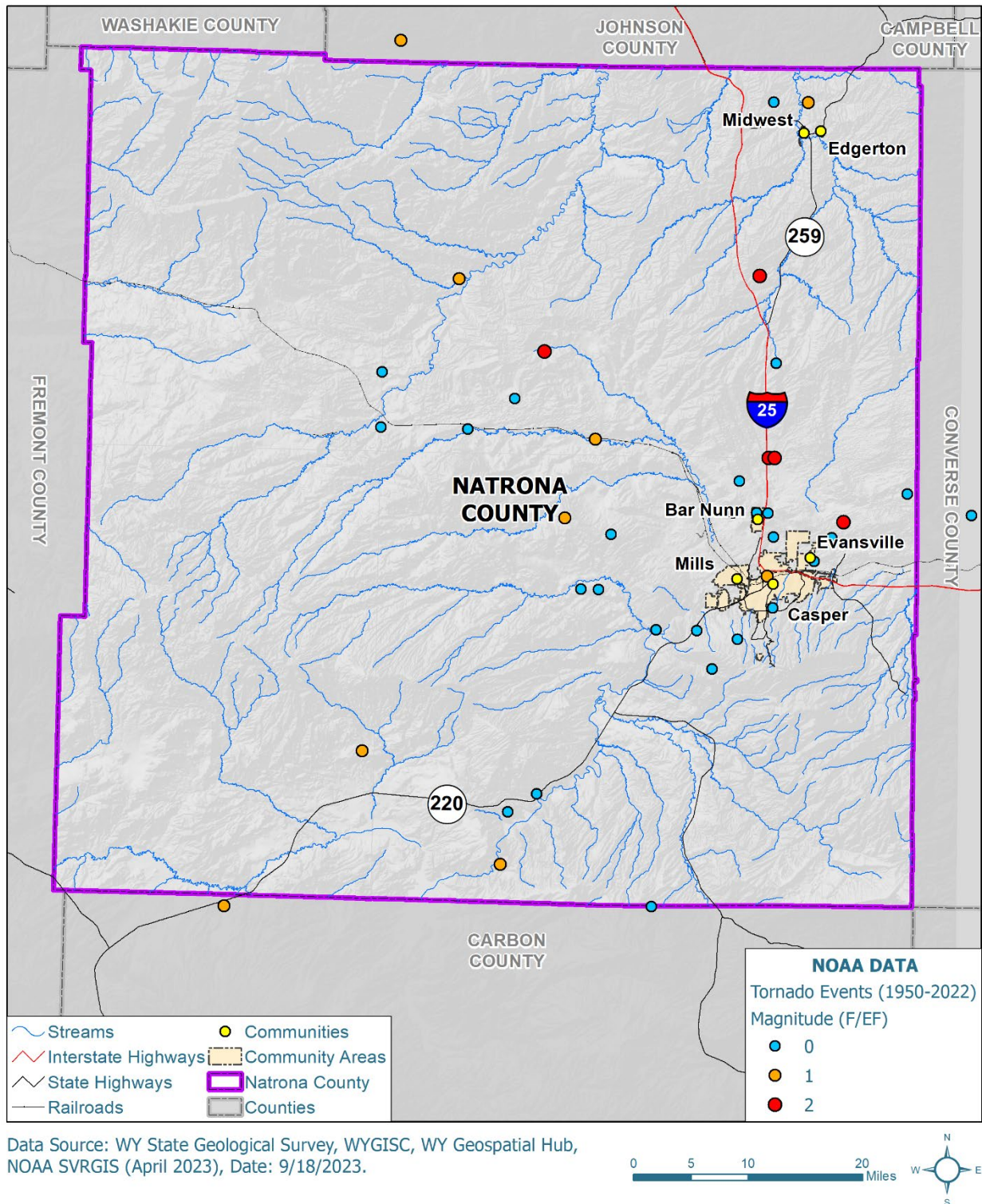
Total	F0	EF0	F1	F2	No Rating
38	16	7	7	5	3

Table 131 Damaging Events

Date	Magnitude	Injuries	Property Damages
6/7/1962	-	-	\$25,000
6/11/1962	F2	4	\$25,000
6/12/1962	F1	-	\$30
6/15/1962	F1	-	\$25,000
9/2/1968	-	-	\$30
5/15/1969	-	-	\$30
5/29/1971	F2	3	0
8/9/1974	F1	-	\$30
5/8/1975	F1	-	\$30
7/20/1978	F2	1	\$25,000
6/5/1982	F0	-	\$30
6/18/1987	F2	-	\$250,000
7/7/1988	F1	-	\$2,500
Total		\$352,680	

Figure 40 Historical Tornado Events

Natrona County - Historical Tornado Events

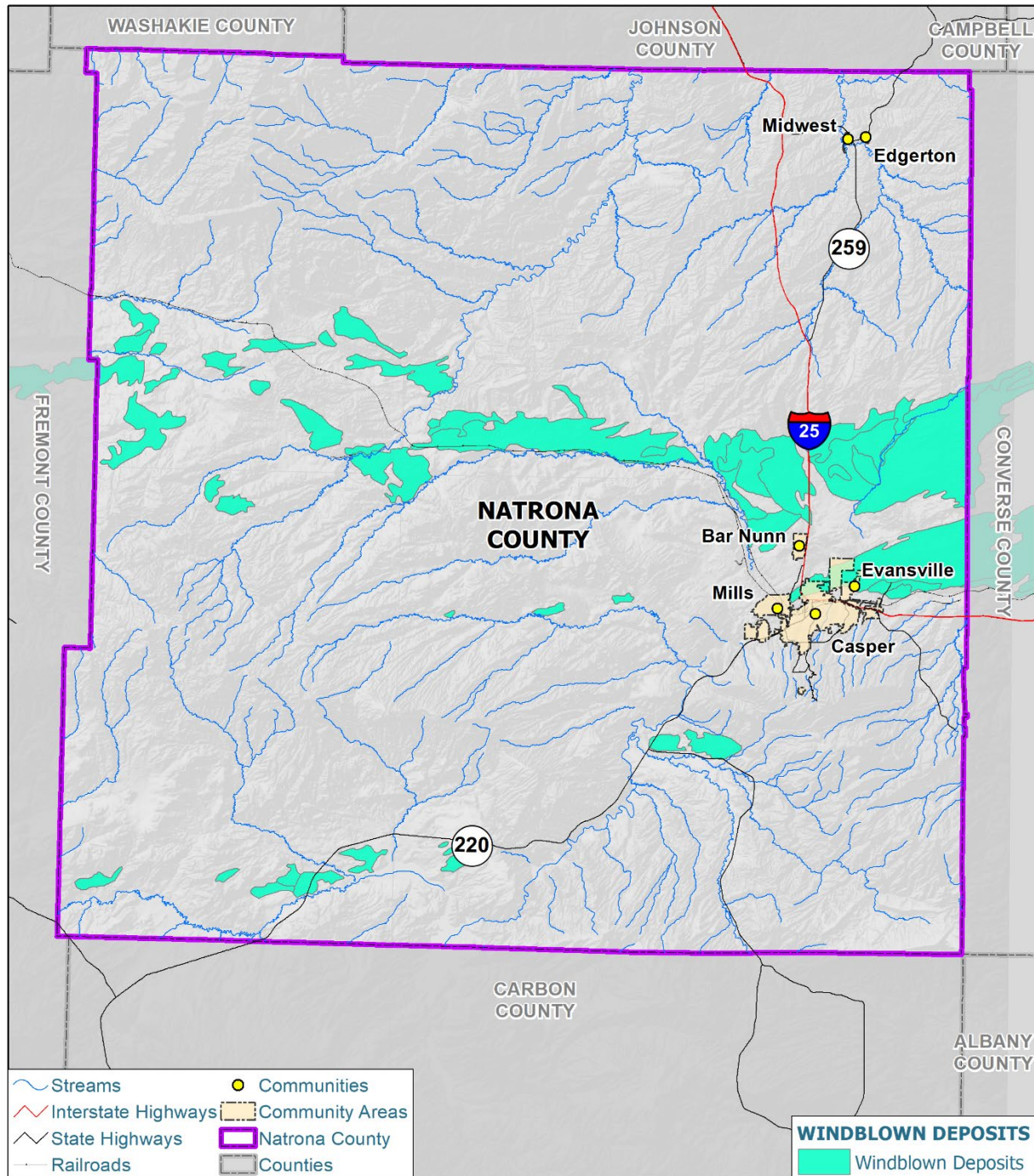


LOCATION

Severe weather events can occur anywhere in Natrona County and pose a similar risk to all local governments. These types of storms can cover large areas and can affect multiple towns, cities, and counties. **FIGURE 41** presents the location of windblown deposits in the county.

Figure 41 Windblown Deposits

Natrona County - Windblown Deposits



Data Source: WY State Geological Survey, WYGISC, WY Geospatial Hub,
Date: 9/18/2023.



Tornado

EXPOSURE AND VULNERABILITY

Lifelines

Thunderstorm and Lightning

Communication, Energy, Food, Hydration, and Shelter, and Transportation are the community lifelines most vulnerable to the impacts from a thunderstorm and lightning event. A large-scale power outage resulting from a storm could stress some systems.

Hail

All infrastructure Lifelines are exposed to risks associated with hail. Energy and Communications infrastructure could be damaged. Transportation could be impacted if hail causes accidents, and injuries or deaths. Hail can also have significant impacts on Communication and Energy, as hailstorms can cut power and damage lines of communication to communities, by causing damage to power grids, power lines, and cell towers.

Wind

All community Lifelines across Natrona County are vulnerable to the impacts from a severe wind event. Expected impacts to the Energy Lifeline are anticipated to pose the most risk to the county. **TABLE 132** details the Lifelines that are located in windblown deposit areas.

Table 132 Lifelines in Windblown Deposit Areas

Lifelines	Bar Nunn	Casper	Edgerton	Evansville	Midwest	Mills	Unincorporated	Total
Communications	-	-	-	-	-	-	1	0
Energy	-	-	-	-	-	-	1	0
Energy (Miles)	-	3.3	-	1.5	-	-	28.4	33.2
Food, Hydration, & Shelter	-	-	-	-	-	-	-	0
Health & Medical	-	-	-	-	-	-	-	0
Safety & Security	-	-	-	-	-	-	-	0

Lifelines	Bar Nunn	Casper	Edgerton	Evansville	Midwest	Mills	Unincorporated	Total
Transportation	-	-	-	-	-	1	9	10
Transportation (Miles)	-	0.7	-	-	-	-	40.4	41.1

Tornado

All Lifelines are exposed to tornadoes. The most common problems associated with this hazard are utility losses, which falls under the Energy and Communications Lifeline. Downed power lines can cause blackouts, leaving large areas isolated. Phone, water, and sewer systems may not function. Communication infrastructure may be affected by an event, creating issues with dispatching first responders, keeping the public informed, and requesting aid and supplies.

Tornadoes can cause significant damage to trees and power lines. The Transportation Lifeline can be impacted if debris caused by tornadoes blocks roads, incapacitates transportation corridors, isolates populations, and disrupts ingress and egress. Of particular concern are roads providing access to isolated areas and to those with access and functional needs (AFN).

Any facility that is in the path of a tornado is likely to sustain damage and medical or sheltering facilities sustaining damages could have cascading impacts for the community.

People

It can be assumed that the entire planning area is exposed severe weather events. Areas of greater exposure are where higher population densities exist. Certain areas experience more severe events due to geographic location and local weather patterns. Populations living at higher elevations, with large stands of trees or power lines may be more susceptible to wind damage and blackouts.

Populations with access and functional needs (AFN), including the elderly, those with low income, linguistically isolated populations, people with mobility issues, and residents living in areas that are isolated from major roads may see more impacts from severe wind events. Power outages can be life threatening to those dependent on electricity for medical support. Isolation of these populations is a significant concern. Those working outdoors or recreating in the area are more vulnerable to severe weather events.

Structures

Thunderstorm and Lightning

All buildings are considered to be exposed to the thunderstorm and lightning hazards, but structures in poor condition or in particularly vulnerable locations (located on hilltops or exposed open areas) may risk the most damage. The frequency and degree of damage will depend on specific locations and the condition of the building. Building codes can help to mitigate damage from thunderstorm events, including using hail protective roof materials and strengthening of the common building component failure points.

Older buildings are often not retrofitted to newer building codes due to due cost and capacity, which is typically the case in rural areas where communities were built decades ago.

Lightning strikes can also damage county infrastructure such as power lines and cellphone towers.

Hail

All buildings are considered exposed to hail. Depending on size, hail can damage roofs, break windows, and tear up siding, all of which can lead to significant water damage. Hail also damages HVAC systems that are installed on the exterior of buildings and solar panels installed on roofs. Additionally, hail has the ability to cause damage to concrete, resulting in dents, cracks, and surface spalling that can occur on sidewalks and roads. Over time the damage caused by hail can wear down concrete, compromising its strength.

Wind

Natrona County has 987 commercial, industrial, public, and residential buildings (985 of which are improved) that are in areas of windblow deposits detailed in **TABLE 133**. The total value of property exposed is \$600,496,876.

All buildings are considered exposed to the high wind. Vulnerable structures such as those in poor condition or mobiles, or in often affected locations (located on hilltops or exposed open areas) may risk the most damage. The frequency and degree of damage will depend on specific locations and behavior of the winds.

Wind pressure can create a direct and frontal assault on a structure, pushing walls, doors, and windows inward. Conversely, passing currents can create lift and suction forces that act to pull building components and surfaces outward. The effects of winds are magnified in the upper levels of multi-story structures. As positive and negative forces impact the building's protective envelope (doors, windows, and walls), the result can be roof or building component failures and considerable structural damage.

Table 133 Structures in Windblown Deposit Areas

	Total Structure Count	Total Improved Structure Count	Total Structure Value	Estimated Content Value
Bar Nunn	-	-	\$-	\$-
Casper	34	34	\$70,503,928	\$150,027,293
Commercial	21	21	\$52,519,780	\$105,239,244
Industrial	8	8	\$10,057,323	\$28,934,399
Public	5	5	\$7,926,825	\$15,853,650
Residential	-	-	\$-	\$-
Edgerton	1	1	\$583,362	\$1,166,724
Evansville	1	1	\$583,362	\$1,166,724
Commercial	-	-	\$-	\$-
Midwest	8	8	\$5,215,702	\$11,009,575
Mills	7	7	\$4,059,359	\$8,118,717
Commercial	1	1	\$1,156,343	\$2,890,858
Industrial	944	942	\$247,884,483	\$438,293,285
Unincorporated	50	48	\$77,580,707	\$155,192,459
Commercial	29	29	\$29,123,551	\$90,532,809
Industrial	3	3	\$21,456,982	\$42,913,964
Public	862	862	\$119,723,243	\$149,654,054
Residential	987	985	\$324,187,474	\$600,496,876
Total	-	-	\$-	\$-

Tornado

Any structure that is in the path of a tornado is likely to sustain damage and medical or sheltering facilities sustaining damages could have cascading impacts for the community. All property is vulnerable during tornado events, but properties in poor condition or manufactured housing are at the highest risk.

Natural, Historic, and Cultural Resources

Natural habitats risk major damage and destruction from hail. Large hail has the potential to damage vegetation, tree canopy, and harm animals. Crop yields can be significantly reduced in the event of a hailstorm, and farmers will also experience damage to their physical equipment. Large hail has the possibility to cause significant bruising, injury, and even death to livestock and wild animals, disrupting agricultural yields and natural ecosystems.

Hail also can cause major damage to, and destruction of, historical buildings. Large hail can break slate and tile roofing, shatter windows, and dent copper flashings causing irreparable damage to historical buildings. Additionally, this damage can allow water to enter the building and its foundations causing water damage, but also under freezing temperatures will expand once frozen causing further fissures to the structure of a building.

Lightning strikes can be destructive to the natural resources of a community. Strikes can hit trees with the potential to cause wildfires. A 2018 study by the EPA argues that lightning strikes can have negative impacts on air quality. Lightning strikes can also damage historical buildings that may not be able to be repaired.

Habitats may be exposed to tornado risk and an event could destroy critical components of these areas. If tornadoes impact facilities that store hazardous materials, the surrounding areas may be especially vulnerable to contamination from a hazardous materials release.

Severe winds can have tremendous impacts on the natural, historic, and cultural resources of a community. Strong winds can damage buildings, especially older historic buildings, and public community spaces, such as parks and public art. The environment is highly exposed to high wind. Natural habitats risk major damage and destruction. Severe winds can strip and uproot vegetation, affecting natural ecosystems and agricultural crop yields.

Local Vulnerability

Economic impact from severe weather events is possible, as damage to property, crops, and livestock may result in losses. Events with large hail, tornadoes, or lightning strikes have been known to cause the death of livestock and devastate crops, which can bring considerable losses to the local and regional economy.

In addition, disruption of Lifelines and daily operations due to damaged infrastructure and facilities can cause losses. Repairing, rebuilding, or replacing critical equipment may be a slow process which could have cascading effects on businesses and the local economy.

Any extended delay of returning to normal functioning has the potential to close businesses and impact industry.

TABLE 134 provides additional vulnerability information identified by each local government.

Table 134 Local Government Vulnerability

Local Government	Local Vulnerability
Bar Nunn	Sewer lift station and utility infrastructure would be most heavily impacted.
Casper	Power outages coupled with damage to structures.
Evansville	Power outages for the community. Events which create flooding along East Yellowstone Highway, Oildale Street, and Western Avenue.
Mills	Wide-scale power outage is the most concerning impact from an event.
Natrona Co. Fire	Power outage is the most concerning impact from an event, including damage from hail and wind gusts.
Casper Mountain Fire	Largest impacts would be damage to emergency communications towers.
Unincorporated County	Wide-scale power outage is the most concerning impact from an event.

FUTURE TRENDS IN DEVELOPMENT

All future development can be affected by severe weather. The vulnerability across the county is increasing through time as more people move into the county. The ability to mitigate impacts lies in consistent enforcement of codes and regulations for new construction. Adherence to these building codes will ensure construction is more likely to withstand a severe weather event.

Public education is critical as new residents move to the area. Many may not have experienced the types of severe weather events seen in the county and will not know how to be prepared. Educating the population on these hazards and how to minimize risk from events will prove beneficial for the county.

TABLE 135 provides additional information identified by each local government.

Table 135 Local Government Population Trends

Local Government	Local Population Trends
Bar Nunn	No population change has recently occurred, or is expected, which would impact hazard vulnerability.
Casper	Any increases in population will increase the community's collective vulnerability.
Evansville	No population change has recently occurred, or is expected, which would impact hazard vulnerability.
Mills	No population change has recently occurred, or is expected, which would impact hazard vulnerability.
Unincorporated County	Population in the unincorporated areas of the county did not increase, nor are major increases expected in the future. Overall vulnerability has not increased, nor is expected to, due to development.

PROBABILITY OF FUTURE OCCURRENCES

The NOAA Storm Events database Has recorded 734 severe weather events in the 73 years between 1950 and 2023, meaning there is an 100% chance of a severe weather event occurring annually.

The probability of future hail is also likely, as each year between June and August events occur within the region. There have been six notable hail events since 1950, which equates to an 8% annual chance. The unknowns about these events are the duration, size of the hail, and the damage that will be inflicted. Hail size varies significantly and there is no way to predict which storms will bring dangerously large hail. The majority of hail storms do not cause extensive damage, but insuring property and crops is a critical component of protecting against future events.

There have been thirteen notable tornadoes since 1950, which equates to a 17% annual chance.

WILDFIRE

PREVIOUS OCCURRENCES

Since 1980, Natrona County has experienced numerous wildfire events, outlined in **TABLE 136**. The cause of these events are both human and natural. Events like the Cole Creek, Sheep Herder Hill, and Jackson Canyon fires, highlighted in **TABLE 137**, burned thousands of acres and caused millions of dollars in damages. **FIGURE 42** maps historical wildfire events in the county.

Table 136 Wildfire Events

Date	Fire Name	Acres Burned	Cause
1980	Sherwood	2,000	Natural
1985	Goat Mtn	6,661	Natural
1991	Mudsprings	2,266	Human
1995	Ormsby	1,667	Natural
1996	Geary D. 2	14,700	Natural
1996	Cole Creek	9,290	Human
1998	Lawn Creek	1,033	Human
2000	Henderson	8,390	Natural
2000	Deadhorse	5,900	Natural
2000	33 Mile	2,514	Natural
2000	Hemmingway	1,069	Natural
2001	Casper Creek	1,354	Natural
2005	Sage Hen	1,271	Natural
2006	Sawmill	16,503	Natural
2006	Jackson Canyon	11,765	Natural
2006	Poison Spider	3,166	Natural
2010	Geary Dome	2,879	Human
2011	205	2,573	Human
2011	Arapahoe	2,073	Human
2012	Shepherd Hill	15,556	Human/Natural
2015	Station AKA Cole Creek	9,516	Human

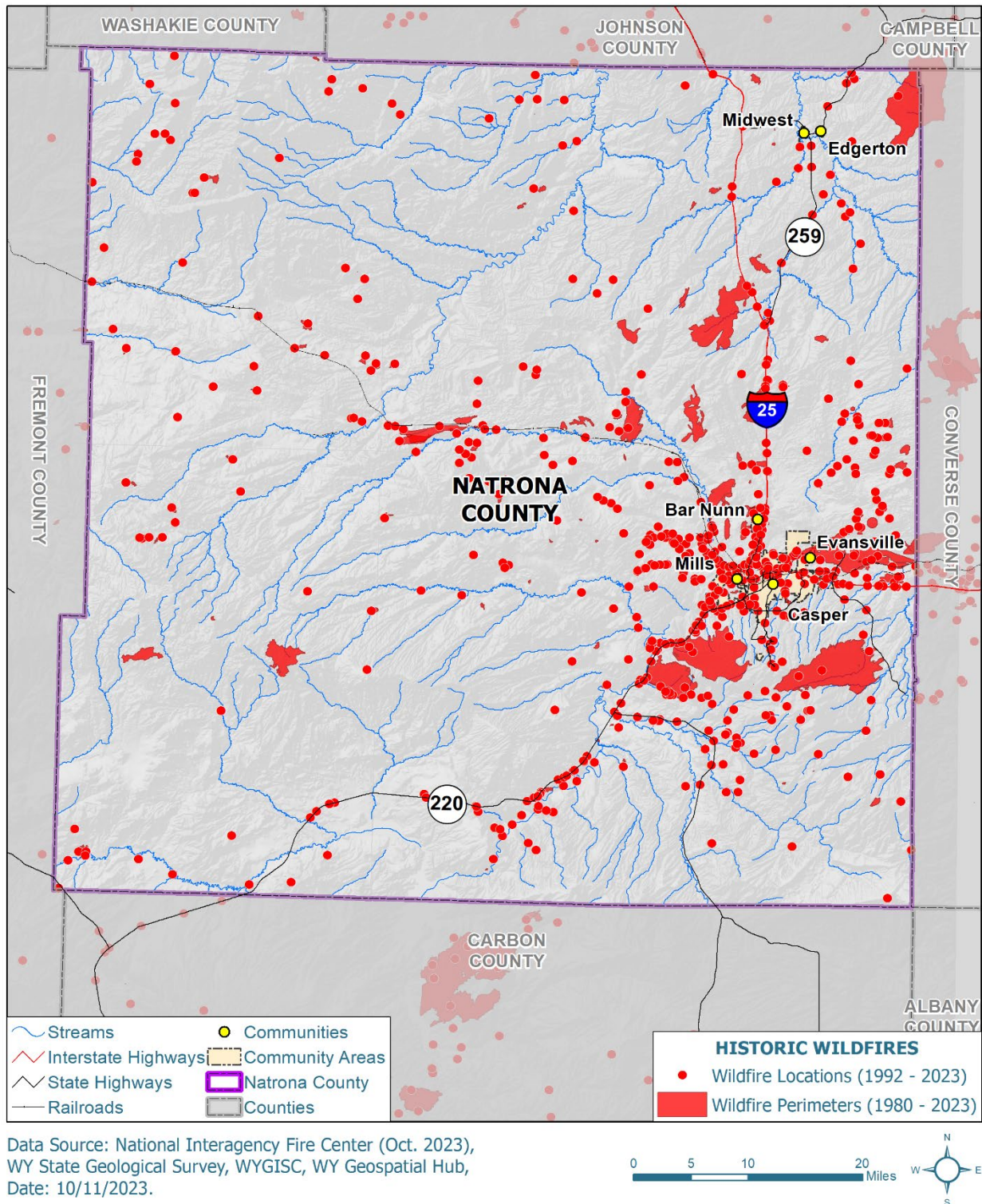
Date	Fire Name	Acres Burned	Cause
2020	Middle Fork	2,112	Unknown

Table 137 Notable Damaging Wildfire Events

Date	Fire Name	Property Damages
2006	Jackson Canyon	\$1,240,000
2007	Bone Creek	\$100,000
2012	Sheep Herder Hill	\$4,000,000
2015	Station AKA Cole Creek	\$5,000,000
2020	Middle Fork	\$70,000
Total		\$10,410,000

Figure 42 Wildfire History

Natrona County - Historic Wildfires



LOCATION

FIGURE 43 illustrates the wildfire risk across Natrona County additionally, **FIGURE 44** shows the scale of wildfire intensity across Natrona County.

Figure 43 Wildfire Risk

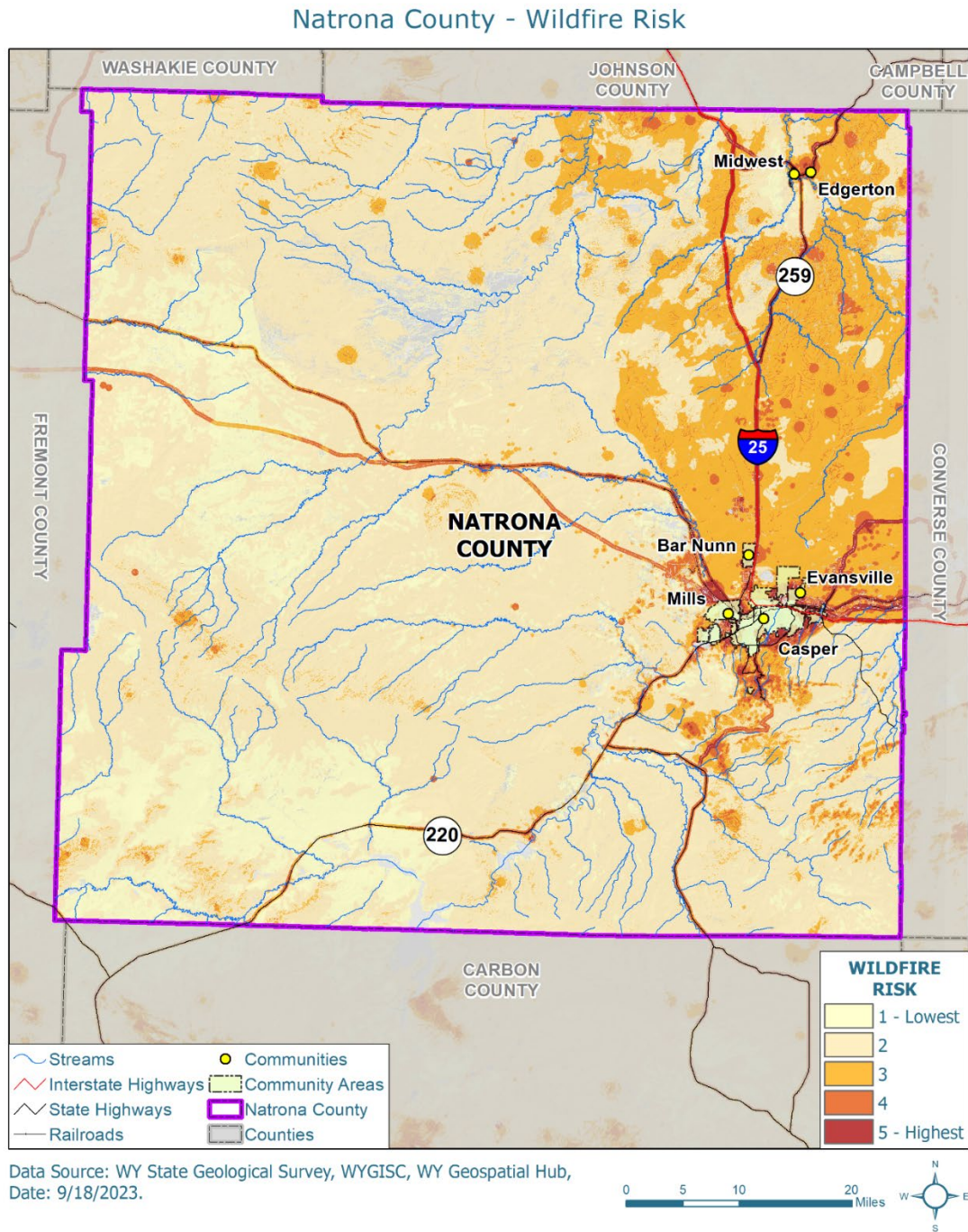
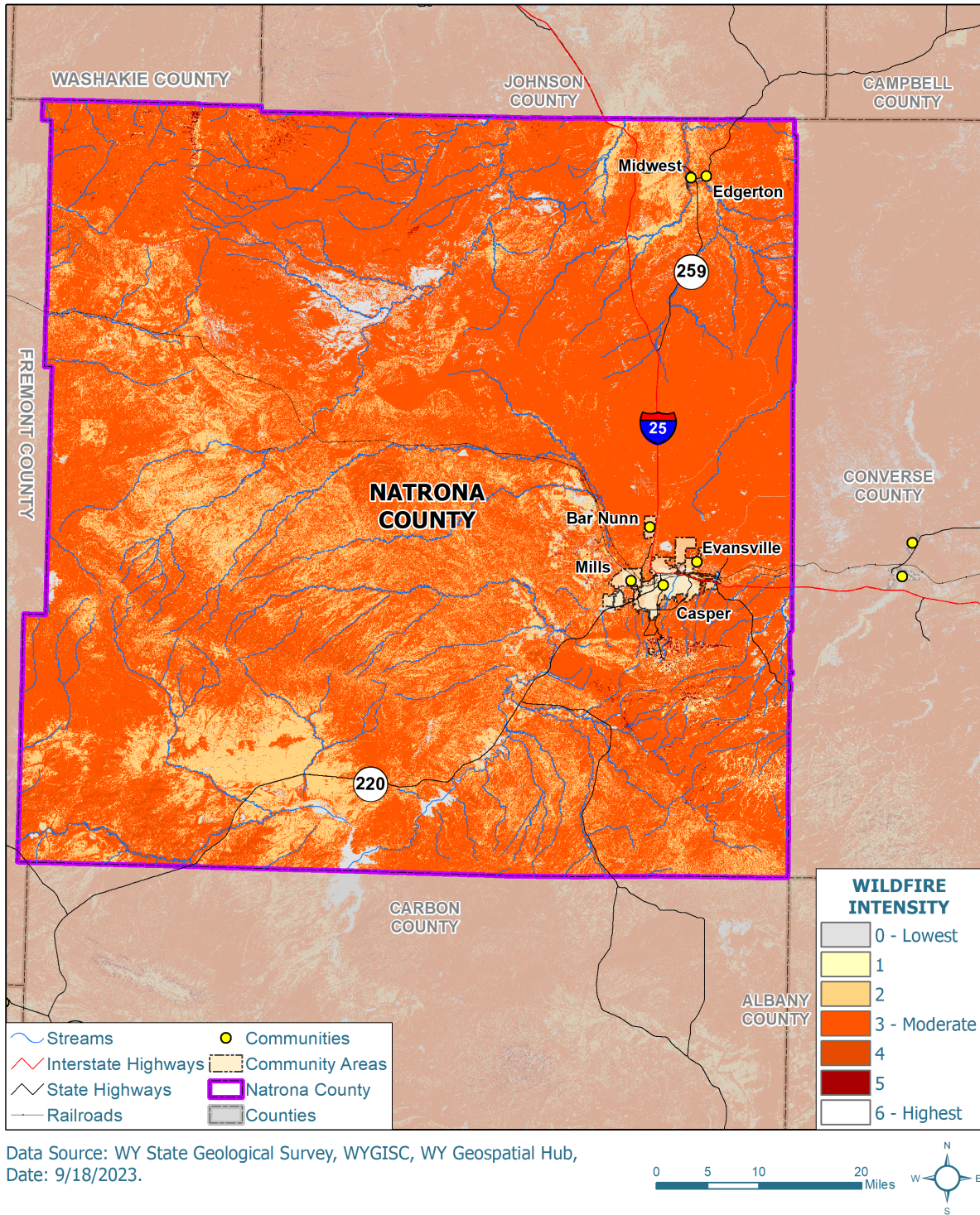


Figure 44 Wildfire Intensity

Natrona County - Wildfire Intensity



EXPOSURE AND VULNERABILITY

Lifelines

All community Lifelines across Natrona County are vulnerable to the impacts from wildfire events. Multiple Lifelines are at risk due to wildfire, from a structural standpoint as well as resource management. While large-scale fires are rare for the county each fire can tax countywide resources, impacting public safety and government services. Fires can create conditions that block or prevent ingress / egress and can isolate residents and emergency service providers.

Energy infrastructure can be impacted as power line poles are made of wood and susceptible to burning. Pipelines carrying fuel can be damaged, potentially leading to a catastrophic explosion and interruption of resource delivery. Any Lifeline infrastructure with wood frame construction is especially vulnerable during wildfire events. Most roads and railroads would be without damage except in the worst scenarios.

Health & Medical services as well as Food, Water, & Shelter may be impacted if there is a need to evacuate the public and citizens or first responders need medical care.

TABLE 138 details the Lifelines that are located in low and moderate wildfire intensity areas.

Table 138 Lifelines in Low and Moderate Wildfire Intensity Areas

Lifelines	Bar Nunn	Casper	Edgerton	Evansville	Midwest	Mills	Unincorporated	Total
Low								
Communications	-	-	-	-	-	-	-	0
Energy	-	1	-	1	-	-	3	5
Energy (Miles)	1.0	0.2	-	0.2	-	-	68.4	68.9
Food, Hydration, & Shelter	1	28	0	1	1	0	2	33
Health & Medical	-	7	-	-	-	-	-	7
Safety & Security	1	9	-	3	2	2	5	22
Transportation	-	1	-	-	-	-	17	18

Lifelines	Bar Nunn	Casper	Edgerton	Evansville	Midwest	Mills	Unincorporated	Total
Transportation (Miles)	-	0.8	-	0.1	-	0.3	16.5	17.7
Moderate								
Communications	-	-	-	-	-	1	14	15
Energy	-	-	-	-	-	-	-	0
Energy (Miles)	0.6	5.7	-	3.5	-	-	184.9	194.7
Food, Hydration, & Shelter	-	1	-	-	-	-	1	2
Health & Medical	-	1	-	-	-	-	-	1
Safety & Security	1	1	-	-	-	-	1	3
Transportation	-	2	-	3	-	1	88	94
Transportation (Miles)	0.1	2.4	-	1.3	0.2	2.6	152.5	159.1

People

Smoke and air pollution from wildfires can be a severe health hazard, especially for sensitive populations, including children, the elderly, and those with respiratory and cardiovascular diseases. Smoke generated by wildfire consists of visible and invisible emissions that contain particulate matter (soot, tar, water vapor, and minerals), gases (carbon monoxide, carbon dioxide, nitrogen oxides), and toxics (formaldehyde, benzene). Emissions from wildfires depend on the type of fuel, the moisture content of the fuel, the efficiency (or temperature) of combustion, and the weather. Public health impacts associated with wildfire include difficulty in breathing, odor, and reduction in visibility.

Wildfire may also threaten the health and safety of those fighting the fires. First responders are exposed to the dangers from the initial incident and the after-effects from smoke inhalation and heat stroke.

A report titled: 'Ahead of the Fire: Where will the West's next deadly wildfire strike? The risks are everywhere.' was published in The Arizona Republic in the summer of 2019. The study, spurred by the devastating Paradise Fire in California, looked across 5,000 small communities throughout 11 states to determine wildfire risk.

Structures

TABLE 139 summarizes the building exposure to wildfire risk by jurisdiction. The data classifies wildfire risk ranging from one to five, with five equating to the most statewide risk. Within each jurisdiction, residential properties comprise the majority of buildings exposed to moderate wildfire risk. The total value of properties exposed to wildfire risk is \$6,114,980,852. While this analysis attempts to quantify those structures at most risk across the county, it should be noted that all property is potentially vulnerable to wildfire.

Table 139 Structures in Moderate Wildfire Intensity Areas

	Total Structure Count	Total Improved Structure Count	Total Structure Value	Estimated Content Value
Bar Nunn	844	844	\$160,235,323	\$230,568,152
3				
Commercial	16	16	\$14,967,768	\$29,880,647
Industrial	10	10	\$8,115,000	\$23,650,252
Public	3	3	\$7,183,117	\$14,366,234
Residential	770	770	\$125,302,026	\$156,627,533
4				
Commercial	1	1	\$200,592	\$401,185
Industrial	1	1	\$47,022	\$117,555
Residential	43	43	\$4,419,798	\$5,524,747
Casper	1,348	1,346	\$812,229,806	\$1,440,630,878
3				
Commercial	243	243	\$422,782,559	\$839,491,825
Industrial	63	62	\$46,957,032	\$140,519,738

	Total Structure Count	Total Improved Structure Count	Total Structure Value	Estimated Content Value
Public	18	18	\$26,739,932	\$55,036,737
Residential	886	885	\$278,947,938	\$348,684,923
4				
Commercial	4	4	\$4,737,376	\$9,474,752
Industrial	3	3	\$3,670,846	\$11,930,250
Residential	87	87	\$20,551,483	\$25,689,354
5				
Residential	44	44	\$7,842,639	\$9,803,299
Edgerton	46	46	\$14,777,280	\$31,349,042
3				
Commercial	6	6	\$3,625,369	\$7,250,739
Industrial	6	6	\$4,876,477	\$14,833,475
Public	2	2	\$1,894,049	\$3,788,098
Residential	30	30	\$4,146,415	\$5,183,019
4				
Residential	2	2	\$234,969	\$293,711
Evansville	530	530	\$213,572,685	\$435,144,273
3				
Commercial	66	66	\$103,893,111	\$195,474,063

	Total Structure Count	Total Improved Structure Count	Total Structure Value	Estimated Content Value
Industrial	39	39	\$58,580,584	\$174,657,244
Public	1	1	\$1,518,972	\$3,037,943
Residential	398	398	\$46,574,799	\$58,218,499
4				
Residential	21	21	\$2,376,041	\$2,970,052
5				
Residential	5	5	\$629,178	\$786,472
Midwest	91	90	\$16,142,171	\$25,185,312
3				
Commercial	2	2	\$1,234,250	\$2,468,499
Public	3	3	\$5,442,548	\$10,885,095
Residential	86	85	\$9,465,374	\$11,831,717
Mills	181	179	\$113,277,586	\$257,852,596
3				
Commercial	54	52	\$57,912,396	\$115,824,792
Industrial	48	48	\$41,551,290	\$122,973,784
Public	1	1	\$2,322,265	\$4,644,530
Residential	73	73	\$9,472,692	\$11,840,865
4				

	Total Structure Count	Total Improved Structure Count	Total Structure Value	Estimated Content Value
Commercial	1	1	\$179,784	\$269,676
Residential	3	3	\$1,364,686	\$1,705,858
5				
Residential	1	1	\$474,473	\$593,091
Unincorporated	5,250	5,210	\$1,825,051,363	\$3,694,250,599
3				
Commercial	490	468	\$459,657,371	\$917,840,452
Industrial	474	470	\$546,240,282	\$1,713,450,547
Public	18	16	\$19,806,932	\$40,260,258
Residential	3,835	3,824	\$688,763,174	\$860,953,968
4				
Commercial	25	24	\$30,221,564	\$53,837,745
Industrial	5	5	\$3,389,250	\$9,649,104
Residential	332	332	\$62,792,529	\$78,490,662
5				
Commercial	1	1	\$903,964	\$1,807,927
Industrial	1	1	\$1,091,652	\$2,729,130
Residential	69	69	\$12,184,645	\$15,230,806
Total	8,290	8,245	\$3,155,286,213	\$6,114,980,852

Natural, Historic, and Cultural Resources

In addition to stripping the land of vegetation and destroying forest resources, large, intense fires can harm the soil, waterways, and the land itself. Soil exposed to intense heat may lose its capability to absorb moisture and support life. Exposed soils erode quickly and enhance siltation of waterways; thereby enhancing flood potential, harming aquatic life, and degrading water quality. Lands stripped of vegetation are also subject to increased debris flow.

Fire is a natural and critical ecosystem process in most terrestrial ecosystems, dictating in part the types, structure, and spatial extent of native vegetation. However, wildfires can cause severe environmental impacts:

- **Damaged Fisheries** – Critical fisheries can suffer from increased water temperatures, sedimentation, and changes in water quality.
- **Soil Erosion** – The protective covering provided by foliage and dead organic matter is removed, leaving the soil fully exposed to wind and water erosion. Accelerated soil erosion can occur, causing landslides and threatening aquatic habitats.
- **Spread of Invasive Plant Species** – Non-native woody plant species frequently invade burned areas. When weeds become established, they can dominate the plant cover over broad landscapes, and become difficult and costly to control.
- **Disease and Insect Infestations** – Unless diseased or insect-infested trees are swiftly removed, infestations and disease can spread to healthy forests and private lands. Timely active management actions are needed to remove diseased or infested trees.
- **Destroyed Endangered Species Habitat** – Catastrophic fires can have devastating consequences for endangered species.
- **Soil Sterilization** – Topsoil exposed to extreme heat can become water repellant, and soil nutrients may be lost. It can take decades or even centuries for ecosystems to recover from a fire. Some fires burn so hot they can sterilize the soil.

Many ecosystems are adapted to historical patterns of fire occurrence. These patterns, called “fire regimes,” include temporal attributes (e.g., frequency and seasonality), spatial attributes (e.g., size and spatial complexity), and magnitude attributes (e.g., intensity and severity), each of which have ranges of natural variability. Ecosystem stability is threatened when any of the attributes for a given fire regime diverge from its range of natural variability.

Local Vulnerability

Wildfire can impact the economy due to potential damage to property, crops, and livestock. There may be direct costs due to losses and indirect costs for the loss of work that comes from harvest and livestock transport. Overhead that may result during repair or reconstruction of properties may also be an indirect cost.

If roads are closed or areas are evacuated due to a fire, transport may be limited, and businesses may have to close. While this can typically be a short-term impact, prolonged wildfires can have a large impact on the operations of a community and its economy.

TABLE 140 provides additional vulnerability information identified by each local government.

Table 140 Local Government Vulnerability

Local Government	Local Vulnerability
Bar Nunn	All structures and infrastructure in the WUI.
Casper	Limited ingress/egress around the Casper Mountain and Brookhurst areas.
Evansville	All structures in the WUI.
Mills	All structures and communities in the WUI.
Natrona Co. Fire	Limited ingress/egress around the Casper Mountain and Brookhurst areas.
Casper Mountain Fire	All structures in the WUI. Evacuation concerns with summer camps and events throughout the district.
Unincorporated County	According to "Wildfire Risk to Communities" populated areas in Natrona County are at high risk of wildfire, higher than 73% of counties in the United States. Populated areas in Natrona County have, on average, greater wildfire likelihood than 71% of counties in the United States. ¹¹ The Casper Mountain and Brookhurst areas have limited ingress/egress.

FUTURE TRENDS IN DEVELOPMENT

As some of these areas are at a higher risk to wildfire and located in the WUI, future development has the potential to greatly increase the risk to this hazard.

While the risk of wildfire on public land is generally understood, much of the adjacent private land is equally at risk. Private lands adjoining public lands are becoming increasingly valued for their scenic beauty, solitude, and access to recreation opportunities. As development in these areas continue to increase, the risk to lives, property, and resources correspondingly increases.

¹¹ <https://wildfirerisk.org/explore/risk-to-homes/56/56025/>

TABLE 141 provides additional information identified by each local government.

Table 141 Local Government Population Trends

Local Government	Local Population Trends
Bar Nunn	No population change has recently occurred, or is expected, which would impact hazard vulnerability.
Casper	Any population growth in the WUI will increase the community's collective vulnerability.
Evansville	No population change has recently occurred, or is expected, which would impact hazard vulnerability.
Mills	No population change has recently occurred, or is expected, which would impact hazard vulnerability. New subdivisions will occur in or near the WUI, increasing risk.
Unincorporated County	Population in the unincorporated areas of the county did not increase, nor are major increases expected in the future. Overall vulnerability has not increased, nor is expected to, due to development.

PROBABILITY OF FUTURE OCCURRENCES

Wildfires are likely to occur in the region, as small fires happen every year. In the 43 years between 1980 and 2023, there have been 22 wildfire events, meaning that each upcoming year there is a 51% chance of wildfire event occurring.

The greater concern is these fires growing quickly and damaging more acreage. With drought experienced often throughout the region, the weather getting hotter for longer durations, and an abundance of fuel, especially beetle kill pine trees, fires have the potential to occur easily and spread rapidly before they are spotted. Since fires can be human caused, lightning ignited, or the possibility of forest management activities getting out of control, there are numerous ways an accident or random occurrence could ignite a conflagration.

WINTER STORM

PREVIOUS OCCURRENCES

In Natrona County, 304 winter storm, blizzard, and winter weather events have occurred since 1996. There has been one death reported, in the Bighorn Mountains, due to

hypothermia in 2017¹². One injury was reported in 2006, a firefighter who was hit by a sliding car while responding to an accident. Only one event has been reported to NCEI as causing damages. The event, in October 2013, resulted in \$3,000,000 in property damages and is detailed further in notable events.

There have been 65 reported heavy snow events, since 1996, and reported damages include \$19,000 in property damages and some livestock losses. Power outages and closed roads were reported in multiple events.

Extreme cold and wind chill events have been reported to the database since 1996 and there have been 35 events recorded in Natrona County. A record low temperature was reported on December 21, 2022 at the Natrona County Airport and was recorded at -42. This occurrence was accompanied by a wind chill which fell to -61 temperatures.

Other extreme cold event temperatures vary greatly depending on the month of the event, such as the -5 temperature recorded in April 2020 which was classified as an extreme cold event. There have been no injuries, deaths, or damages reported due to an extreme cold or wind chill event in the county. **TABLE 142** highlights severe winter weather events between 2013 and 2023

Table 142 Notable Severe Winter Weather Events

Date	Damages
October 3, 2013	\$3,000,000 property

¹² <https://www.weather.gov/cys/LateSpringSnow>

Date	Damages
	On October 3, 2013, a potent early season winter storm moved into Wyoming and continued through much of Friday, October 4. Snow began in the higher elevations of western Wyoming early Thursday morning. Rain across the lower elevations changed to snow during the afternoon and evening hours of Thursday as colder air moved across Wyoming from west to east. With impressive upper level dynamics and ample moisture, snowfall rates approached two inches an hour at some locations. The wet, heavy snow fell on trees that still had full foliage, bringing many limbs and trees down onto streets and power lines. Natrona County was hardest hit with 14,000 customers without power at the peak of the storm. Several warming shelters were established Friday along the I-25 corridor to help those without heat. The heavy snow also brought many road closures to central Wyoming. In Casper, snowfall of 16.2 inches was the tenth highest storm total since records began in 1937 and held a liquid water content of 2.14 inches. The highest snowfall amounts fell in the higher elevations with over two feet of snow recorded in the higher elevations of the Wind River, Bighorn, and Absaroka ranges, as well as Casper Mountain. The highest amount was at the Reno Hill SNOTEL where 34 inches of snow was recorded. Many lower elevation locations east of the Continental Divide reported 6 to 12 inches of snow. Most areas of Natrona County received over a foot of snow including 16.2 inches at the Casper Airport and up to 22 inches in the foothill areas of Casper Mountain.
March 13, 2021	
	Very heavy snow fell in portions of Natrona County. The highest total reported was 26.3 inches at the Casper, Wyoming airport and was the highest storm total reported since December 1982. Amounts dropped further west with 14 inches reported at Powder River.
April 2, 2023	
	A major snowstorm crippled much of Wyoming from April 3-5, 2023. The combination of significant to record snowfall and strong winds led to blizzard conditions across eastern Sweetwater County, Natrona County, and Johnson County. The official snowfall total for Casper was 37.4" and is now the all-time record snowfall for one single event. Wind gusts of 30 to 50 mph created blizzard conditions and very large snow drifts. In Casper drifts as high as 8 feet were reported. On Casper Mountain 5' of snow was reported and this snow buried many structures on the mountain.

Figure 45 April 2, 2023 snowstorm



LOCATION

Severe winter weather events occur across the entire county.

EXPOSURE AND VULNERABILITY

Lifelines

Severe winds, downed trees, and ice accumulation can create serious impacts on Energy and Communications infrastructure, including power lines and above-ground communication lines. Transportation Lifeline failures, due to loss and interruption of roadway capacity, are a secondary hazard often most associated with severe winter weather.

People

The populations most likely to suffer the negative effects of severe winter weather events are motorists who may be stranded, those participating in outdoor recreation activities, and those with AFN.

AFN populations face isolation and exposure during severe winter weather events and could suffer more secondary effects of the hazard. Power outages can be life threatening

to those dependent on electricity for medical equipment and those sensitive to temperature extremes.

The use of fuel-burning heaters indoors and the potential of poisoning and asphyxiation also poses a significant risk to the population of the county.

Low income and residents living below the poverty line are susceptible to the impacts of severe winter weather. For these community members, heating in the case of extreme cold temperatures can be financially inaccessible. Additionally, residents may not have the option to remain at home during an extreme winter weather event and can place themselves in danger traveling on dangerous road conditions.

Furthermore, those in the community who do not have access to a vehicle and rely on public transportation can be vulnerable to health impacts of extreme cold temperatures as well as the possibility of hazardous road conditions while using public transportation.

Structures

The freezing of structure water lines, and resulting breaks and flooding, is one of the most damaging impacts from severe cold spells. Freezing of power and communication lines can cause them to break, disrupting electricity and communication. Loss of electricity and phone connection would leave certain populations isolated, as residents would be unable to call for assistance. Extreme cold can disrupt or impair communications facilities.

Primary transportation failures, due to loss and interruption of roadway capacity, are a secondary hazard often most associated with severe winter weather. Roads may become impassable due to ice or snow accumulation which create dangerous driving conditions. Availability of county roads to move people and supplies throughout the region is also a concern.

These types of events can significantly impact the transportation system and the availability of public safety services. Of particular concern are roads providing access to isolated areas and to those with access and functional needs (AFN). Prolonged obstruction of major routes can disrupt the shipment of goods and other commerce.

All buildings in the county are exposed to severe winter weather, but structures in poor condition or in particularly vulnerable locations (located on hilltops or exposed open areas) may risk the most damage. Those that are located under or near overhead lines, or near large trees may be vulnerable to falling ice or may be damaged in the event of a tree or limb collapse. The frequency and degree of damage will depend on specific locations.

Natural, Historic, and Cultural Resources

Natural habitats risk major damage and destruction from severe winter weather. Heavy snowfall and high winds can collapse trees. Freezing temperatures can kill crops, vegetation, and animals. Mass die offs of wildlife are possible as snow covers vegetation and freezes as temperatures drop. These events alter the ecosystem and hunting quotas in the following season. Livestock are also vulnerable to severe winter weather without proper shelter.

Local Vulnerability

Negative economic impact from severe winter weather is possible. Damage to property, crops, and livestock can result in costs, both direct and indirect. Direct costs for the value lost and indirect costs for the loss of work that comes from harvest and livestock transport, as well as the overhead that may result during repair or reconstruction of properties.

Short term impacts may occur if roads and businesses must close, affecting transport and commerce which can have a negative effect for an entire region.

TABLE 143 provides additional vulnerability information identified by each local government.

Table 143 Local Government Vulnerability

Local Government	Local Vulnerability
Bar Nunn	Road closures would impact supplies for local businesses. Power outages, coupled with frozen pipes would most impact our residents. Access to livestock for feeding is also a concern.
Casper	Road closures would impact supplies for local businesses. Severe cold would result in school closures and would disproportionately impact the homeless population. Access to livestock for feeding is also a concern.
Evansville	Road Closures affecting transportation, including food and product deliveries to the community.
Mills	Impacts of most concern would be road closures and inability to transport supplies to stores, power outages, no feed for livestock, and no social services being available to underserved communities.
Natrona Co. Fire	Road closures would impact supplies for local businesses. Severe cold would result in school closures and would disproportionately impact the homeless population. Access to livestock for feeding is also a concern.
Casper Mountain Fire	Road Closures affecting ingress/egress on emergency responders.
Unincorporated County	Road closures would impact supplies for local businesses. Power outages, coupled with frozen pipes would most impact our residents. Access to livestock for feeding is also a concern.

FUTURE TRENDS IN DEVELOPMENT

All future development can be affected by severe winter weather events. The county's vulnerability is increasing through time as the population increases. The ability to mitigate impacts lies in consistent enforcement of codes and regulations for new construction.

Public education is critical as new residents move to the area. Many may not have experienced the severity of winter weather events seen in the county and will not know how to be prepared. Educating the population on these hazards and how to minimize risk from events will prove beneficial for the county.

TABLE 144 provides additional information identified by each local government.

Table 144 Local Government Population Trends

Local Government	Local Population Trends
Bar Nunn	No population change has recently occurred, or is expected, which would impact hazard vulnerability.
Casper	Any increases in population will increase the community's collective vulnerability.
Evansville	No population change has recently occurred, or is expected, which would impact hazard vulnerability.
Mills	No population change has recently occurred, or is expected, which would impact hazard vulnerability.
Unincorporated County	Population in the unincorporated areas of the county did not increase, nor are major increases expected in the future. Overall vulnerability has not increased, nor is expected to, due to development.

PROBABILITY OF FUTURE OCCURRENCES

Severe winter weather events are expected to continue in the future. The NOAA Storm Events Database records 304 severe winter weather events from 1996 to 2023, meaning there is a 100% chance of a severe weather event occurring annually.

EARTHQUAKE HAZUS RISK REPORT

ADOPTIONS

NIOBARRA COUNTY ANNEX

COUNTY PROFILE

Niobrara, WY County has a variety of climates ranging from cold and dry during the winter months to hot and humid during the summer months. The average temperature is usually around 39°F in January and 78°F in July. Due to its inland location, there are no major weather patterns that influence the county's climate other than occasional snowstorms during winter months. The area is typically sunny and windy with occasional strong winds especially during spring and early summer months. It is usually quite warm during the day and cool at night throughout the year.

TABLE 145 presents the 2020 population baseline and state projections for future years. Overall the county is forecasted to experience a 5.1% reduction in population by the year 2040. **FIGURE 46** provides an overview map of the county.

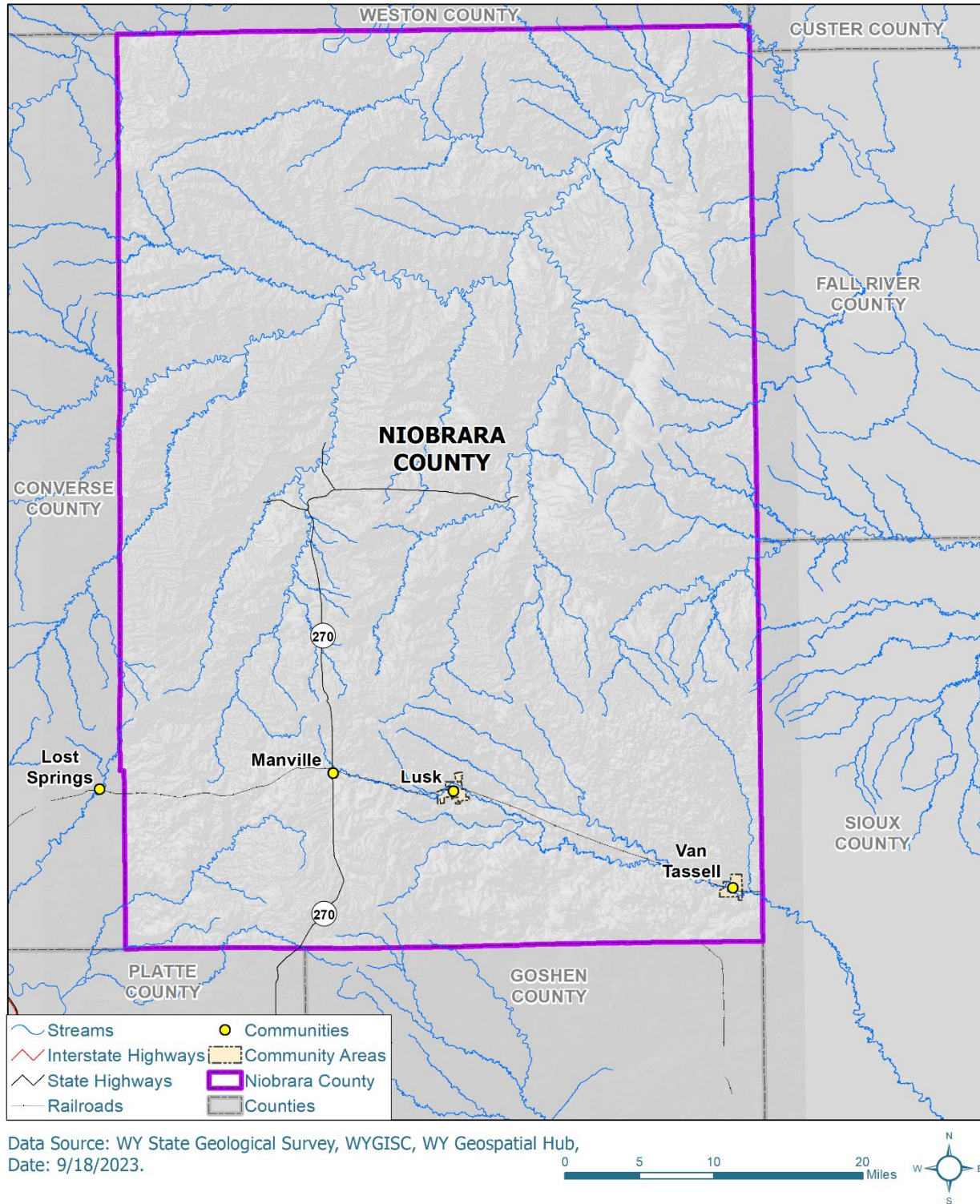
Table 145 Population Forecasts¹³

Jurisdiction	2020	2025	2030	2040
Niobrara County	2,360	2,300	2,260	2,240
Town of Lusk	1,513	1,475	1,449	1,436
Town of Manville	88	86	84	83
Town of Van Tassell	14	14	13	13

¹³ Wyoming Department of Administration & Information: Economic Analysis Division

Figure 46. County Overview

Niobrara County - Location Map



UNDERSERVED COMMUNITIES AND SOCIALLY VULNERABLE POPULATIONS

Disadvantaged communities are often disproportionately impacted by hazards because they are in areas historically underserved and underinvested and reside in areas more prone to natural disasters. The degree to which a community exhibits certain social vulnerability conditions, including high poverty, low percentage of vehicle access, or crowded households, may also affect that community's ability to prepare for, respond to, and recover from disaster events.

Social vulnerability contributes to the impacts on those in the community who experience access and functional needs (AFN) during disasters. AFN are the factors which may limit a person, in an emergency, in their ability to communicate, maintain their health, act independently, access adequate transportation, and acquire necessary services and support. These needs encompass a variety of social and economic factors, which are critical to consider when developing inclusive community plans.

Throughout the planning process, it was important for the county to be cognizant of those communities and populations who may be disproportionately impacted by disaster events. The following pages present overviews of national indexes that assist with the identification of those underserved communities and socially vulnerable populations across Niobrara County.

To inform this plan, it was important that the HMPC understand the locations of the county's socially vulnerable and underserved communities. There are a number of relevant data sets and indexes available as of this plan's writing. To ensure all communities were taken into account, the HMP references three separate indexes to present the broadest view of potential vulnerability across the county's population. **FIGURE 47** presents the national [social vulnerability index](#) (SVI) from the Center for Disease Control's (CDC) Agency for Toxic Substances and Disease Registry (ATSDR). **FIGURE 48** maps disadvantaged communities, as defined by the United State Council on Environmental Quality's [Climate and Economic Justice Screening Tool](#) (CEJST). Lastly, **FIGURE 49** presents the results of [Headwater Economics'](#) analysis of rural capacity. Overall, most indexes show that the county is more vulnerable than other communities across our Nation.

Figure 47 Social Vulnerability Index

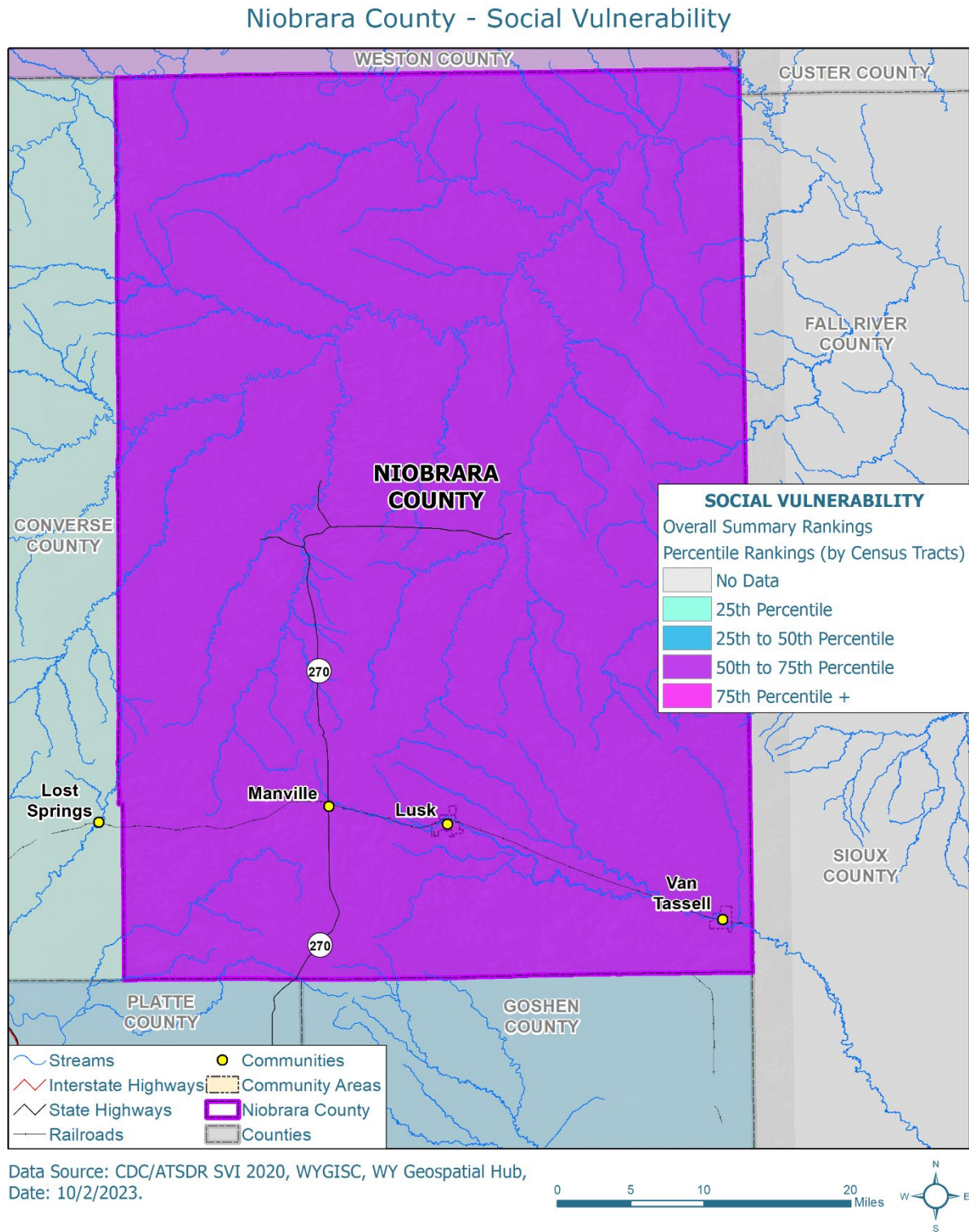
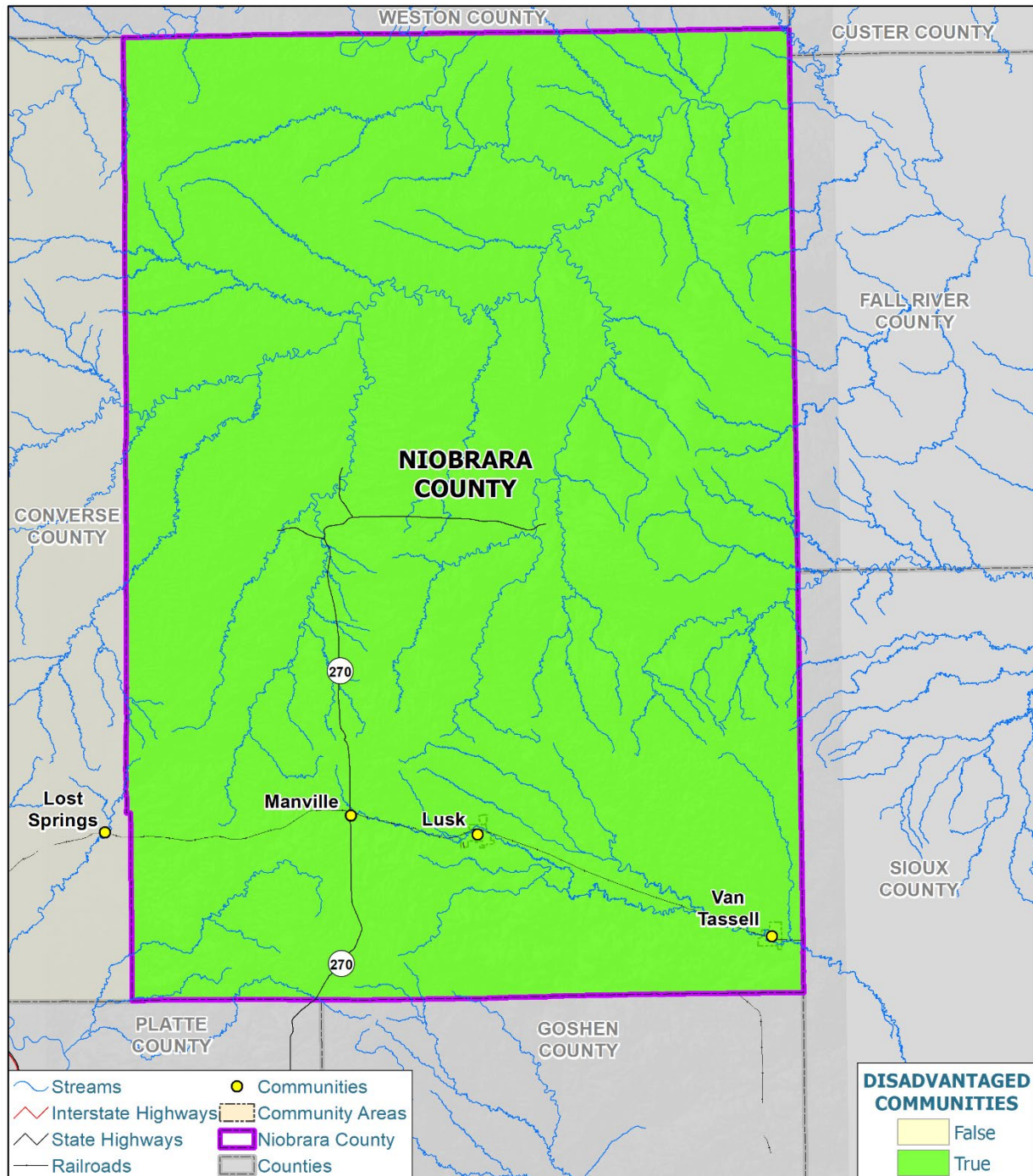


Figure 48 Disadvantaged Communities

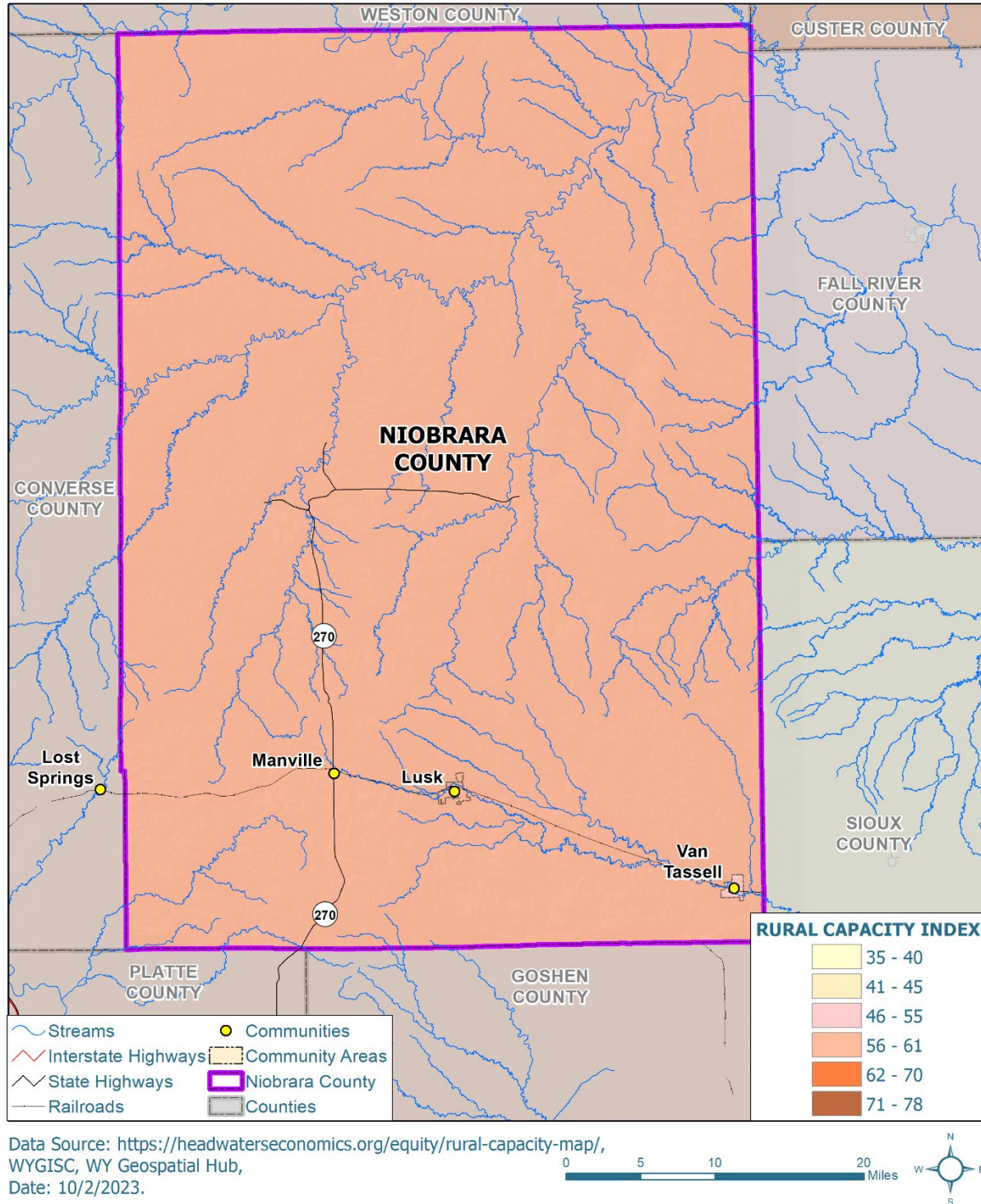
Niobrara County - Disadvantaged Communities



Data Source: CEJEST 11/22/2022 (<https://screeningtool.geoplatform.gov/en/>), WYGISC, WY Geospatial Hub, Date: 10/2/2023.

Figure 49 Rural Capacity Index

Niobrara County - Rural Capacity Index



MITIGATION STRATEGY

2019 MITIGATION ACTIONS

As part of the plan update process, local participating governments reviewed and reported on the status of all mitigation actions (i.e. – projects) identified in the 2019 HMP. **TABLE 146** provides a summary of progress made towards making Niobrara County more resilient to the impacts of hazards.

As important as acknowledging projects that were accomplished, actions in a community that are on-going are often overlooked as examples of positive implementation of the mitigation strategy. On-going projects are those without a timeline and that may not have deliverables that bring closure to a project but rather continued milestones. Examples include education and outreach efforts, maintenance activities, continual work on updating plans and organizational coordination, and constant work to improve processes and infrastructure.

Some 2019 actions did not see any progress made, but a portion of these projects retain community support and are being carried forward in this 2024 HMP (“No Progress – Continue Action”).

Table 146 Past 2019 Mitigation Action Reporting

ID	Lead Jurisdiction	Hazard	Project	Priority	2024 Status
1.1	Lusk	All	Test warning siren. Post information on what the tones mean.	M	On-Going
1.2	Lusk	All	Review and update basic plan for continuity of town government.	L	No Progress - No Longer a Mitigation Priority
1.3	Lusk	Flood	Investigate engineering solutions to flooding of Niobrara Creek in Lusk.	H	No Progress - No Longer a Mitigation Priority
1.4	Lusk	Flood	Encourage property owners along creek to purchase flood insurance. Link to WYDOT site.	M	No Progress - No Longer a Mitigation Priority
1.5	Lusk	Flood	Monitor water levels in creek. Notify low-lying land owners of flood potential.	M	On-Going

ID	Lead Jurisdiction	Hazard	Project	Priority	2024 Status
1.6	Lusk	Hazmat	Develop an evacuation plan for Lusk.	L	On-Going
1.7	Lusk	All	Develop a public information campaign to increase awareness of the different hazards that can impact the County, focused on identified risks, county and community mitigation actions and actions citizens can take to understand and reduce vulnerability	H	No Progress - No Longer a Mitigation Priority
2.1	Manville	All	Test warning siren. Post information on what the tones mean.	M	On-Going
2.2	Manville	All	Use a basic template to plan for continuity of government.	L	No Progress - No Longer a Mitigation Priority
2.3	Manville	Flood	Replace remaining culverts to reduce flooding.	H	Complete
2.4	Manville	Wildland	Print message on July water bill about taking responsibility for	H	No Progress

ID	Lead Jurisdiction	Hazard	Project	Priority	2024 Status
		Fire	reducing fire danger on private property. (Annually)		- Continue Action
2.5	Manville	All	Develop a public information campaign to increase awareness of the different hazards that can impact the County, focused on identified risks, county and community mitigation actions and actions citizens can take to understand and reduce vulnerability	H	No Progress - No Longer a Mitigation Priority
4	Niobrara County	All	Design and conduct an exercise using ICS (power and communications outage)	M	In-Progress
4	Niobrara County	Flood	Construct permanent bridge at Lance Creek to replace temporary seasonal bridge	M	Complete
4	Niobrara County	Flood	Drain and fill road section at Big Muddy Creek Crossing	L	Complete
4.1	Niobrara County	All	Educate residents about need to sign up for Code Red notification system.	H	On-Going
4.1	Niobrara County	Winter Storms	Encourage continued construction of wooden and living snow fences along roadways	M	On-Going

ID	Lead Jurisdiction	Hazard	Project	Priority	2024 Status
4.11	Niobrara County	Flood	Install erosion control on county road at Twenty-mile Creek	M	On-Going
4.12	Niobrara County	Flood	Install erosion control to protect against loss of Cow Creek Road	M	On-Going
4.13	Niobrara County	Hazmat	Work with Union Pacific Railroad to sponsor oil rail transport training	H	No Progress - Continue Action
4.14	Niobrara County	All	Develop a public information campaign to increase awareness of the different hazards that can impact the County, focused on identified risks, county and community mitigation actions and actions citizens can take to understand and reduce vulnerability	H	No Progress - No Longer a Mitigation Priority
4.15	Niobrara County	Drought	Establish standards for sending public notices on water restrictions	H	No Progress - No Longer a Mitigation Priority

ID	Lead Jurisdiction	Hazard	Project	Priority	2024 Status
4.16	Niobrara County	All	Finalize voluntary database of access and functional needs populations for first responders	H	On-Going
4.17	Niobrara County	Lightning	Back up government records in case of lightning strikes	H	On-Going
4.18	Niobrara County	Tornado	Identify possible location for tornado/all weather shelters	H	On-Going
4.19	Niobrara County	HazMat	Ensure Local Emergency Planning Committee remains active in the County	H	On-Going
4.2	Niobrara County	All	Integrate emergency comm systems. Boost WYOLink.	H	On-Going
4.3	Niobrara County	All	Encourage Niobrara Electric to continue to harden power lines and create redundancy.	H	On-Going
4.4	Niobrara County	All	Update 2003 EOP	M	Complete
4.5	Niobrara County	All	Maintain capacity to shelter small numbers for short time.	M	On-Going

ID	Lead Jurisdiction	Hazard	Project	Priority	2024 Status
4.6	Niobrara County	All	First responders and elected officials develop personal disaster plans.	L	No Progress - No Longer a Mitigation Priority
4.7	Niobrara County	All	Coordinate evacuation, transportation, and sheltering with Women's Prison.	L	On-Going
4.8	Niobrara County	All	Use a basic template to plan for continuity of county government.	M	No Progress - No Longer a Mitigation Priority
4.9	Niobrara County	Hazmat	Continue education on response to pipeline incidents (host pipeline company provided training)	M	On-Going
3.1	Van Tassell	All	Maintain small cache of sheltering materials, supplies.	M	On-Going
3.2	Van Tassell	Hazmat	Educate residents on how to respond to hazmat incident with annual mailing	H	On-Going

ID	Lead Jurisdiction	Hazard	Project	Priority	2024 Status
3.3	Van Tassell	All	Develop a public information campaign to increase awareness of the different hazards that can impact the County, focused on identified risks, county and community mitigation actions and actions citizens can take to understand and reduce vulnerability	H	No Progress - No Longer a Mitigation Priority

2024 MITIGATION ACTIONS

TABLE 147 and **TABLE 148** include the full details of all new mitigation actions included in this updated 2024 HMP. It should be noted that for potential funding source(s), reference to a “general fund” includes staff time.

Table 147 New 2024 Mitigation Actions

ID	Action Title	Local Government	Lead Organization	Partner Organization(s)	Primary Hazard Mitigated	Relevant Goal(s)	Action Details / Benefits
Niobrara - 1	Dam Incident Malfunction Planning	Niobrara County	Commissioner Chair	Land owners, local jurisdictions with dam risk	Dam/Levee Incident	1,2,4	Coordinate with all local dam owners to conduct hazard planning for risks specific to each structure.
Lusk - 1	Dam Incident Malfunction Planning	Lusk	Mayor	Land owners, County	Dam/Levee Incident	1,2,4	In coordination with the county, facilitate meetings with all local dam owners to conduct hazard planning for risks specific to each structure.
n/a	n/a	Manville			Dam/Levee Incident		Per the risk assessment, this hazard does not present a known risk
n/a	n/a	Van Tassel			Dam/Levee Incident		Per the risk assessment, this hazard does not present a known risk
Niobrara - 2	Drought Education	Niobrara County	County EM Coordinator	NWS, Local Governments	Drought	7	In coordination with NWS and local governments, obtain and distribute information on water conservation methods and related mitigation actions annually in the Spring to all

ID	Action Title	Local Government	Lead Organization	Partner Organization(s)	Primary Hazard Mitigated	Relevant Goal(s)	Action Details / Benefits
							county residents.
Lusk - 2	Drought Education	Lusk	Mayor	County	Drought	7	In coordination with the County, distribute information on water conservation methods and related mitigation actions annually in the Spring to all residents. Tools to utilize include the town bill, newspaper, and social media.
Man - 1	Drought Education	Manville	Mayor	County	Drought	7	In coordination with the County, distribute information on water conservation methods and related mitigation actions annually in the Spring to all residents. Tools to utilize include local media.
VT - 1	Drought Education	Van Tassel	Mayor	County	Drought	7	In coordination with the County, distribute information on water conservation methods and related mitigation actions annually in the Spring to all residents. Tools to utilize include local media.

ID	Action Title	Local Government	Lead Organization	Partner Organization(s)	Primary Hazard Mitigated	Relevant Goal(s)	Action Details / Benefits
Niobrara - 3	Earthquake Awareness	Niobrara County	County EM Coordinator	WGS, Local Governments	Earthquake	1,4,6,7	In coordination with WGS and local governments, obtain and distribute information on earthquake mitigation methods and related mitigation actions annually in the Fall to all county residents.
Lusk - 3	Earthquake Awareness	Lusk	Mayor	County	Earthquake	7	In coordination with the County, distribute information on earthquake mitigation methods and related mitigation actions annually in the Fall to all residents. Tools to utilize include the town bill, newspaper, and social media.
Man - 2	Earthquake Awareness	Manville	Mayor	County	Earthquake	7	In coordination with the County, distribute information on earthquake mitigation methods and related mitigation actions annually in the Fall to all residents. Tools to utilize include local media.
VT - 2	Earthquake	Van Tassel	Mayor	County	Earthquake	7	In coordination with the County, distribute information on

ID	Action Title	Local Government	Lead Organization	Partner Organization(s)	Primary Hazard Mitigated	Relevant Goal(s)	Action Details / Benefits
	Awareness						earthquake mitigation methods and related mitigation actions annually in the Fall to all residents. Tools to utilize include local media.
Niobrara - 4	Expansive Soils Site Assessments	Niobrara County	Road & Bridge Foreman		Expansive Soils	2,3,6,7	Conduct site specific assessments of individual county structures and infrastructure that is at risk from expansive soils.
n/a	n/a	Lusk			Expansive Soils		Per the risk assessment, this hazard does not present a known risk
n/a	n/a	Manville			Expansive Soils		Per the risk assessment, this hazard does not present a known risk
n/a	n/a	Van Tassel			Expansive Soils		Per the risk assessment, this hazard does not present a known risk
Niobrara - 5	Flood Education	Niobrara County	County EM Coordinator	NWS, WOHS, Local Governments	Flood	1,2,4,5,6,7	Create an annual flood education campaign to be shared with all local governments and residents in the Spring, to educate

ID	Action Title	Local Government	Lead Organization	Partner Organization(s)	Primary Hazard Mitigated	Relevant Goal(s)	Action Details / Benefits
							individuals on the flood risk and benefits of flood insurance.
Lusk - 4	Flood Education	Lusk	Mayor	County	Flood	1,2,4,5,6,7	Perform an annual flood education campaign to be shared with all residents in known floodplains in the Spring, to educate individuals on the flood risk and benefits of flood insurance. Tools to utilize include the town bill, newspaper, and social media.
Man - 3	Flood Education	Manville	Mayor	County	Flood	1,2,4,5,6,7	Perform an annual flood education campaign to be shared with all residents in known floodplains in the Spring, to educate individuals on the flood risk and benefits of flood insurance. Tools to utilize include local media.
VT - 3	Flood Education	Van Tassel	Mayor	County	Flood	1,2,4,5,6,7	Perform an annual flood education campaign to be shared with all residents in known floodplains in the Spring, to educate individuals on the flood

ID	Action Title	Local Government	Lead Organization	Partner Organization(s)	Primary Hazard Mitigated	Relevant Goal(s)	Action Details / Benefits
							risk and benefits of flood insurance. Tools to utilize include local media.
Niobrara - 6	Landslide Mitigation	Niobrara County	Commissioner Chair		Landslide	2,5,6,7	Assess known landslide areas to prioritize specific locations where structural mitigation actions will have the greatest benefit to the community.
n/a	n/a	Lusk			Landslide		Per the risk assessment, this hazard does not present a known risk
n/a	n/a	Manville			Landslide		Per the risk assessment, this hazard does not present a known risk
n/a	n/a	Van Tassel			Landslide		Per the risk assessment, this hazard does not present a known risk
Niobrara - 7	Land Subsidence Mitigation	Niobrara County	Commissioner Chair		Mine and Land Subsidence	2,3,5,7	Assess known subsidence areas to prioritize specific locations where structural mitigation actions will have the greatest

ID	Action Title	Local Government	Lead Organization	Partner Organization(s)	Primary Hazard Mitigated	Relevant Goal(s)	Action Details / Benefits
							benefit to the community.
n/a	n/a	Lusk			Mine and Land Subsidence		Per the risk assessment, this hazard does not present a known risk
n/a	n/a	Manville			Mine and Land Subsidence		Per the risk assessment, this hazard does not present a known risk
n/a	n/a	Van Tassel			Mine and Land Subsidence		Per the risk assessment, this hazard does not present a known risk
Niobrara - 8	Education on Severe Weather	Niobrara County	County EM Coordinator	NWS, Local Governments	Severe Weather	1,2,3,4,5,7	In coordination with NWS, obtain and distribute information on severe weather mitigation methods and related mitigation actions annually in the Summer to all county residents. Additionally inform residents of the Code Red system. Tools to utilize include the town bill, newspaper, and social media.
Lusk - 5	Education on Severe	Lusk	Mayor	County	Severe	1,2,3,4,5,	In coordination with the County, distribute information on severe

ID	Action Title	Local Government	Lead Organization	Partner Organization(s)	Primary Hazard Mitigated	Relevant Goal(s)	Action Details / Benefits
	Weather				Weather	7	weather mitigation methods and related mitigation actions annually in the Summer to all residents. Tools to utilize include the town bill, newspaper, and social media.
Man - 4	Education on Severe Weather	Manville	Mayor	County	Severe Weather	1,2,3,4,5,7	In coordination with the County, distribute information on severe weather mitigation methods and related mitigation actions annually in the Summer to all residents. Tools to utilize include local media.
VT - 4	Education on Severe Weather	Van Tassel	Mayor	County	Severe Weather	1,2,3,4,5,7	In coordination with the County, distribute information on severe weather mitigation methods and related mitigation actions annually in the Summer to all residents. Tools to utilize include local media.
Niobrara - 9	Wildfire Prevention	Niobrara County	Fire Dept.	NWS, Fire Dept., Local Governments	Wildfire	1,2,3,4,5,6,7	In coordination with NWS and the fire department, obtain and distribute information on wildfire mitigation methods and related

ID	Action Title	Local Government	Lead Organization	Partner Organization(s)	Primary Hazard Mitigated	Relevant Goal(s)	Action Details / Benefits
							mitigation actions annually in the Spring to all local governments and county residents. Additionally inform residents of the red flag warnings and local fire bans, encourage the trimming of grasses whenever possible, and encourage personal evacuation planning.
Lusk - 6	Wildfire Prevention	Lusk	Mayor	County	Wildfire	7	In coordination with the County, distribute information on wildfire mitigation methods and related mitigation actions annually in the Spring to all residents. Tools to utilize include the town bill, newspaper, and social media.
Man - 5	Wildfire Prevention	Manville	Mayor	County	Wildfire	7	In coordination with the County, distribute information on wildfire mitigation methods and related mitigation actions annually in the Spring to all residents. Tools to utilize include the town bill, newspaper, and social media.

ID	Action Title	Local Government	Lead Organization	Partner Organization(s)	Primary Hazard Mitigated	Relevant Goal(s)	Action Details / Benefits
VT - 5	Wildfire Prevention	Van Tassel	Mayor	County	Wildfire	7	In coordination with the County, distribute information on wildfire mitigation methods and related mitigation actions annually in the Spring to all residents. Tools to utilize include the town bill, newspaper, and social media.
Niobrara - 10	Winter Storm Education	Niobrara County	County EM Coordinator	NWS, Local Governments	Winter Storm	1,2,3,4,5, 6,7	In coordination with NWS and local governments, obtain and distribute information on winter storm mitigation methods and related mitigation actions annually in the Fall to all county residents. Additionally inform residents of the Code Red system.
Lusk - 7	Winter Storm Education	Lusk	Mayor	County	Winter Storm	1,2,3,4,5, 6,7	In coordination with the County, distribute information on winter storm mitigation methods and related mitigation actions annually in the Fall to all residents. Tools to utilize include the town bill, newspaper, and social media.

ID	Action Title	Local Government	Lead Organization	Partner Organization(s)	Primary Hazard Mitigated	Relevant Goal(s)	Action Details / Benefits
Man - 6	Winter Storm Education	Manville	Mayor	County	Winter Storm	1,2,3,4,5,6,7	In coordination with the County, distribute information on winter storm mitigation methods and related mitigation actions annually in the Fall to all residents. Tools to utilize include local media.
VT - 6	Winter Storm Education	Van Tassel	Mayor	County	Winter Storm	1,2,3,4,5,6,7	In coordination with the County, distribute information on winter storm mitigation methods and related mitigation actions annually in the Fall to all residents. Tools to utilize include local media.

Table 148 New 2024 Mitigation Actions – Additional Details

ID	Priority	Estimated Timeframe for Completion	Potential Funding Source(s)	Reduces Risk to Existing Structures / Infrastructure?	Limits Risk to New Development / Redevelopment?	Benefits Underserved Communities / Socially Vulnerable Populations?	Mitigation Action Type
Niobrara - 1	Medium	2028	County General Fund, FEMA BRIC	Yes	Yes	Yes	Local Plans & Regulations
Lusk - 1	Medium	2028	Town General Fund, FEMA BRIC	Yes	Yes	Yes	Local Plans & Regulations
n/a							
n/a							
Niobrara - 2	High	2028	County General Fund	No	Yes	Yes	Education & Awareness Programs
Lusk - 2	High	2028	Town General	No	Yes	Yes	Education & Awareness

ID	Priority	Estimated Timeframe for Completion	Potential Funding Source(s)	Reduces Risk to Existing Structures / Infrastructure?	Limits Risk to New Development / Redevelopment?	Benefits Underserved Communities / Socially Vulnerable Populations?	Mitigation Action Type
			Fund				Programs
Man - 1	High	2028	Town General Fund	No	Yes	Yes	Education & Awareness Programs
VT - 1	High	2028	Town General Fund	No	Yes	Yes	Education & Awareness Programs
Niobrara - 3	Low	2028	County General Fund	Yes	Yes	Yes	Education & Awareness Programs
Lusk - 3	Low	2028	Town General Fund	Yes	Yes	Yes	Education & Awareness Programs
Man - 2	Low	2028	Town General Fund	Yes	Yes	Yes	Education & Awareness Programs
VT - 2	Low	2028	Town	Yes	Yes	Yes	Education & Awareness

ID	Priority	Estimated Timeframe for Completion	Potential Funding Source(s)	Reduces Risk to Existing Structures / Infrastructure?	Limits Risk to New Development / Redevelopment?	Benefits Underserved Communities / Socially Vulnerable Populations?	Mitigation Action Type
			General Fund				Programs
Niobrara - 4	Low	2028	County General Fund, FEMA BRIC	Yes	Yes	Yes	Local Plans & Regulations
n/a							
n/a							
n/a							
Niobrara - 5	Low	2028	County General Fund	Yes	Yes	Yes	Education & Awareness Programs
Lusk - 4	Low	2028	Town General Fund	Yes	Yes	Yes	Education & Awareness Programs

ID	Priority	Estimated Timeframe for Completion	Potential Funding Source(s)	Reduces Risk to Existing Structures / Infrastructure?	Limits Risk to New Development / Redevelopment?	Benefits Underserved Communities / Socially Vulnerable Populations?	Mitigation Action Type
Man - 3	Low	2028	Town General Fund	Yes	Yes	Yes	Education & Awareness Programs
VT - 3	Low	2028	Town General Fund	Yes	Yes	Yes	Education & Awareness Programs
Niobrara - 6	Low	2028	County General Fund, FEMA BRIC	Yes	Yes	Yes	Local Plans & Regulations
n/a							
n/a							
n/a							
Niobrara - 7	Low	2028	County General Fund,	Yes	Yes	Yes	Local Plans & Regulations

ID	Priority	Estimated Timeframe for Completion	Potential Funding Source(s)	Reduces Risk to Existing Structures / Infrastructure?	Limits Risk to New Development / Redevelopment?	Benefits Underserved Communities / Socially Vulnerable Populations?	Mitigation Action Type
			FEMA BRIC				
n/a							
n/a							
n/a							
Niobrara - 8	High	2028	County General Fund	Yes	Yes	Yes	Education & Awareness Programs
Lusk - 5	High	2028	Town General Fund	Yes	Yes	Yes	Education & Awareness Programs
Man - 4	High	2028	Town General Fund	Yes	Yes	Yes	Education & Awareness Programs
VT - 4	High	2028	Town General	Yes	Yes	Yes	Education & Awareness Programs

ID	Priority	Estimated Timeframe for Completion	Potential Funding Source(s)	Reduces Risk to Existing Structures / Infrastructure?	Limits Risk to New Development / Redevelopment?	Benefits Underserved Communities / Socially Vulnerable Populations?	Mitigation Action Type
			Fund				
Niobrara - 9	High	2028	County General Fund	Yes	Yes	Yes	Education & Awareness Programs
Lusk - 6	High	2028	Town General Fund	Yes	Yes	Yes	Education & Awareness Programs
Man - 5	High	2028	Town General Fund	Yes	Yes	Yes	Education & Awareness Programs
VT - 5	High	2028	Town General Fund	Yes	Yes	Yes	Education & Awareness Programs
Niobrara - 10	High	2028	County General Fund	Yes	Yes	Yes	Education & Awareness Programs
Lusk - 7	High	2028	Town	Yes	Yes	Yes	Education & Awareness

ID	Priority	Estimated Timeframe for Completion	Potential Funding Source(s)	Reduces Risk to Existing Structures / Infrastructure?	Limits Risk to New Development / Redevelopment?	Benefits Underserved Communities / Socially Vulnerable Populations?	Mitigation Action Type
			General Fund				Programs
Man - 6	High	2028	Town General Fund	Yes	Yes	Yes	Education & Awareness Programs
VT - 6	High	2028	Town General Fund	Yes	Yes	Yes	Education & Awareness Programs

MITIGATION CAPABILITIES

Planning and regulatory capabilities are powerful tools for implementing hazard mitigation. The county and local governments currently utilize or have implemented some of these capabilities shown in **TABLE 149**. The county also supports local governments with some of these available capabilities.

Local governments are encouraged to utilize this assessment to identify those capabilities that they want to expand and improve upon, to enhance implementation efforts towards the county's mitigation strategy. The ability to do so is dictated by each local government's elected leadership, management, and available funding and staffing. It is also noted that grant funding opportunities are available to improve these capabilities. It should be noted that some of the new mitigation actions are also focused on enhancing these mitigation capabilities.

Table 149 Planning & Regulatory Capabilities

Mitigation Capability	Niobrara County	Town of Lusk	Town of Manville	Town of Van Tassell
Comprehensive, Master, or General Plan	Yes	No	No	No
Capital Improvement Program or Plan (CIP)	Yes	No	No	No
Floodplain Management Plan	Yes	No	No	No
Stormwater Program / Plan	Yes	No	No	No
Community Wildfire Protection Plan (CWPP)	No	No	No	No
Erosion / Sediment Control Program	Yes	No	No	No
Economic Development Plan	Yes	No	No	No
Other Plans:	N/A	N/A	N/A	N/A
Building Codes (Year)	No	No	No	No

Mitigation Capability	Niobrara County	Town of Lusk	Town of Manville	Town of Van Tassell
Building Code Effectiveness Grading Schedule (BCEGS) Rating	Unknown	Unknown	Unknown	Unknown
Site Plan Review Requirements	No	No	No	No
Other Codes, Permitting, or Inspections:	N/A	N/A	N/A	N/A
Zoning Ordinance (Land Use)	Yes	No	No	No
Subdivision Ordinance	No	No	No	No
National Flood Insurance Program (NFIP) Participant	No	Yes	No	No
Flood Insurance Study / Flood Insurance Rate Map / DFIRM	No	Yes	No	No
Floodplain Ordinance	No	Yes	No	No
Elevation Certificates for Floodplain Development	No	No	No	No
Community Rating System (CRS) Participant	No	No	No	No
Open Space / Conservation Program	Yes	No	No	No
Growth Management Ordinance	No	No	No	No
Stormwater Ordinance	No	No	No	No
Other Hazard Ordinance (steep slope, wildfire, snow loads, etc.)	No	No	No	No

Mitigation Capability	Niobrara County	Town of Lusk	Town of Manville	Town of Van Tassell
Other Land Use Planning and Ordinances:	N/A	N/A	N/A	N/A

Administrative and technical capabilities include staff, working groups, and technology which are vital for a community to be able to implement hazard mitigation. The county and local governments currently utilize or have implemented some of these capabilities shown in **TABLE 150**.

Table 150 Administrative & Technical Capabilities

Mitigation Capability	Niobrara County	Town of Lusk	Town of Manville	Town of Van Tassell
Planning Commission	Yes	No	No	No
Mitigation Planning Committee	Yes	No	No	No
Maintenance Programs (tree trimming, clearing drainage, etc.)	Yes	No	No	No
Emergency Manager	Yes	County	County	County
Building Official	No	No	No	No
Floodplain Administrator	No	Yes	No	No
Community Planner	No	No	No	No
Transportation Planner	No	No	No	No
Civil Engineer	No	No	No	No
GIS Capability	Yes	No	No	No
Resiliency Planner	No	No	No	No

Mitigation Capability	Niobrara County	Town of Lusk	Town of Manville	Town of Van Tassell
Other Related Staff:	N/A	N/A	N/A	N/A
Warning Systems / Services (flood)	Yes	No	No	No
Warning Systems / Services (other / multi-hazard)	Yes	No	No	No
Grant Writing / Management	No	No	No	No
Other Technical:	N/A	N/A	N/A	N/A

The ability of a community to implement a comprehensive mitigation strategy is largely dependent on available funding. The county and local governments currently utilize or have implemented some of these capabilities shown in **TABLE 151**.

Table 151 Financial Capabilities

Mitigation Capability	Niobrara County	Town of Lusk	Town of Manville	Town of Van Tassell
Levy for Specific Purposes with Voter Approval	Yes	No	No	No
Utilities Fees	Yes	No	No	No
System Development / Impact Development Fee	No	No	No	No
General Obligation Bonds to Incur Debt	Yes	No	No	No
Special Tax Bonds to Incur Debt	Yes	No	No	No
Withheld Spending in Hazard-Prone Areas	No	No	No	No

Mitigation Capability	Niobrara County	Town of Lusk	Town of Manville	Town of Van Tassell
Open Space / Conservation Fund	No	No	No	No
Stormwater Utility Fees	No	No	No	No
Capital Improvement Project Funding	Yes	No	No	No
Community Development Block Grants (CDBG)	Yes	No	No	No
Other Funding:	N/A	N/A	N/A	N/A

Education and outreach are important capabilities that allow a community to continue the conversation with their public regarding hazard risk and opportunities to mitigate. The county and local governments currently utilize their local emergency planning committee (LEPC) as shown in **TABLE 152**.

Table 152 Education & Outreach Capabilities

Mitigation Capability	Niobrara County	Town of Lusk	Town of Manville	Town of Van Tassell
Public Hazard Education / Outreach Program	No	No	No	No
Local Citizen Groups that Communicate Hazard Risks	LEPC	LEPC	LEPC	LEPC
Firewise	No	No	No	No
StormReady	No	No	No	No
Other Programs or Organizations:	N/A	N/A	N/A	N/A

TABLE 153 lists those specific capabilities that each local government will work towards expanding over the next five years.

Table 153 Primary Capabilities to Expand

Local Government	Capability
All	All local government are focused on collectively developing a Community Wildfire Protection Plan (CWPP).

COMPLIANCE WITH FLOODPLAIN REQUIREMENTS

The Town of Lusk participates in the NFIP and has adopted NFIP minimum floodplain management criteria.

TABLE 154 includes these NFIP details, as well as the current policy coverage and claims paid. It should be noted that the county, Town of Manville, and Town of Van Tassell are currently not participating. There are no repetitive or severe repetitive loss properties within the county.

Table 154 NFIP Summary

Jurisdiction	Date of Entry	Initial FIRM ID	Current FIRM	Policies in Force	Coverage	Claims Paid	Value Claims Paid
Lusk	3/18/1986	3/18/1986	3/18/1986 – all Zone A, C, and X	1	\$175,000	-	-

Maintaining compliance under the NFIP is an important component of flood risk reduction. The Town of Lusk will continue to comply with all NFIP requirements which is monitored by FEMA regional staff, including enforcing all locally adopted floodplain management regulations concerning existing structure improvements and new construction. The town is currently in good standing with the provisions of the NFIP.

Adopting floodplain management rules is only effective if the rules are followed and enforced. Implementation and enforcement of local floodplain regulations (i.e. – “compliance”) is achieved through the following:

- Continuing to participate in FIRM updates and adopt floodplain maps when created / updated
- Implementing, maintaining, and updating floodplain ordinances
- Continued designation of a local floodplain manager whose responsibilities include reviewing floodplain development permits to ensure compliance with local floodplain management ordinances and rules

- Suggest improvements to the enforcement of, and compliance with, regulations and programs
- Promote and educate the public on the benefits of flood insurance

After a flood event, or any event that may cause loss of a structure such as a fire or tornado, it is the role of the floodplain administrator to review and assess damaged structures located within the Special Flood Hazard Area (SFHA). "Substantial damage" occurs when the cost of restoring a structure exceeds 50 percent of its market value before damage occurred. "Substantial improvement" occurs when the cost of improving a structure exceeds 50 percent of its market value before the start of construction. Property owners are advised that structures experiencing substantial damage, or undergoing substantial improvements, must go through the floodplain application and permit process. Additionally, these structures must be upgraded during the repair or reconstruction process to meet the minimum building standards stipulated in the regulations.

If it is determined substantial damage / improvement has occurred, those structures must be brought up to current floodplain management standards. This ensures compliance with floodplain management measures and contributes to the overall safety and resilience of the affected structures.

NFIP compliance is implemented through the following designations:

- Town of Lusk: The Town Building Inspector has been appointed the Floodplain Administrator to administer and implement the provisions of the community floodplain ordinance and other appropriate sections of 44 CFR pertaining to floodplain management.

Also, to be considered are the flood mitigation actions contained in this HMP that support the ongoing efforts by participating communities to minimize the risk and vulnerability to the flood hazard.

PLAN MONITORING AND MAINTENANCE

Niobrara County and the HMPC agreed upon these HMP maintenance procedures. It was determined that the emergency manager will serve as the primary point of contact for these tasks. This position will coordinate all local efforts to monitor, evaluate, and update the HMP. Each participating local government will be responsible for implementing their specific mitigation actions and reporting on the status of these actions to the emergency manager.

Throughout the year, the emergency manager will monitor hazard events that may require the HMPC to revisit sections of the HMP. Reasons for this may include but are not limited to: disaster events (affecting the county or other communities across the nation); changes in hazard risk or vulnerability due to population change, development, and/or climate change; changes in available funding resources; updated hazard studies or information; changes in governmental organizational structure; or public input / concerns.

Events that do not necessitate a HMP update at that time will be tracked by the emergency manager for integration into the five-year update.

Niobrara County Emergency Management will coordinate the on-going yearly maintenance for the HMP to include an annual progress report and action monitoring. This report will be compiled and shared at public meetings through the Local Emergency Planning Committee (LEPC). Other participating local governments will be asked to report their action statuses yearly to be included in the report.

An evaluation of the HMP's effectiveness will be directly measured from these annual progress reports.

CONTINUED PUBLIC ENGAGEMENT

Continuing public engagement over the HMP's next five-year lifespan is paramount to retaining community momentum as it relates to implementing the mitigation strategy. It is also important to use this opportunity to identify additional ways that the county's underserved communities and populations can be best represented by the HMP (detailed in the **UNDERSERVED COMMUNITIES** section). **TABLE 155** identifies these planned public engagement efforts for each local government.

Table 155 Planned Continued Public Engagement Efforts

Local Government	Engagement Effort(s)
Niobrara County	The HMP will be reviewed annually in the Fall at LEPC meetings. It will be uploaded to the county website for public access.
Town of Lusk	The HMP will be reviewed annually in the Fall at LEPC meetings. It will be uploaded to the county website for public access.
Town of Manville	The HMP will be reviewed annually in the Fall at LEPC meetings. It will be uploaded to the county website for public access.
Town of Van Tassell	The HMP will be reviewed annually in the Fall at LEPC meetings. It will be uploaded to the county website for public access.

CHANGES IN COMMUNITY PRIORITIES

Communities are continually evolving over the HMP's five-year lifespan. For some, this can lead to changes in local government priorities, as it relates to hazard mitigation. Factors potentially influencing these priorities can include but are not limited to: recent disaster events; changing local resources, needs, or capabilities; new state or federal policies and funding resources; new hazard impacts identified by the updated risk assessment; or

changes in growth and development. At the same time, other communities may have experienced no major changes that would influence the updated HMP. **TABLE 156** presents how this HMP was revised due to these potential changes in each local government.

Table 156 Changes in Community Priorities

Local Government	Changes Since Last HMP
Niobrara County	Changing priorities were dictated by the updated risk assessment and identified vulnerabilities. There have been no major changes to community priorities relating to hazards and related mitigation since the previous plan.
Town of Lusk	Changing priorities were dictated by the updated risk assessment and identified vulnerabilities. There have been no major changes to community priorities relating to hazards and related mitigation since the previous plan.
Town of Manville	Changing priorities were dictated by the updated risk assessment and identified vulnerabilities. There have been no major changes to community priorities relating to hazards and related mitigation since the previous plan.
Town of Van Tassell	Changing priorities were dictated by the updated risk assessment and identified vulnerabilities. There have been no major changes to community priorities relating to hazards and related mitigation since the previous plan.

PLANNING PROCESS

PLANNING INTEGRATION

Integration of the HMP into other planning mechanisms is vital for the overall implementation of the mitigation strategy. This also benefits a community by ensuring that there are no strategic conflicts across planning documents. **TABLE 157** documents that there were no opportunities for integration of the 2019 HMP into other planning efforts.

Table 157 Integration of the 2019 HMP

Local Government	Plan Integration
Niobrara County	The 2019 plan was not integrated into any other plans, as no other relevant plans or hazard mitigation efforts were implemented in this time span.
Town of Lusk	The 2019 plan was not integrated into any other plans, as no other relevant plans or hazard mitigation efforts were implemented in this time span.
Town of Manville	The 2019 plan was not integrated into any other plans, as no other relevant plans or hazard mitigation efforts were implemented in this time span.
Town of Van Tassell	The 2019 plan was not integrated into any other plans, as no other relevant plans or hazard mitigation efforts were implemented in this time span.

TABLE 158 details each local government's planned integration efforts for the 2024 HMP.

Table 158 Integration of the 2024 HMP

Local Government	Plan Integration
Niobrara County	The information from this HMP will be considered and integrated into future countywide CWPP planning efforts as appropriate. Additionally the HMP will inform future THIRAs.
Town of Lusk	The information from this HMP will be considered and integrated into future countywide CWPP planning efforts as appropriate.
Town of Manville	The information from this HMP will be considered and integrated into future countywide CWPP planning efforts as appropriate.

Local Government	Plan Integration
Town of Van Tassell	The information from this HMP will be considered and integrated into future countywide CWPP planning efforts as appropriate.

INCORPORATION OF EXISTING PLANS & INFORMATION

In addition to the data provided by stakeholders mentioned previously, all HMP-relevant existing plans, studies, reports, and technical information were reviewed during the update process. **TABLE 159** provides an overview of how each of these resources were incorporated into the HMP.

Table 159 Existing Resource Incorporation

Local Government	Plan Integration
Wyoming State HMP (2021)	Informed the mitigation strategy and risk assessment
National Oceanic and Atmospheric Administration (NOAA) National Centers for Environmental Information (2023)	Informed the risk assessment
NOAA National Weather Service (NWS) Storm Prediction Center	Informed the risk assessment
Commodity Flow Study (2019)	Informed the risk assessment

HAZARD IDENTIFICATION AND RISK ASSESSMENT

A qualitative risk ranking was performed by each participating local government for the hazards profiled in this plan. This risk ranking assessed the probability of each hazard's occurrence, as well as its likely impact on the people, property / environment, and economy of the planning area. The responses were collected utilizing a four-category qualitative scale. For probability of the hazard this included "unlikely (1)" "possible (2)", "probable (3)", and "likely (4)". For the impacts of the hazard to the three community sectors, the scale included "minor (1)", "limited (2)", "critical (3)", and "catastrophic (4)". The responses were then calculated into a quantitative range by combining the impact scores and multiplying by the probability score, which correlates with the "high," "moderate," and "low" risk rankings. Hazards that do not present a known risk to a local

government and community are noted as not applicable (n/a). **TABLE 160** presents each local government's hazard risk ranking.

Table 160 Local Government Hazard Risk Rankings

Hazard	Niobrara County	Lusk	Manville	Van Tassel
Dam/Levee Incident	Low	Low	n/a	n/a
Drought	High	High	High	High
Earthquake	Low	Low	Low	Low
Expansive Soils	Low	n/a	n/a	n/a
Flood	Low	Low	Low	Low
Landslide / Rockfall / Debris Flow	Low	n/a	n/a	n/a
Mine and Land Subsidence	Low	n/a	n/a	n/a
Severe Weather	High	High	High	High
Severe Winter Weather	High	High	High	High
Wildfire	High	High	High	High

LIFELINES

FEMA's *Hazus Inventory National Database* was utilized for all Lifeline analysis. A baseline of this data is presented in **TABLE 161** and mapped in **Figure 50**.

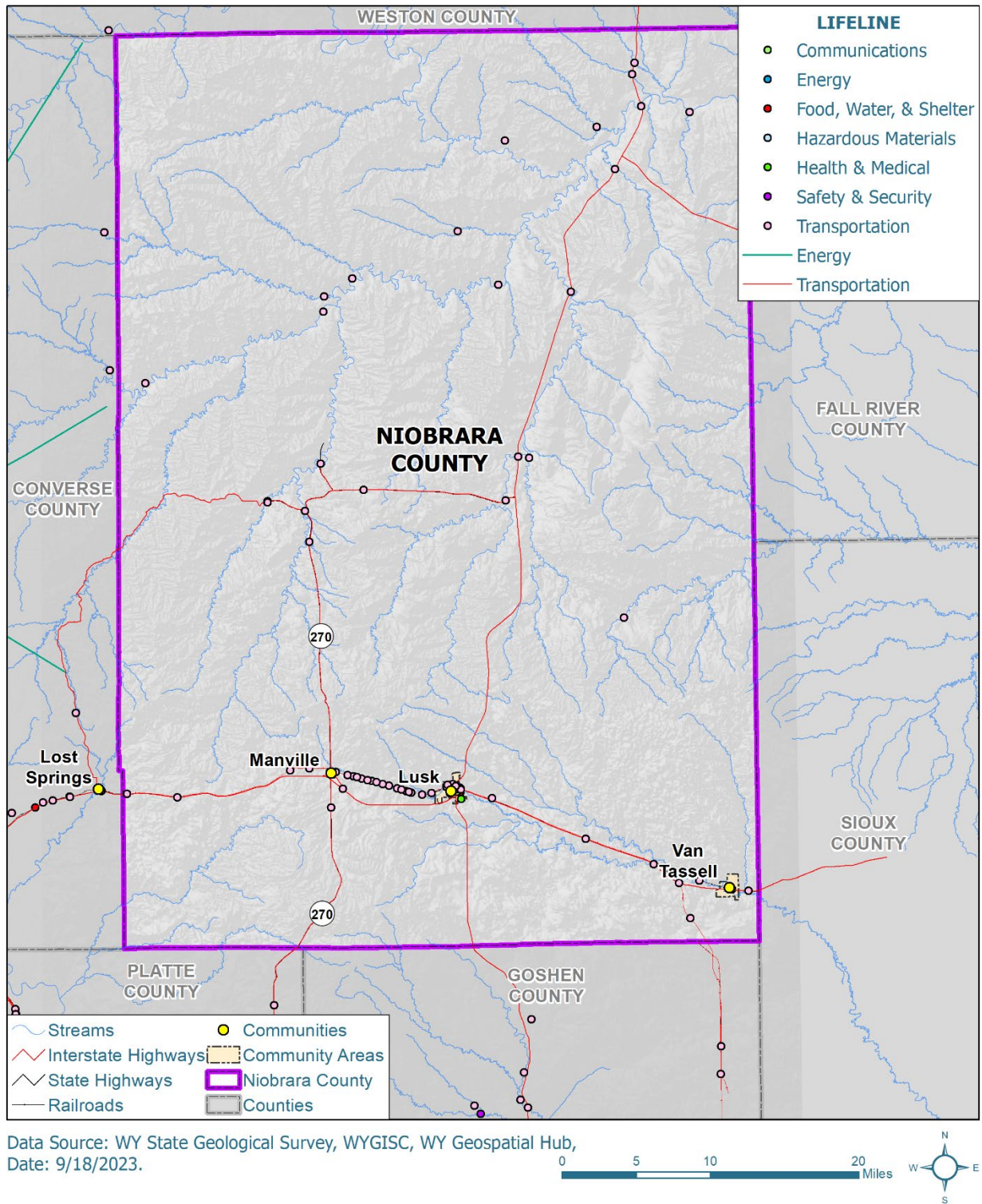
Table 161 Lifelines Inventory

	Lusk	Manville	Van Tassel	Unincorporated	Total
Communications	-	-	-	-	0
Energy	-	-	-	-	0
Energy (Miles)	-	-	-	-	0

	Lusk	Manville	Van Tassell	Unincorporated	Total
Food, Hydration, & Shelter	3	-	-	1	4
Health & Medical	1	-	-	-	1
Safety & Security	4	-	1	-	5
Transportation	4	-	-	61	65
Transportation (Miles)	3.6	1.5	1.3	228.9	235.3

Figure 50 Lifelines

Niobrara County - Lifelines



BUILDING INVENTORY

The US Army Corps of Engineers *National Structure Inventory* was utilized for all structure assessments. A baseline of this data is presented in **TABLE 162**.

Table 162 Structures Inventory

	Total Structure Count	Total Improved Structure Count	Total Structure Value	Estimated Content Value
Lusk	898	894	\$239,667,753	\$412,661,438
Commercial	132	129	\$93,368,868	\$177,637,389
Industrial	21	21	\$18,003,480	\$54,728,906
Public	17	17	\$25,877,939	\$52,273,311
Residential	728	727	\$102,417,465	\$128,021,831
Manville	91	91	\$20,158,333	\$30,629,314
Commercial	2	2	\$2,340,592	\$4,681,184
Industrial	2	2	\$1,528,538	\$3,821,345
Public	1	1	\$2,353,708	\$4,707,416
Residential	86	86	\$13,935,495	\$17,419,369
Van Tassell	20	20	\$3,040,469	\$3,800,586
Residential	20	20	\$3,040,469	\$3,800,586
Unincorporated	1,297	1,276	\$249,162,763	\$393,499,310
Commercial	86	82	\$57,466,426	\$117,055,729
Industrial	16	15	\$17,774,584	\$55,904,719
Public	6	6	\$4,182,227	\$8,364,453
Residential	1,189	1,173	\$169,739,527	\$212,174,409

	Total Structure Count	Total Improved Structure Count	Total Structure Value	Estimated Content Value
Total	2,306	2,281	\$512,029,317.84	\$840,590,647.76

DAM / LEVEE INCIDENT

There are no significant or high hazard dams located in Niobrara County. The County Emergency Operations Plan (EOP) identifies three potentially significant dams: Duel Reservoir on Cow Creek, Field Reservoir on Cottonwood Draw, and Pfister No. 2 Reservoir on Oat Creek.

PREVIOUS OCCURRENCES

On August 10, 1955 heavy rains caused several dams to break resulting in one ranch losing twenty-one heads of cattle.

The Niobrara HMP identifies a dam failure event that occurred in July of 1969. Although the dam failure took place in nearby Platte County it had a substantial impact on Niobrara County. The dam break resulted in a wall of water that was 50 feet high that damaged crops, killed livestock and forced evacuations. Property damage was estimated to be over \$1 million.

The last dam failure event took place on July 21, 1973 and affected both Niobrara and Weston counties. Torrential rainfall accompanied by hail caused flash flooding to damage bridges, make roads impassable in some areas and result in several earthen dams to fail. Crop and property damaged was substantial with an estimated \$225,000 in property damage.

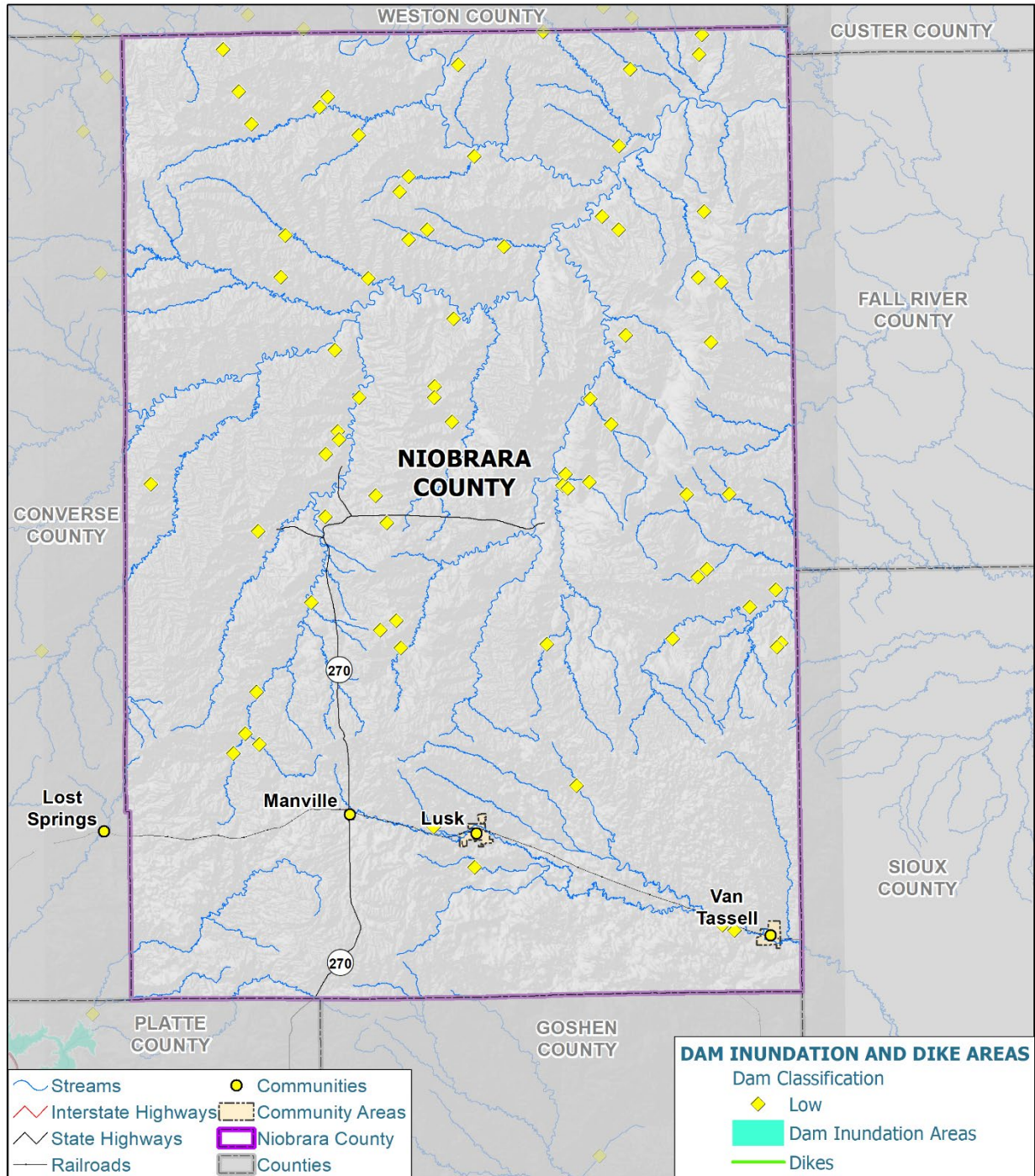
On March 20, 2019, a reservoir outside of the county near Fiddle Back Ranch failed, localized road washouts were reported and a warning was issued for northwestern Niobrara.

LOCATION

While there are no significant or high hazard dams in Niobrara County, **Figure 51** maps the low hazard potential dams within the county. There are currently no mapped dam inundation areas in the county.

Figure 51 Dams

Niobrara County - Dikes and Dam Inundation Areas



Data Source: USACE National Levee Database,
WY State Geological Survey, WYGISC, WY Geospatial Hub,
Date: 10/12/2023.



Note: no dam inundations, dikes, or levees in the Niobrara County area

EXPOSURE AND VULNERABILITY

Through development of the dam inundation risk assessment, the county identified no data limitations. There are currently no high or significant hazard potential dams within the county and therefore no associated inundation mapping is currently available for any further analysis.

Lifelines

Many Lifelines can be at risk from the effects of a dam or levee incident and resulting flooding; however, Food, Hydration, & Shelter will see the greatest immediate impact. A reservoir that serves as the primary source of drinking water can be disrupted or halted entirely, affecting the day-to-day lives of those who rely on the source, not only those who are in close proximity downstream of the dam. An incident may displace community members which may be for a short period or an extended duration if a home is destroyed.

Other Lifelines that can be affected are Energy, Communications, and Transportation. If a dam is used to generate power, the disruption of delivery to communities would impact daily operations and potentially Communications. If Communication infrastructure is damaged, the disruption or failure of communications can be dangerous for the community, as they may not receive alerts and dispatch can be interrupted. This would also greatly hinder response efforts.

Transportation system damage and interruptions can interfere with evacuations and incident response, including emergency services. If Transportation and Communications are affected, the impact on the Health and Medical Lifeline can be extensive. The Hazardous Material Lifeline can be affected also, as flood waters can lead to release of materials, from facilities downstream and private properties, especially unsecured propane tanks.

People

Those in the community with access and functional needs (AFN), located downstream in dam inundation areas (or within levee protected areas), may be incapable of evacuating the area within the necessary time frame. This population includes elderly people, people with disabilities and mobility issues, those with independent living difficulty, those who are institutionalized and those without means of transportation. Non-English speaking populations are also included as communications and emergency messaging may not be available in languages other than English. In general, anyone who does not have adequate access to warnings from an emergency warning system may be disproportionately impacted by the hazard.

Structures

All hazard potential classes of dams pose a risk to properties downstream. Vulnerable properties are those closest to, or within, the dam inundation or levee protected areas. Based on an evaluation of best available structure footprint data for the county, there are

numerous properties within levee inundation areas. Currently, much of the downtown area is protected by levees from the 100-year flood.

Property damages range greatly after a dam or levee incident, based on the severity of the water release. Structures can be completely washed away or flooded by a relatively small level of water. Any flood has the potential to render buildings uninhabitable, either permanently or for a temporary period while clean up occurs.

Agricultural lands can be greatly affected and depending on the time of year crop loss could be severe. Roads and bridges may become impassable and potentially need repairs.

Dam / levee incidents also cause damage to infrastructure. Roads or railroads that are blocked or damaged can isolate residents and can prevent access throughout the county. This is especially critical for those needing emergency service providers or for getting crews in to make repairs. Bridges washed out or blocked by floods or debris can also cause isolation. Utilities including power lines, cable, and phone lines may be knocked down or rendered unusable by the waters.

Water and sewer systems can be affected by flooding. Floodwater can back up drainage systems, causing localized flooding. Culverts can be blocked by debris from flood events, also causing localized flooding. Floodwater can get into drinking water supplies, causing contamination. Sewer systems can be backed up, causing wastewater to spill into homes, neighborhoods, rivers, and streams. Underground utilities can also be damaged.

There are no structures located in mapped dam inundation areas within Niobrara County.

Natural, Historic, and Cultural Resources

Dam incidents pose a great risk to the environment in the affected area. Flooding can change the local ecosystem, including permanent displacement of animals and extensive damage to vegetation. Damage to vegetation can contribute to erosion of riverbanks. Erosion can alter the waterway and push silt and debris downstream. The environment closest to the incident will likely be the most impacted; however, the repercussions of flooding can be felt much farther downstream.

Reservoirs held behind dams, and rivers held behind levees affect many ecological aspects of a river. River topography and dynamics depend on a wide range of flows. Rivers below dams often experience long periods of very stable flow conditions, or saw-tooth flow patterns, caused by releases followed by no releases. Water releases from dams usually contain very little suspended sediment and this can lead to scouring of riverbeds and banks.

Local Vulnerability

Depending on the severity of a dam / levee incident there can be drastic effects on the county and regional economies, as well as financial issues for affected residents. Repairs to the dam itself can be considerable and many costs can fall to local agencies, businesses, and private owners. These costs could be considerable if the structures are not insured for floods. Any resulting damage downstream can affect daily operations for

an extended period and has the potential to impact critical aspects of the economy such as recreation areas and tourist destinations.

Roads and infrastructure needed for day-to-day operations may be damaged. The transport of goods and travel across the county could be impacted, affecting the supply chain for local industry and the ability for residents to commute. **TABLE 163** provides additional vulnerability information identified by each local government.

Table 163 Local Government Vulnerability

Local Government	Local Vulnerability
Lusk	Impacts include evacuation concerns, damages to housing and infrastructure (power, water, and sewer). Roads could be rendered impassible and emergency communications could be affected. Loss of tourism economy during recovery.
Manville	Hazard does not present a known risk to the local government or community.
Van Tassel	Hazard does not present a known risk to the local government or community.
Unincorporated County	Impacts include evacuation concerns and power infrastructure. Roads could be rendered impassible and emergency communications could be affected. Loss of tourism economy during recovery.

FUTURE TRENDS IN DEVELOPMENT

Any development downstream of dams in Niobrara County could increase risk and possibly elevate the hazard potential classifications. **TABLE 164** provides additional information identified by each local government.

Table 164 Local Government Population Trends

Local Government	Local Population Trends
Lusk	No population change has recently occurred, or is expected, which would impact hazard vulnerability.
Manville	No population change has recently occurred, or is expected, which would impact hazard vulnerability.
Van Tassel	No population change has recently occurred, or is expected, which

Local Government	Local Population Trends
	would impact hazard vulnerability.
Unincorporated County	Population in the unincorporated areas of the county did not increase, nor are major increases expected in the future. Overall vulnerability has not increased, nor is expected to, due to development.

PROBABILITY OF FUTURE OCCURRENCES

The likelihood of future events increases based on multiple factors including age, correct operation and regular maintenance, and inspections of dam infrastructure. With the added issue of severe weather events, all dams, many of which may be well maintained and functional, can potentially have more incidents, especially overtopping or spillway discharges. Between 1950 and 2023 there have been 3 dam failure events in the county, meaning there is a 4% percent chance of dam failure annually.

DROUGHT

PREVIOUS OCCURRENCES

Drought is a high significance hazard across Niobrara County. Drought-related impacts to the local economy can be extensive, affecting agriculture, relief response efforts, and increasing fire danger, among others. The most affected sector in Niobrara County has been agriculture, but the county and jurisdictional agencies suffer from relief response efforts' increased management costs too, which prevent them from maintaining revenue flows during drought. Since 1999, Niobrara County has received twelve reports of countywide impacts to the various sectors due to drought. The overall significance of drought is again high throughout the county and its jurisdictions.

The county has experienced seven USDA drought declarations as shown in **Table 4**.

LOCATION

Drought is a regional phenomenon that can affect all areas of the county and participating jurisdictions with similar frequency and severity; however, this can vary across the county.

EXPOSURE AND VULNERABILITY

Lifelines

The Lifeline most impacted by a drought event is Food, Hydration, & Shelter which includes Agriculture. Droughts can affect people and their livelihoods in a multitude of ways. Most critically, a drought can be detrimental to the supply of drinking water and available water for agricultural use. If a drought affects agricultural yields, food scarcity can become an issue, but the bigger impact is financial, as a decimated harvest can harm the local farmers, regional economy, and influence the greater market for the crop.

The Health and Medical Lifeline can be impacted in the Public Health area, as drinking water quality and availability can quickly be affected in a drought. If availability is an issue, medical facilities may not be able to perform the necessary duties due to sanitary concerns.

People

The effects of water availability and quality on public health is the primary concern in a drought. The immediate concern of availability of safe drinking water during the drought affects everyone in the affected region. Extreme heat that may accompany a drought can be dangerous for community members, especially for the elderly, children, those with chronic health conditions, and those who do not have a way to cool their homes.

Those with breathing difficulties may be impacted if soil is dry and strong winds occur in the area, as air quality can worsen due to dust particles.

Structures

The majority of buildings and infrastructure are typically not affected by drought as they do not depend on water for functionality or stability. However, any power infrastructure that uses water to produce electricity for communities, such as the hydroelectric component of dams, could be greatly impacted by an extended drought. If water levels are insufficient for generating the necessary power, operations may be halted.

Natural, Historic, and Cultural Resources

The geographic extent of drought can be far reaching and the effects can vary greatly across the impacted areas. In the region, abnormally low precipitation over an extended period puts stress on all ecosystems. As waterways decrease in flow, fish and aquatic plants can suffer and it may be difficult to recover the populations. Vegetation acting as food for animals and important binding for soils can dry out and struggle to grow back. Animals in search of water and food may have to travel farther, which can affect migration and breeding. Natural areas such as wetlands that play an important role in the overall health of the environment can be destroyed if water levels decrease. The risk of wildfires increases as fuel dries out and becomes easier to ignite. Soil erosion resulting from dying vegetation can impact air quality, as strong winds pick up the dry dust.

Local Vulnerability

Niobrara is dependent on agricultural activity for a significant portion of its economic base. The lack of precipitation caused by drought can drastically impact the economy of the county. The loss of crops and livestock due to drought has compounding and long-term consequences for the local economy.

Lack of water, for irrigation and watering livestock, can affect the quality of water that is available as higher salinity concentrations result from water level drops. The lack of water availability will increase costs further limiting the value of the products.

Productivity of crop lands is reduced by drought which decreases yield, and results in crops of lower quality. The income loss for farmers due to a devastated harvest can be

felt by the local and regional economies and can last an extended period depending on the length of the drought and possibility of recovery.

Manufacturing, recreation, and commercial and domestic use can also be impacted by drought. Depending on the needs of a sector, poor water quality could result in higher costs to obtain water from acceptable sources. **TABLE 165** provides additional vulnerability information identified by each local government.

Table 165 Local Government Vulnerability

Local Government	Local Vulnerability
Lusk	Impacts would include water restrictions and impacts to water wells, limited potable water availability. Any community activities could be cancelled leading to economic and social impacts.
Manville	Impacts would include water restrictions and impacts to water wells, limited potable water and fire fighting availability. Any community activities, including 4 th of July celebrations, could be cancelled leading to economic and social impacts.
Van Tassel	Impacts would include water restrictions and impacts to water wells, limited potable water availability. Loss of power for the town is a concern.
Unincorporated County	Impacts would include impacts to water wells and power, in addition to economic impacts to ranch and agricultural sectors. Reduction in local water tables a concern in addition to impacts to community events and recreational opportunities.

FUTURE TRENDS IN DEVELOPMENT

Water in the county is sourced from “surface waters”, such as creeks, streams, lakes, and reservoirs and drought can drastically impact the population as these sources fluctuate. Leadership has an obligation to the county and communities to mitigate against drought and foster resilience in water management. Developing water management infrastructure, policies, codes, and public education can help to ensure that drought has a lessened effect as development continues. Addressing the pertinent issues during the development stage can help to avoid stressing the water supply unnecessarily.

TABLE 166 provides additional information identified by each local government.

Table 166 Local Government Population Trends

Local Government	Local Population Trends
Lusk	No population change has recently occurred, or is expected, which would impact hazard vulnerability.
Manville	No population change has recently occurred, or is expected, which would impact hazard vulnerability.
Van Tassel	No population change has recently occurred, or is expected, which would impact hazard vulnerability.
Unincorporated County	Population in the unincorporated areas of the county did not increase, nor are major increases expected in the future. Overall vulnerability has not increased, nor is expected to, due to development.

PROBABILITY OF FUTURE OCCURRENCES

The relatively steady issuing of USDA disaster declarations over the last 15 years, as presented in **Table 4**, suggests it is likely the county will continue to experience drought substantial enough to need aid. It should also be noted that the counties have been contiguous to others that have received additional declarations.

The county has received seven drought declarations since 2012, which equates to a 63% annual chance of a notable event occurring.

EARTHQUAKE

PREVIOUS OCCURRENCES

Niobrara County has experienced eleven notable seismic events since 1889 (though more may have taken place but not been recorded/reported). The earthquakes occurring in the county are not usually felt, nor do they cause any reportable damages or injure populations every time. In **TABLE 167** are the known occurrence summaries; none of those events resulted in damages or injuries:

Table 167 Notable Seismic Events

Date	Magnitude/ Intensity
October 8, 1889	N/A
February 25, 1942	Intensity V

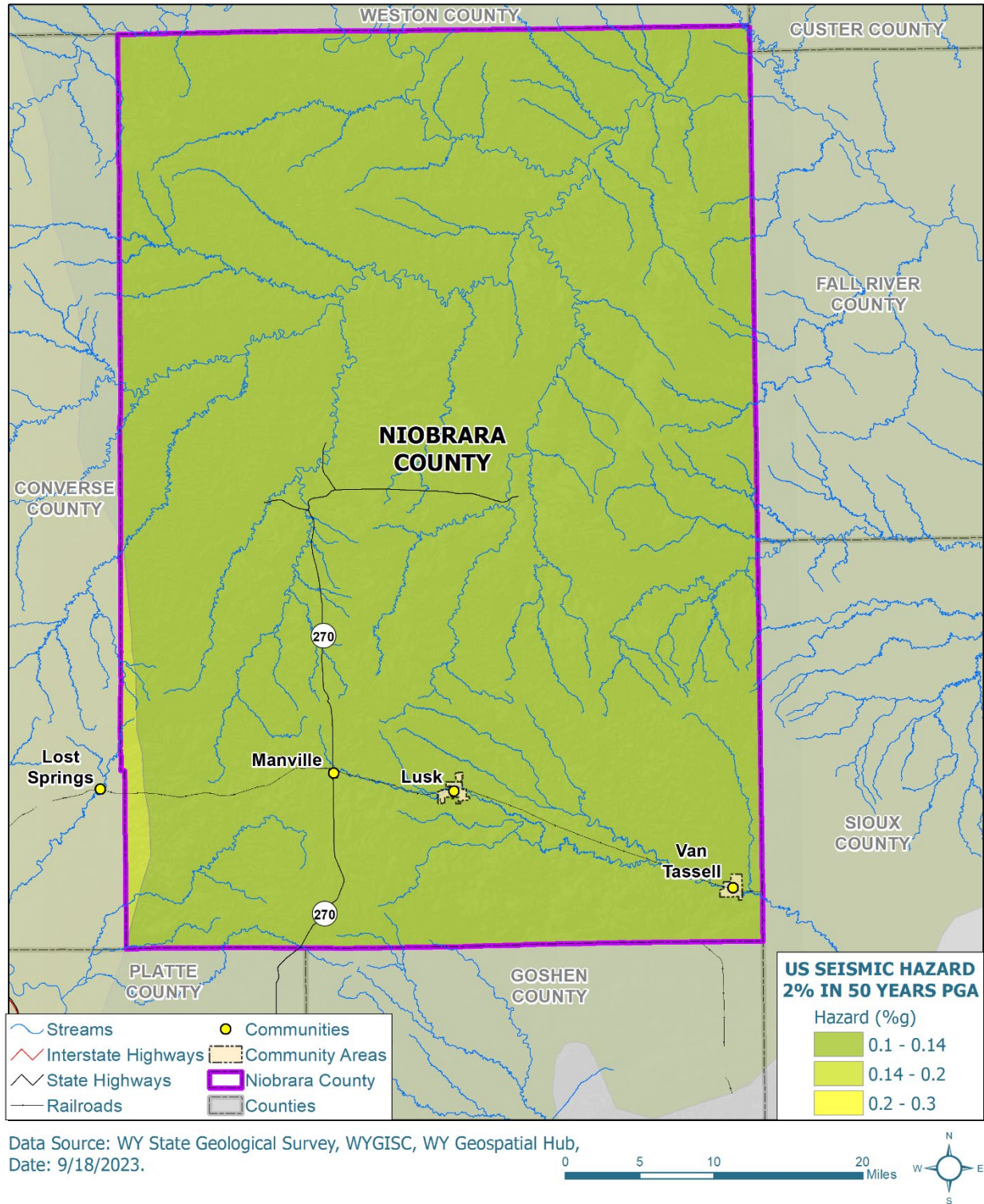
Date	Magnitude/ Intensity
October 3, 1954	Intensity IV
March 28, 1964	Intensity V
August 22, 1964	Magnitude 4.5, Intensity V
April 8, 1995	Magnitude 3.7, Intensity III
May 3, 1996	Magnitude 3.1
August 22, 2008	Magnitude 3.1
March 10, 2011	Magnitude 2.9

LOCATION

Earthquakes have the potential to impact all areas of the county. Peak ground acceleration (PGA) is a measure of the maximum force experienced by a small mass located at the surface of the ground during an earthquake. A higher PGA roughly equates to more intense shaking. **Figure 52** illustrates the PGA for Niobrara County.

Figure 52 Peak Ground Acceleration

Niobrara County - Earthquake PGA



EXPOSURE AND VULNERABILITY

Lifelines

All Lifelines can be impacted significantly by an earthquake. Even with minimal damage Food, Hydration, & Shelter can be greatly affected due to need for sheltering displaced individuals, the likelihood of water pipelines leaking and breaking, and the possible contamination of the drinking water supply.

Infrastructure damage to Communications, Energy, and Transportation can range from minimal impacts on functionality to systems completely unable to provide information and power to the community. Transportation can be slowed by small upheavals in pavements or completely halted due to downed bridges or impassable roadways.

Health and Medical operations can be disrupted due to building damage or inability to transport patients. Fatality management may be needed on a large scale. Safety and Security may be unable to meet community needs if there is building or equipment damage. Hazardous Materials have the potential to be released from facilities or impacted in transit.

People

All people in the county are at risk to earthquakes. Depending on the location, magnitude, and other characteristics of the event, the effect on life safety can vary drastically. In a populated, developed area the risk of people being harmed is much higher than in an event that affects a rural area. Community members residing in multi-unit structures are vulnerable to the impacts of earthquakes, especially if their building is unstable or not built to current building codes.

Structures

There are many factors that affect the property damage an earthquake is capable of inflicting. Age and type of a building, as well as the materials used in construction all contribute to the likelihood of withstanding an earthquake with minimal damage. Historic buildings are especially at risk for these reasons.

Buildings constructed to meet updated codes or retrofitted to bring them up to code are at an advantage if an event were to happen. These codes are rated to a certain level of seismic activity; however, if an event of higher magnitude happens, serious damage is still possible.

Earthquakes can also rupture pipeline leading to sink holes causing damages to roads. Seismic waves can also cause damages to bridges, tunnels, sewer lines, and railways.

Damages from an earthquake can be broad, from minor cosmetic cracking to rendering a building uninhabitable. The variables of an event, as well as characteristics and the specifics of each building make estimation of damages difficult.

Based on 2,500 year probabilistic modeling of a 5.5 magnitude event, FEMA's Hazus loss estimation tool estimates the following. The full

Earthquake Hazus Risk Report can be found later in this annex.

- 51.83 % of single family homes and 35.84% of other residential buildings are expected to have slight damages

Natural, Historic, and Cultural Resources

Earthquakes can change the very landscape of an environment, as ground openings, liquefaction, and landslides are possible. Wildlife may leave the area for an extended period, especially if an ecosystem is impacted. The secondary impacts of a dam failure or fire being ignited could have devastating effects in addition to the damage from the earthquake.

Local Vulnerability

Earthquakes have the potential to impact the economy on a large scale. Depending on the magnitude and location of the earthquake there could be extensive damage to infrastructure, buildings, and roads. Major damage to any of these would disrupt daily operations and require considerable construction and repairs. The duration of recovery could have a significant effect on the ability of businesses to reopen. **TABLE 168** provides additional vulnerability information identified by each local government.

Table 168 Local Government Vulnerability

Local Government	Local Vulnerability
Lusk	Impacts would stress the hospital and medical resources. Power, water, and sewer infrastructure would be damaged. Displacement of persons seeking temporary shelter. Communication (internet, landline, radio) impacts expected. Historic buildings could be destroyed and many community activities would be put on hold.
Manville	Power, water, and sewer infrastructure would be damaged. Displacement of persons seeking temporary shelter. Communication (internet, landline, radio) impacts expected.
Van Tassel	Power and water infrastructure would be damaged. Displacement of persons seeking temporary shelter. Communication (internet, landline, radio) impacts expected. Historic buildings could be destroyed.
Unincorporated County	Power infrastructure would be damaged. Ingress/egress challenges for emergency responders. Communication (internet, landline, radio) impacts expected.

FUTURE TRENDS IN DEVELOPMENT

The adoption of the most recent building codes is crucial to public safety, as growth continues and development increases. Adherence and enforcement of these codes and ensuring the continued adoption of building code updates will ensure construction is built to withstand a seismic event. **TABLE 169** provides additional information identified by each local government.

Table 169 Local Government Population Trends

Local Government	Local Population Trends
Lusk	No population change has recently occurred, or is expected, which would impact hazard vulnerability.
Manville	No population change has recently occurred, or is expected, which would impact hazard vulnerability.
Van Tassel	No population change has recently occurred, or is expected, which would impact hazard vulnerability.
Unincorporated County	Population in the unincorporated areas of the county did not increase, nor are major increases expected in the future. Overall vulnerability has not increased, nor is expected to, due to development.

PROBABILITY OF FUTURE OCCURRENCES

The relatively steady issuing of USDA disaster declarations over the last 15 years as presented in **Disaster Declaration History**, suggests it is likely the Region will continue to experience drought substantial enough to need aid. It should also be noted that the counties have been contiguous to others that have received additional declarations.

From 1931 to 2012, the county experienced drought for 26 non-consecutive years, predicting a 40% chance of drought occurring annually.

EXPANSIVE SOILS

PREVIOUS OCCURRENCES

Due to the slow nature and primarily localized effects of expansive soils, they are often not reported as events. Damages within communities, such as cracking of foundations, sidewalks, roads, and parking lots are repaired and may not be attributed to expansive soils. Effects on supply lines, railways, bridges, and utility infrastructure are repaired or relocated without further investigation. Individual property owners become aware of damage to their homes and typically will handle repairs without informing towns or counties of the issue.

LOCATION

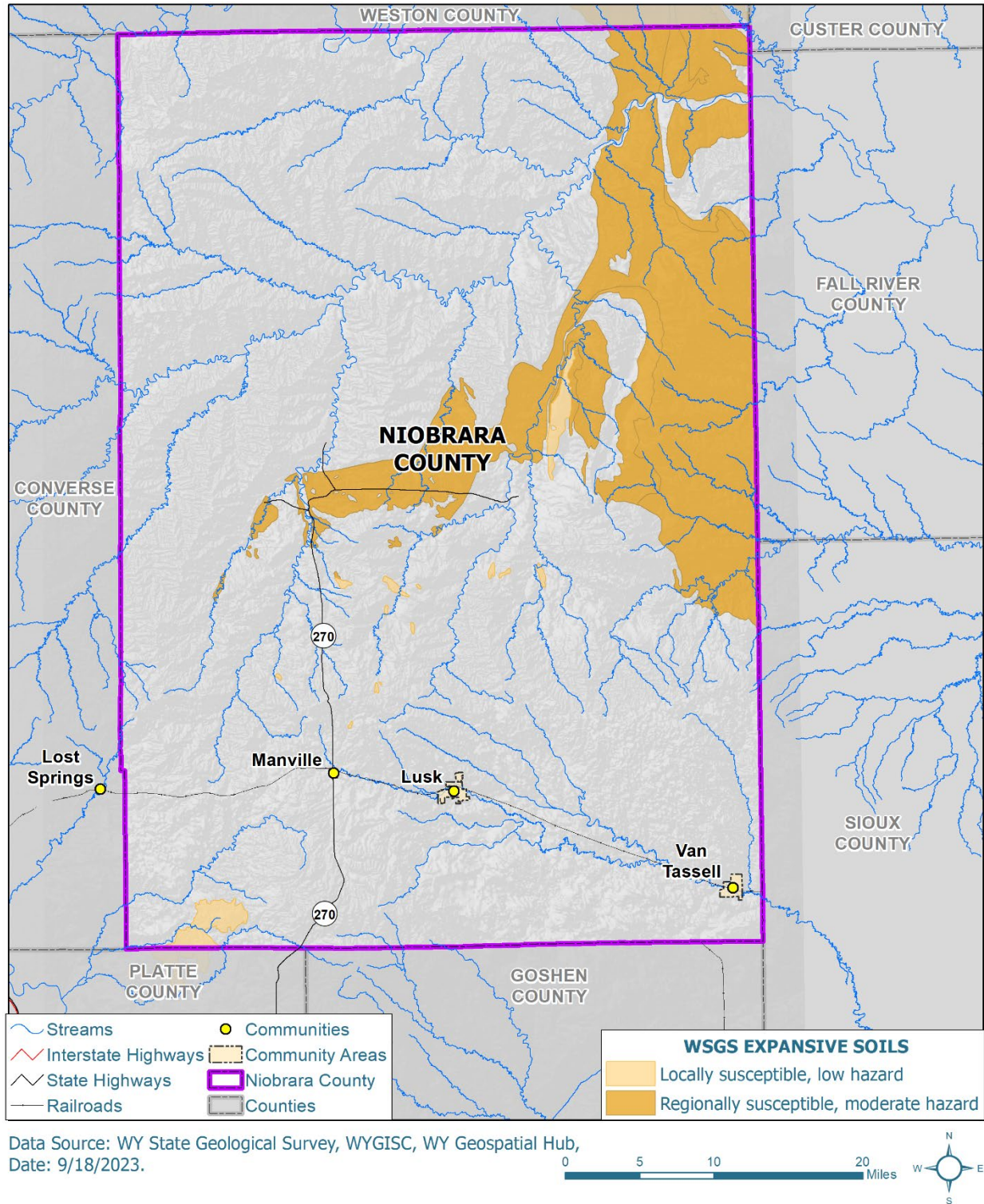
Expansive soils have been identified in multiple areas across the Region. While damage costs from expansive soils can be significant, they are typically localized, and it is unlikely a large area would be impacted all at once. Due to the slow nature of soil swelling and shrinking, damages may not be apparent for years and estimating the overall costs in the affected area can be difficult.

Throughout the county numerous areas fall within identified expansive soil areas and could be impacted by this hazard. Viewing countywide and sometimes even municipal-scale maps does not provide the ability to see an individual community's specific hazard risk. Readers are urged to utilize available hazard data viewers to better understand their community's hazard risk. Expansive soil hazard information can be accessed through WY State Geological Survey's [Wyoming Geologic Hazards Map](#).

Figure 53 maps the location of areas locally and regionally susceptible to expansive soils in the county.

Figure 53 Expansive Soils Areas

Niobrara County - Expansive Soils



EXPOSURE AND VULNERABILITY

Lifelines

Some Lifelines have the potential to be affected by expansive soils, primarily Transportation and Energy. Shifting soils can disrupt pipelines and power infrastructure, and impact the safety of roads, railways, and bridges. **TABLE 170** presents the lifelines that are located within moderate expansive soil hazard areas (there are none located in low hazard areas).

Table 170 Lifelines in Expansive Soil Areas (Moderate Hazard)

Lifeline	Lusk	Manville	Van Tassell	Unincorporated	Total
Communications	-	-	-	-	0
Energy	-	-	-	-	0
Energy (Miles)	-	-	-	-	0
Food, Hydration, & Shelter	-	-	-	-	0
Health & Medical	-	-	-	-	0
Safety & Security	-	-	-	-	0
Transportation	-	-	-	8	8
Transportation (Miles)	-	-	-	46.2	46.2

People

There is no immediate threat to the public from expansive soils. Since there is no sudden shifting of the ground, people are able to notice changes in structures caused by the soil expansion over time. Observed changes in the structure can be addressed and repaired, or if necessary, people can be relocated. While small, there is a chance that damage to a structure would pose a threat to people if it went unnoticed for a long period and the structure failed.

Structures

Expansive soils can damage building foundations, pavement, supply lines, and utility infrastructure. **TABLE 171** outlines the properties within each jurisdiction that are exposed to moderate expansive soil hazards.

Table 171 Structures in Expansive Soil Areas (Moderate Hazard)

	Total Structure Count	Total Improved Structure Count	Total Structure Value	Estimated Content Value
Lusk	0	0	\$-	\$-
Manville	0	0	\$-	\$-
Van Tassell	0	0	\$-	\$-
Unincorporated	155	146	\$27,915,422.55	\$39,782,913.30
Commercial	8	8	\$7,903,736	\$14,768,306
Industrial	1	0	\$-	\$-
Residential	146	138	\$20,011,686	\$25,014,608
Total	155	146	\$27,915,422.55	\$39,782,913.30

Natural, Historic, and Cultural Resources

Soil expansion does not have a large immediate impact on the environment as the effects occur over extended periods. Overall, expansive soils have the potential to alter the landscape of an area, but not drastically and should not affect wildlife and plant life in an ecosystem.

Local Vulnerability

A regional economic impact is highly unlikely. If transportation routes, power infrastructure, or pipelines are damaged it could result in costs for repair or relocation, which may be a local or private responsibility. **TABLE 172** provides additional vulnerability information identified by each local government.

Table 172 Local Government Vulnerability

Local Government	Local Vulnerability
Lusk	Hazard does not present a known risk to the local government or community.
Manville	Hazard does not present a known risk to the local government or

Local Government	Local Vulnerability
	community.
Van Tassel	Hazard does not present a known risk to the local government or community.
Unincorporated County	Impacts to roadways and power/communication infrastructure.

FUTURE TRENDS IN DEVELOPMENT

As development trends continue, the proper identification of expansive soil areas will be critical to new development being safe and sustainable over decades. All new developments in the region should be aware of this need for identification and enforce building codes and mitigation measures accordingly. **TABLE 173** provides additional information identified by each local government.

Table 173 Local Government Population Trends

Local Government	Local Population Trends
Lusk	No population change has recently occurred, or is expected, which would impact hazard vulnerability.
Manville	No population change has recently occurred, or is expected, which would impact hazard vulnerability.
Van Tassel	No population change has recently occurred, or is expected, which would impact hazard vulnerability.
Unincorporated County	Population in the unincorporated areas of the county did not increase, nor are major increases expected in the future. Overall vulnerability has not increased, nor is expected to, due to development.

PROBABILITY OF FUTURE OCCURRENCES

Expansive soils do not change composition and therefore are always capable of swelling and shrinking. Due to this, soils can impact buildings and infrastructure in the region over years. This likelihood can increase if new development is built in expansive soil areas without addressing the risks posed by the hazard. There is a 100% chance that expansive soils will impact some portion of the county in a given year.

FLOOD

PREVIOUS OCCURRENCES

Since 1950 there have been five flood events in Niobrara County, these events are detailed in **TABLE 174**.

Table 174 Notable Flood Events

Date	Property Damages
August 6, 2006	\$40,000
Heavy rainfall produced flash flooding along Dogie, Spring and Lance creeks, washing out a bridge and road.	
May 26, 20015	
Four inches of rain in less than two hours produced flash flooding with over six inches of swiftly flowing water into Twentymile Gulch.	
June 3, 2015	
Four to six inches of rain from a stationary thunderstorm resulted in flash flooding across southwest Niobrara County. Highway 20 from Keeline to Manville was inundated with several feet of water. A culvert on Highway 20 near Manville was washed out. Law enforcement officials evacuated residents in Manville as well as along the swollen Niobrara River near Manville.	
June 4, 2015	\$1,500,000
As much as eight inches of rain fell from slow moving thunderstorms across south and southeast Niobrara County during the predawn hours, which resulted in widespread flash flooding. Excessive runoff upstream into the Niobrara River and nearby creeks caused them to overflow their banks. Law enforcement officials evacuated residents of Lusk as well as those living along the Niobrara River downstream to Van Tassel several hours in advance of the flood wave. The worst damage occurred in Lusk where 20 to 30 homes and 15 to 20 businesses were destroyed. Flood waters and debris rushed down Main Street in Lusk, swamped four blocks, and shut down the town's water supply. The US Highway 85 bridge on the north side of Lusk collapsed onto the railroad tracks below. Flash flooding closed a 20-mile stretch of US Highway 20 from Lusk to the Nebraska border, US Highway 85 from Lusk to the Goshen County line, and a 35-mile stretch of Highway 270 from Manville north to Lance Creek. WYDOT closed traffic into and out of Lusk, except for residents and emergency responders. Various state agencies, including the Red Cross and Wyoming National Guard, assisted in the flood cleanup efforts. A local command center was established at the Lusk Fairgrounds with water, food and shelter. The governor declared a state of emergency for Niobrara County. Fortunately, there were no injuries or fatalities.	

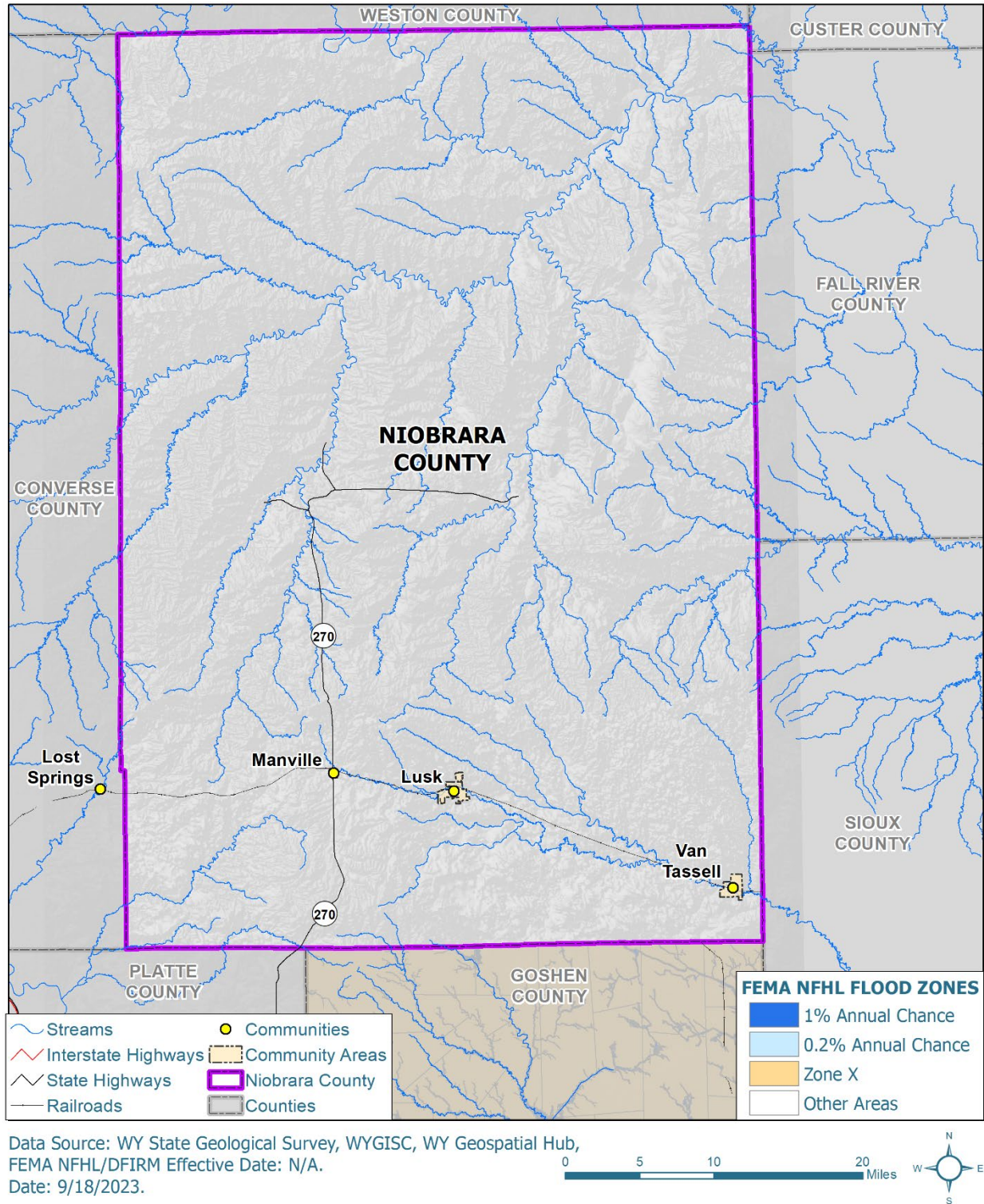
Date	Property Damages
June 22, 2023	
Niobrara County Emergency Manager reported 3 inches of rain in Manville that flowed east into the Niobrara River that runs into Lusk. Niobrara River in Lusk was out of its banks.	

LOCATION

There are currently no mapped floodplains in Niobrara County. **Figure 54** presents the major streams and rivers across the county, which all can present a risk to flooding.

Figure 54 Streams and Rivers

Niobrara County - Flood Hazards DRAFT DFIRM/NFHL not available



EXPOSURE AND VULNERABILITY

Lifelines

Floods impact Lifelines through closure of businesses and government facilities, disrupted communications, interruption in the delivery of utilities such as water and sewer, excess burden on emergency response resources, and generally hinder the normal functions of a community. Food, hydration, and shelter lifelines are impacted by floods as community residents can be displaced from their homes during a flooding event, agricultural activities can be disrupted, and potable water sources can be contaminated.

Additionally, Transportation can be disrupted by flooding events causing road damages and closures and increased traffic in the case of community evacuation.

Health and Medical lifelines can also be impacted by flood events. Transportation impacts can disrupt patient and medical supply transportation. Health and medical facilities management can also be impacted with physical damages and increases in in-coming patients.

There are no mapped floodplains in the county.

People

People living in floodplains, known flooding areas, or near areas where flash floods can occur are at an increased risk from the hazard. Those in the community with access and functional needs (AFN) may have issues evacuating and are at increased further risk, including the elderly, children, those with mobility or communication issues, those with low incomes, institutionalized, and people who may be unfamiliar with the area. Floods can cause serious injury and death if people are unable to get to safe locations. Some of the population may be displaced from their homes, with varying durations which can strain community resources.

Non-English speaking populations are also included as having a higher vulnerability as communications and emergency messaging may not be available in languages other than English. In general, anyone who does not have adequate access to warnings from an emergency warning system may be disproportionately impacted by the hazard.

The dangers of flash flooding pose an even greater risk, as those in these populations may not be able to extricate themselves from an immediately threatening situation. The need for emergency responders to place these populations as a priority is crucial to the best possible outcomes.

Structures

It is important to identify who may be at risk if infrastructure is damaged by flooding. Roads or railroads that are blocked or damaged can isolate residents and can prevent access throughout the county. This is especially critical for those needing emergency service providers or for getting crews in to make repairs. Bridges washed out or blocked

by floods or debris can also cause isolation. Utilities including power lines, cable, and phone lines may be knocked down or rendered unusable by the waters.

Water and sewer systems can be affected by flooding. Floodwater can back up drainage systems, causing localized flooding. Culverts can be blocked by debris from flood events, also causing localized flooding. Floodwater can get into drinking water supplies, causing contamination. Sewer systems can be backed up, causing wastewater to spill into homes, neighborhoods, rivers, and streams. Underground utilities can also be damaged.

Many properties in the county are vulnerable to flooding, including those that may not be within a mapped floodplain. While some properties make be flood proofed, the majority are likely to be significantly damaged if in the flooded area. Properties near waterways may have stability issues as the flood waters erode the banks and carry debris, while properties in low-lying areas are more vulnerable as these are where water would collect.

There are no structures located in mapped floodplains.

Natural, Historic, and Cultural Resources

Flooding is a natural event, and floodplains provide many natural and beneficial functions. However, with human development factored in, flooding can impact the environment in negative ways. Wildlife habitats can be impacted, due to altered food availability and interrupted breeding patterns. The effects on water quality due to silt and debris can impact wildlife downstream of the flooding. Erosion of riverbanks can permanently alter a waterway and vegetation on the banks may not recover from the damage. Aquatic life can wash onto roads or over dikes into flooded fields. Pollution from roads such as oil and hazardous materials can wash into rivers and streams. During floods, these can settle onto normally dry soils, polluting them for agricultural uses.

Local Vulnerability

Flooding can have a long-term economic impact on individuals and the county. Homes that are damaged may require extensive repairs which can take place over a long duration, especially if mold develops. The cost of infrastructure repair for utilities, roads, and bridges, as well as the components of Lifelines may extend over multiple years as projects are prioritized and funds are acquired. Costs for debris clean-up can be considerable and can be a burden to property owners.

Returning to normal operations and daily life can take time which affects the day-to-day economy of the flooded area. Some businesses may struggle with repair costs and whether they can reopen at all.

Destruction of crops, erosion of topsoil, and deposition of debris and sediment on croplands due to flood would be expensive to remediate, as well as recover from lack of yield. Direct costs for the value lost and indirect costs for the loss of work that comes from harvest and livestock transport can impact the agricultural community for an extended period. **TABLE 175** provides additional vulnerability information identified by each local government.

Table 175 Local Government Vulnerability

Local Government	Local Vulnerability
Lusk	Impacts to evacuation routes and sheltering needs. Damage to water, sewer, power, and transportation infrastructure. Ingress/egress challenges for first responders. Communication system (internet, cell, landline) impacts. Damages to historic buildings. Resulting impacts to local parks and recreation areas.
Manville	Impacts to sheltering needs. Damage to water, sewer, power, and transportation infrastructure. Communication system (internet, cell, landline) impacts. Damages to historic buildings. Any community activities, including 4 th of July celebrations, could be cancelled leading to economic and social impacts.
Van Tassel	Damage to power and transportation infrastructure. Communication system (internet, cell, landline) impacts. Damages to historic buildings.
Unincorporated County	Impacts to county road culverts and major highway. Damage to power infrastructure. Ingress/egress challenges for first responders. Communication system (internet, cell) impacts. Resulting impacts to recreation areas.

FUTURE TRENDS IN DEVELOPMENT

As development in the county continues, flood risks will have larger impacts and increase community vulnerability. Proper mitigation will include public education on flood plains and building codes that recognize flood risks. **TABLE 176** provides additional information identified by each local government.

Table 176 Local Government Population Trends

Local Government	Local Population Trends
Lusk	No population change has recently occurred, or is expected, which would impact hazard vulnerability.
Manville	No population change has recently occurred, or is expected, which would impact hazard vulnerability.
Van Tassel	No population change has recently occurred, or is expected, which would impact hazard vulnerability.

Local Government	Local Population Trends
Unincorporated County	Population in the unincorporated areas of the county did not increase, nor are major increases expected in the future. Overall vulnerability has not increased, nor is expected to, due to development.

PROBABILITY OF FUTURE OCCURRENCES

Flooding is likely in the region and the effects could be extensive, considering the amount of area and property that lies within floodplain. Flash floods will occur more often in areas that have seen damage from wildfires, affecting the soil's ability to retain moisture. In the past 73 years there have been five notable flood events in the county, which mean that there is a 7% chance of experiencing one of these events annually.

LANDSLIDE / ROCKFALL / DEBRIS FLOWS

PREVIOUS OCCURRENCES

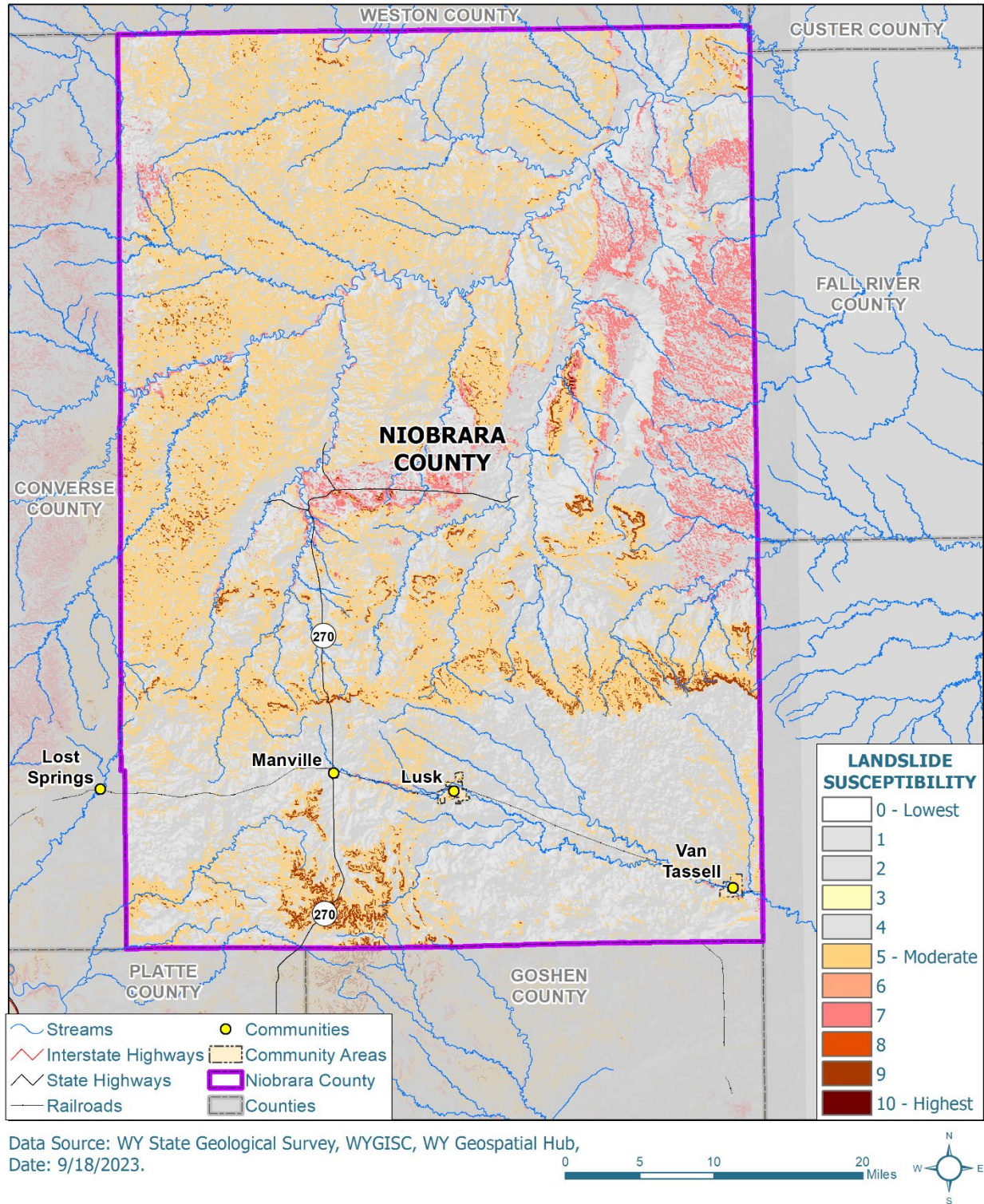
The geologic history and unique conditions of Wyoming make landslides one of the most common hazards. However, in Niobrara County, there have been no recorded events.

LOCATION

Landslide deposits are very minimal, and only small amounts of slump and debris/earth flow terrains are found in the county. These small areas are located between WY highway 270 and U.S. highway 18, to the southeast of Manville but southwest of Lusk, in central-south Niobrara. **Figure 55** maps the landslide susceptibility across the county.

Figure 55 Landslide Susceptibility

Niobrara County - Landslide Susceptibility



EXPOSURE AND VULNERABILITY

Lifelines

All community Lifelines across the county are vulnerable to the impacts from a mass wasting event. The Transportation Lifeline could be the most impacted. While no analysis is possible without mapped hazard areas, the likelihood of road closures and bridge damage in a debris flow event is high. Most debris flows will have little to no impact to Lifelines. In some cases, single events may have significant impact, resulting in deaths or causing extensive damage to public infrastructure. **TABLE 177** presents the lifelines located in landside susceptible areas.

Table 177 Lifelines in Landslide Susceptible Areas

Lifeline	Lusk	Manville	Van Tassell	Unincorporated	Total
Moderate					
Communications	-	-	-	-	0
Energy	-	-	-	-	0
Energy (Miles)	-	-	-	-	0.0
Food, Hydration, & Shelter	-	-	-	-	0
Health & Medical	-	-	-	-	0
Safety & Security	-	-	-	-	0
Transportation	-	-	-	3	3
Transportation (Miles)	-	-	-	6.5	6.5
High					
Communications	-	-	-	-	0
Energy	-	-	-	-	0.0
Energy (Miles)	-	-	-	-	0
Food, Hydration, & Shelter	-	-	-	-	0

Lifeline	Lusk	Manville	Van Tassell	Unincorporated	Total
Health & Medical	-	-	-	-	0
Safety & Security	-	-	-	-	0
Transportation	-	-	-	-	0
Transportation (Miles)	-	-	-	0.9	0.9

People

Exposure to landslide hazard areas is likely limited. Individuals in recreation areas or driving on roadways may also be exposed to landslide hazards. In general, all persons exposed to landslide hazard areas are considered to be vulnerable.

In most debris flow events, there are limited or no deaths and injuries.

Structures

Several types of infrastructure are exposed to mass movements, including transportation, water and sewer, and power. Highly susceptible areas of the county include mountain roads and transportation infrastructure. At this time, all infrastructure and transportation corridors identified as exposed to the landslide hazard are considered vulnerable until more information becomes available.

TABLE 178 accounts for the total exposure of buildings to landslide susceptibility areas. These areas are where landslides are most likely to happen and therefore pose the highest risk to people and property.

Table 178 Structures in Landslide Susceptible Areas

	Total Structure Count	Total Improved Structure Count	Total Structure Value	Estimated Content Value
Lusk *	4.00	4.00	\$2,089,493	\$2,611,867
Residential *	4.00	4.00	\$2,089,493	\$2,611,867
Manville	-	-	\$-	\$-
Van Tassell	-	-	\$-	\$-

	Total Structure Count	Total Improved Structure Count	Total Structure Value	Estimated Content Value
Unincorporated	6.00	6.00	\$829,781	\$1,037,226
Residential	6.00	6.00	\$829,781	\$1,037,226
Total	10.00	10.00	\$2,919,274	\$3,649,092

* Exposure data utilized best available statewide GIS mapping. The Town of Lusk does not concur with the accuracy of this landslide susceptibility data and does not find value in using this statewide data for local exposure analysis.

Natural, Historic, and Cultural Resources

Landslides, debris flows, and rockfalls have the ability to cause damages to the various natural, historic, and cultural resources of a community. These events can damage historic buildings, museums, as well as other historic and culturally important structures and spaces. Additionally, these events can damage agricultural systems, destroying crops and harming livestock, and disrupt natural ecosystems.

Local Vulnerability

Road closures caused by landslides, debris flows, and rockfalls have economic impacts on communities. Not only may businesses along closed road experience decreased customer traffic, reduced sales, and potential financial losses, road closures can impact supply chains, transportation logistics, and productivity.¹⁴ **TABLE 179** provides additional vulnerability information identified by each local government.

Table 179 Local Government Vulnerability

Local Government	Local Vulnerability
Lusk	Hazard does not present a known risk to the local government or community.
Manville	Hazard does not present a known risk to the local government or community.
Van Tassel	Hazard does not present a known risk to the local government or

¹⁴ <https://www.nationaltrafficdesigns.com/how-does-a-road-closure-affect-traffic-flow/>

Local Government	Local Vulnerability
	community.
Unincorporated County	Rockfall could block Highway 270 north of Manville, limiting ingress/egress for emergency personnel and the public. Potential economic impacts is supply or transportation routes in jeopardy. Impacts to roadways and power infrastructure. Communication system impacts.

FUTURE TRENDS IN DEVELOPMENT

Any development in known landslide area could increase risk to this hazard. Development in and around previous wildfire burn scars will also experience increased risk. **TABLE 180** provides additional information identified by each local government.

Table 180 Local Government Population Trends

Local Government	Local Population Trends
Lusk	No population change has recently occurred, or is expected, which would impact hazard vulnerability.
Manville	No population change has recently occurred, or is expected, which would impact hazard vulnerability.
Van Tassel	No population change has recently occurred, or is expected, which would impact hazard vulnerability.
Unincorporated County	Population in the unincorporated areas of the county did not increase, nor are major increases expected in the future. Overall vulnerability has not increased, nor is expected to, due to development.

PROBABILITY OF FUTURE OCCURRENCES

The frequency of landslide events within the county are difficult to ascertain due to a lack of information regarding past events. For the purposes of this plan, it will be assumed that landslide / rockfall events are likely to occur in any given year (100% annual chance).

Debris flows can occur rapidly with little warning during torrential rains. Debris flows generally occur with floods and downpours associated with the late summer monsoon season. Quantitative data availability is limited but, future debris flow events are likely to occur across the county. Multiple factors may increase the frequency, including the effects of wildfire on the landscape and its ability to retain water.

MINE AND LAND SUBSIDENCE

PREVIOUS OCCURRENCES

Collapsible soils, evaporite sinkholes, undermined area subsidence are present across the state. Previous losses due to collapsible soils, sinkholes, and coal undermined area subsidence can be difficult to quantify as there is no central reporting location for any of these hazards. Although one incident of these hazards can cost millions to repair and remediate, which is shown in the loss figures for some of the notable events.

LOCATION

The variance in geography across the state creates very different geologic conditions and therefore unique exposure to the specific hazards impacting communities. It should be noted that the location of undermined areas is not the same thing as subsidence hazard. In general, subsidence hazards typically extend beyond the mapped footprint of a mine. The coal undermined subsidence areas provide a best available data snapshot, as there are known mines that have not been studied to determine the subsidence risk.

EXPOSURE AND VULNERABILITY

People

Anyone living over or near an undermined area or other area susceptible to ground subsidence is at risk from the hazard. In many cases it is known where mines are located, as well as the shaft openings.

Structures

Subsidence can result in ground displacement of several feet and serious structural damage to buildings, roads, irrigation ditches, underground utilities, and pipelines. It can disrupt and alter the flow of surface or underground water. Surface depressions created by subsidence may be filled in, only to sink further because the underground void has not been completely closed.

Natural, Historic, and Cultural Resources

Mine and land subsidence events can damage the nature ecosystem within the county. Ground collapse can additionally impact agriculture by damaging farmland and infrastructure

Local Vulnerability

Previous losses due to collapsible soils, sinkholes, and coal undermined area subsidence can be difficult to quantify as there is no central reporting location for any of these hazards. Although one incident of these hazards can cost millions to repair and remediate, which is shown in the loss figures for some of the notable events.

TABLE 181 provides additional vulnerability information identified by each local government.

Table 181 Local Government Vulnerability

Local Government	Local Vulnerability
Lusk	Hazard does not present a known risk to the local government or community.
Manville	Hazard does not present a known risk to the local government or community.
Van Tassel	Hazard does not present a known risk to the local government or community.
Unincorporated County	Any areas where historic underground mining has occurred. Impacts to utility systems are of most concern.

FUTURE TRENDS IN DEVELOPMENT

All future development can be affected by mine and land subsidence. The vulnerability of community assets is increasing through time as more people enter the planning area. Public education is critical as new residents move to the area, as many have experienced prior subsidence events. While property damage is often unavoidable, public safety can be improved with education.

TABLE 182 provides additional information identified by each local government.

Table 182 Local Government Population Trends

Local Government	Local Population Trends
Lusk	No population change has recently occurred, or is expected, which would impact hazard vulnerability.
Manville	No population change has recently occurred, or is expected, which would impact hazard vulnerability.
Van Tassel	No population change has recently occurred, or is expected, which would impact hazard vulnerability.
Unincorporated County	Population in the unincorporated areas of the county did not increase, nor are major increases expected in the future. Overall vulnerability has not increased, nor is expected to, due to development.

PROBABILITY OF FUTURE OCCURRENCES

While mine and land subsidence events are rarely recorded, they will continue to occur throughout Niobrara County. There is a 100% chance that these events will impact some portion of the county in a given year.

SEVERE WEATHER

PREVIOUS OCCURRENCES

Thunderstorm and Lightning

Since 1950 there have been 71 severe weather events in Niobrara County, those that caused damages are outlined in **TABLE 183**.

Table 183 Notable Severe Weather Events

Date	Property Damages
July 12, 1995	\$4,000
Strong thunderstorm winds destroyed a garage just west of Lusk. Lightning caused a power outage for an hour in Lusk.	
August 29, 1996	\$10,000
Strong thunderstorm winds knocked down a shed.	
July 24, 1997	\$5,000
Fire started in northern Niobrara County evening of 7/24 put out 7/26 after firefighters logged 28 hrs of duty and used 50000-60000 gallons of water; grass and cottonwood trees were consumed; no livestock lost.	
July 6, 2001	\$10,000
Strong wind gusts damaged corrals and sheds as well as removed some roof shingles.	
July 6, 2001	\$1,000
Thunderstorm wind took roof off storage shed.	
May 4, 2010	\$1,000
A strong low pressure system tracked into the Pacific Northwest on the 2nd of May with a trailing cold front that moved into Wyoming the morning of the 4th. Ahead of the front, a strong pressure gradient developed giving us high wind warning criteria across southern	

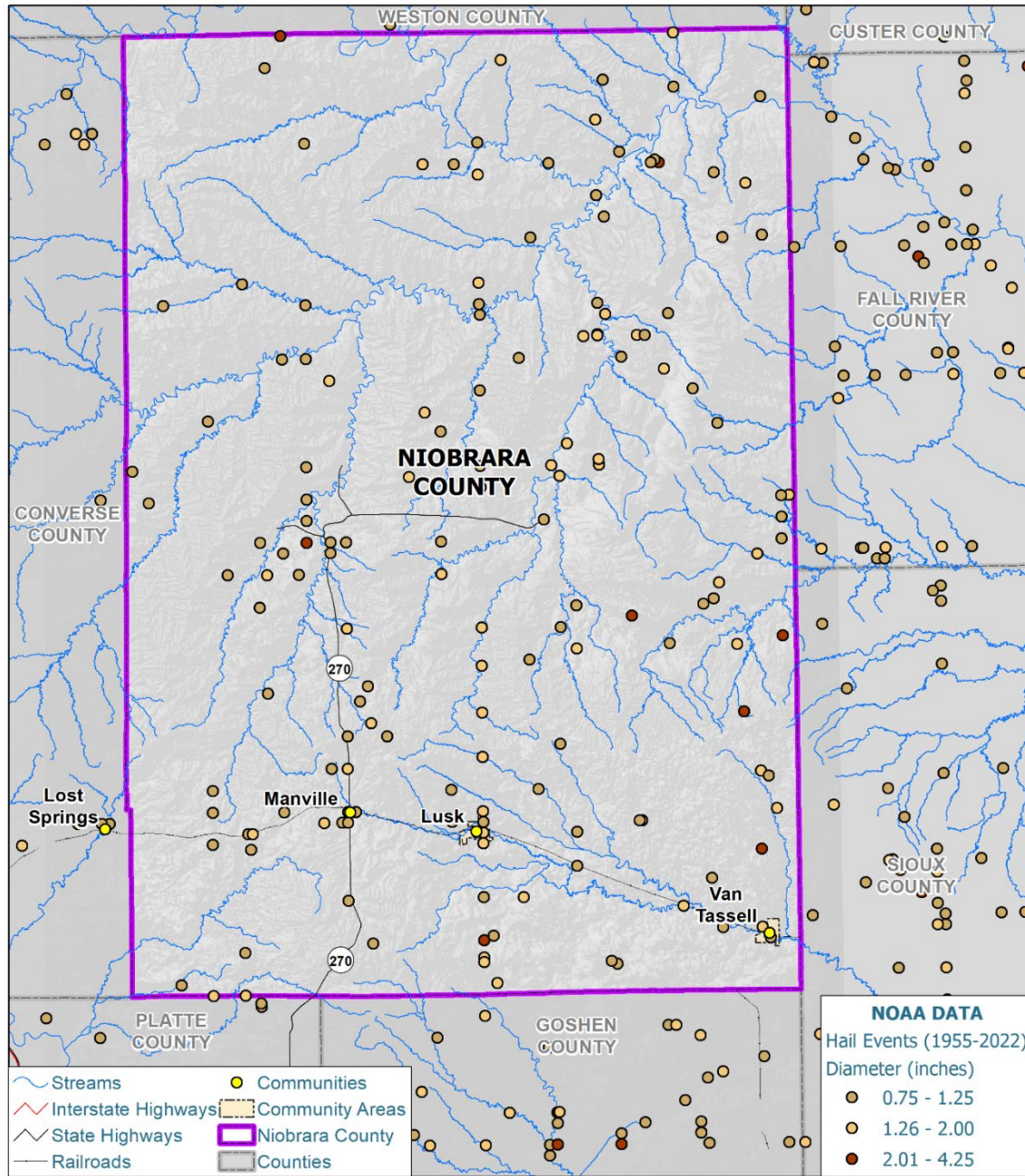
Wyoming the morning of the 3rd with widespread warning criteria developing the morning of the 4th and persisting through the day. A brief period of calm winds was observed immediately behind the cold front in our northern counties, associated with a bubble high. But as the high moved east of the CWA, very strong west to northwest winds returned through sunset. Forecast soundings from across the region indicated the potential for a deep and well mixed boundary layer to mix extremely high wind gusts from roughly 600mb to the surface in the afternoon of the 4th. Observed soundings from nearby stations the morning of, and shortly after the event showed this deep boundary layer indeed did occur.

Hail

The NCDC records any hail events with hailstones that are .75 inch or larger in diameter, or any hail of a smaller diameter which causes property and/or crop damage, or casualties. **FIGURE 56** maps the historical hail events in the county.

FIGURE 56 HISTORICAL HAIL EVENTS

Niobrara County - Historical Hail Events



Data Source: WY State Geological Survey, WYGISC, WY Geospatial Hub, NOAA SVRGIS (April 2023). Date: 9/18/2023.

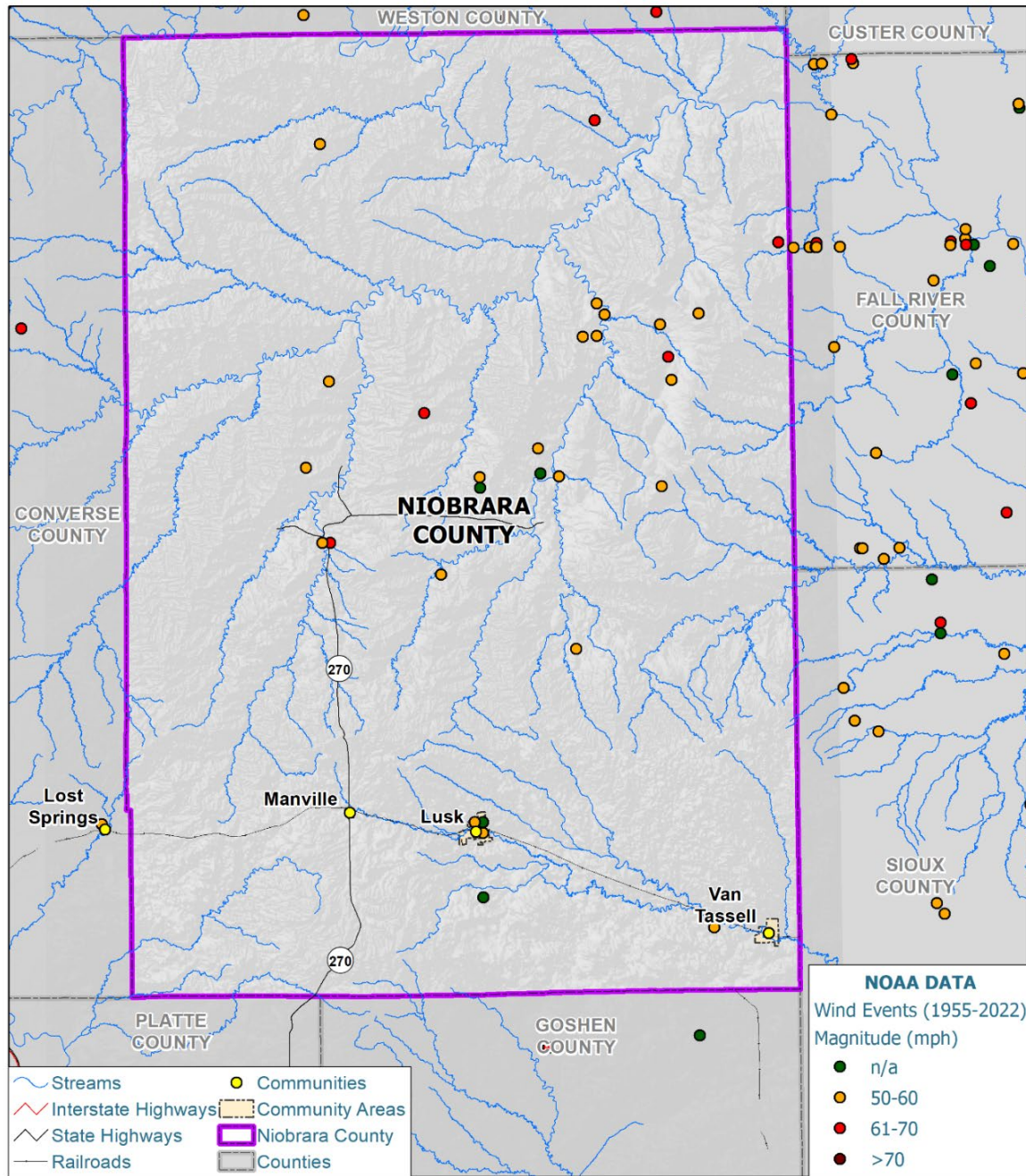


Wind

There have been numerous wind historical wind events in Niobrara County which are mapped in **FIGURE 57**.

FIGURE 57 HISTORICAL WIND EVENTS

Niobrara County - Historical Wind Events



Data Source: WY State Geological Survey, WYGISC, WY Geospatial Hub, NOAA SVRGIS (April 2023).
Date: 9/18/2023.

Tornado

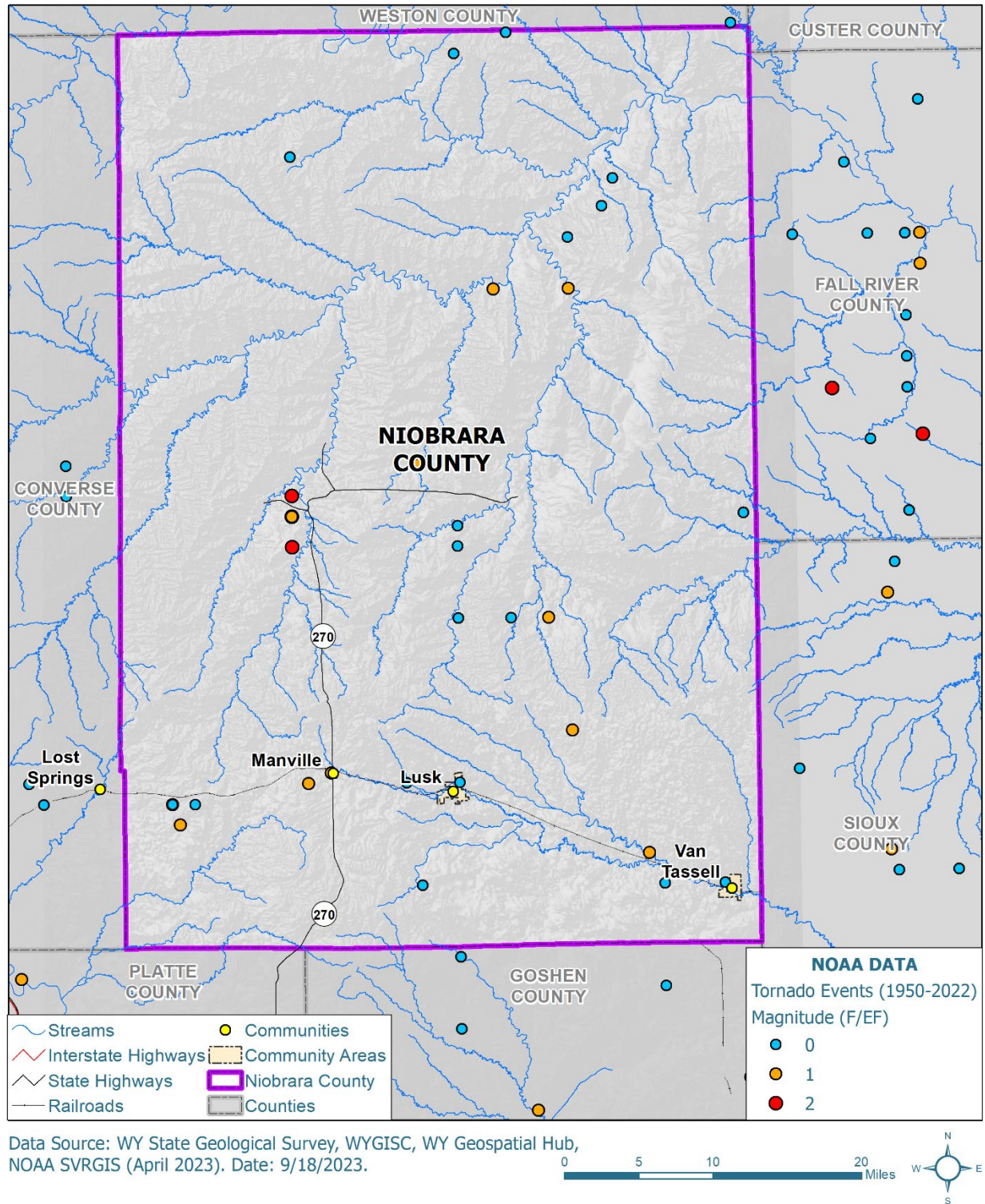
TABLE 184 details the sixteen tornado events in Niobrara County from 1952 to 1985. Furthermore, historical tornado events in the county are mapped in **Figure 58**.

Table 184 Notable Tornado Events

Date	Fujita Scale	Injuries	Property Damages
May 8, 1952	F1	0	\$30
June 11, 1953	F1	0	\$2,500
May 24, 1960	F1	1	\$25,000
June 26, 1960	F1	0	\$2,500
July 17, 1962	F1	0	\$25,000
April 12, 1976	F1	0	\$25,000
July 28, 1978	F2	0	\$250,000
August 1, 1979	F0	0	\$25,000
June 5, 1982	F2	3	\$250,000
June 20, 1983	F1	0	\$30
June 13, 1984	F1	0	\$25,000
June 13, 1984	F1	0	\$25,000
June 13, 1984	F1	0	\$25,000
June 13, 1984	F2	1	\$250,000
July 26, 1985	F0	0	\$2,500
July 26, 1985	F0	0	\$2,500

Figure 58 Niobrara County Historical Tornado Events

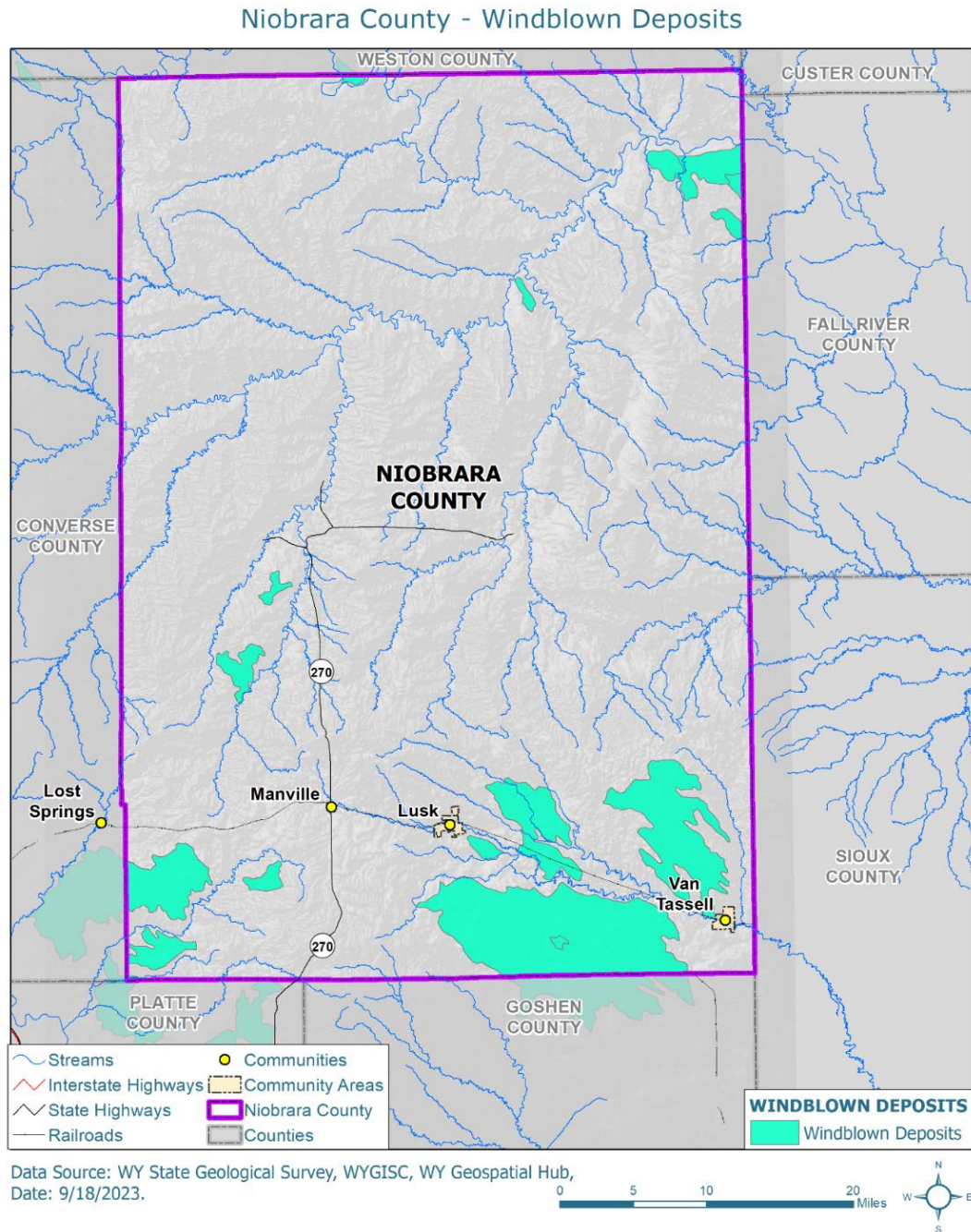
Niobrara County - Historical Tornado Events



LOCATION

Severe Weather events can happen anywhere in the county. Mapped in **Figure 59** are the areas of windblown deposits across the county.

Figure 59 Niobrara County Windblown Deposits



EXPOSURE AND VULNERABILITY

Lifelines

Thunderstorm and Lightning

Communication, Energy, Food, Hydration, and Shelter, and Transportation are the community lifelines most vulnerable to the impacts from a thunderstorm and lightning event. A large-scale power outage resulting from a storm could stress some systems.

Hail

All infrastructure Lifelines are exposed to risks associated with hail. Energy and Communications infrastructure could be damaged. Transportation could be impacted if hail causes accidents, and injuries or deaths. Hail can also have significant impacts on Communication and Energy, as hailstorms can cut power and damage lines of communication to communities, by causing damage to power grids, power lines, and cell towers.

Wind

There are no lifeline points located in mapped windblown deposit areas.

Tornado

All Lifelines are exposed to tornadoes. The most common problems associated with this hazard are utility losses, which falls under the Energy and Communications Lifeline. Downed power lines can cause blackouts, leaving large areas isolated. Phone, water, and sewer systems may not function. Communication infrastructure may be affected by an event, creating issues with dispatching first responders, keeping the public informed, and requesting aid and supplies.

Tornadoes can cause significant damage to trees and power lines. The Transportation Lifeline can be impacted if debris caused by tornadoes blocks roads, incapacitates transportation corridors, isolates populations, and disrupts ingress and egress. Of particular concern are roads providing access to isolated areas and to those with access and functional needs (AFN).

Any facility that is in the path of a tornado is likely to sustain damage and medical or sheltering facilities sustaining damages could have cascading impacts for the community.

People

It can be assumed that the entire planning area is exposed severe weather events. Areas of greater exposure are where higher population densities exist. Certain areas experience more severe events due to geographic location and local weather patterns. Populations living at higher elevations, with large stands of trees or power lines may be more susceptible to wind damage and blackouts.

Populations with access and functional needs (AFN), including the elderly, those with low income, linguistically isolated populations, people with mobility issues, and residents living

in areas that are isolated from major roads may see more impacts from severe wind events. Power outages can be life threatening to those dependent on electricity for medical support. Isolation of these populations is a significant concern. Those working outdoors or recreating in the area are more vulnerable to severe weather events.

Structures

Thunderstorms and Lightning

All buildings are considered to be exposed to the thunderstorm and lightning hazards, but structures in poor condition or in particularly vulnerable locations (located on hilltops or exposed open areas) may risk the most damage. The frequency and degree of damage will depend on specific locations and the condition of the building. Building codes can help to mitigate damage from thunderstorm events, including using hail protective roof materials and strengthening of the common building component failure points.

Older buildings are often not retrofitted to newer building codes due to due cost and capacity, which is typically the case in rural areas where communities were built decades ago.

Lightning strikes can also damage county infrastructure such as power lines and cellphone towers.

Hail

All buildings are considered exposed to hail. Depending on size, hail can damage roofs, break windows, and tear up siding, all of which can lead to significant water damage. Hail also damages HVAC systems that are installed on the exterior of buildings and solar panels installed on roofs. Additionally, hail has the ability to cause damage to concrete, resulting in dents, cracks, and surface spalling that can occur on sidewalks and roads. Over time the damage caused by hail can wear down concrete, compromising its strength.

Wind

Niobrara County has 110 commercial, industrial, public, and residential buildings (109 of which are improved) that are in areas of windblow deposits detailed in **TABLE 185**. The total value of property exposed is \$20,308,953.

All infrastructure Lifelines are exposed to risks associated with severe winds. Those on higher ground may have increased exposure to wind damage and all are at risk of damage from falling trees. The most common problems associated with these events are loss of utilities. Downed power lines can cause blackouts, leaving large areas isolated and without communications. Failure of these systems would have cascading effects throughout the county.

All buildings are considered exposed to the high wind. Vulnerable structures such as those in poor condition or mobiles, or in often affected locations (located on hilltops or exposed open areas) may risk the most damage. The frequency and degree of damage will depend on specific locations and behavior of the winds.

Wind pressure can create a direct and frontal assault on a structure, pushing walls, doors, and windows inward. Conversely, passing currents can create lift and suction forces that act to pull building components and surfaces outward. The effects of winds are magnified in the upper levels of multi-story structures. As positive and negative forces impact the building's protective envelope (doors, windows, and walls), the result can be roof or building component failures and considerable structural damage.

Table 185 Structures Windblown Deposits

	Total Structure Count	Total Improved Structure Count	Total Structure Value	Estimated Content Value
Lusk	0	0	\$-	\$-
Manville	0	0	\$-	\$-
Van Tassell	0	0	\$-	\$-
Unincorporated	110	109	\$20,308,953	\$31,852,051
Commercial	9	8	\$3,932,948	\$7,865,896
Industrial	1	1	\$1,758,074	\$5,713,741
Residential	100	100	\$14,617,930	\$18,272,413
Total	110	109	\$20,308,953	\$31,852,051

Tornado

Any structure that is in the path of a tornado is likely to sustain damage and medical or sheltering facilities sustaining damages could have cascading impacts for the community. All property is vulnerable during tornado events, but properties in poor condition or manufactured housing are at the highest risk.

Natural, Historic, and Cultural Resources

Natural habitats risk major damage and destruction from hail. Large hail has the potential to damage vegetation, tree canopy, and harm animals. Crop yields can be significantly reduced in the event of a hailstorm, and farmers will also experience damage to their physical equipment. Large hail has the possibility to cause significant bruising, injury, and even death to livestock and wild animals, disrupting agricultural yields and natural ecosystems.

Hail also can cause major damage to, and destruction of, historical buildings. Large hail can break slate and tile roofing, shatter windows, and dent copper flashings causing irreparable damage to historical buildings. Additionally, this damage can allow water to enter the building and its foundations causing water damage, but also under freezing temperatures will expand once frozen causing further fissures to the structure of a building.

Lightning strikes can be destructive to the natural resources of a community. Strikes can hit trees with the potential to cause wildfires. A 2018 study by the EPA argues that lightning strikes can have negative impacts on air quality. Lightning strikes can also damage historical buildings that may not be able to be repaired.

Habitats may be exposed to tornado risk and an event could destroy critical components of these areas. If tornadoes impact facilities that store hazardous materials, the surrounding areas may be especially vulnerable to contamination from a hazardous materials release.

Severe winds can have tremendous impacts on the natural, historic, and cultural resources of a community. Strong winds can damage buildings, especially older historic buildings, and public community spaces, such as parks and public art. The environment is highly exposed to high wind. Natural habitats risk major damage and destruction. Severe winds can strip and uproot vegetation, affecting natural ecosystems and agricultural crop yields.

Local Vulnerability

Economic impact from severe weather events is possible, as damage to property, crops, and livestock may result in losses. Events with large hail, tornadoes, or lightning strikes have been known to cause the death of livestock and devastate crops, which can bring considerable losses to the local and regional economy.

In addition, disruption of Lifelines and daily operations due to damaged infrastructure and facilities can cause losses. Repairing, rebuilding, or replacing critical equipment may be a slow process which could have cascading effects on businesses and the local economy. Any extended delay of returning to normal functioning has the potential to close businesses and impact industry.

TABLE 186 provides additional vulnerability information identified by each local government.

Table 186 Local Government Vulnerability

Local Government	Local Vulnerability
Lusk	Impacts to evacuation routes and sheltering needs. Damage to water, sewer, power, and transportation infrastructure. Communication system (internet, cell, landline) impacts. Damages to historic buildings. Resulting impacts to local parks and recreation

Local Government	Local Vulnerability
	areas.
Manville	Impacts to evacuation routes and sheltering needs. Damage to water, sewer, and power infrastructure. Communication system (internet, cell, landline) impacts. Damages to historic buildings. Resulting impacts to local parks and recreation areas affecting community activities.
Van Tassel	Ingress/egress to elderly populations needing medical assistance. Damage to power and transportation infrastructure. Communication system (internet, cell, landline) impacts. Damages to historic buildings
Unincorporated County	Damage to utility infrastructure. Communication system (internet, cell, landline) impacts. Resulting impacts to recreation areas affecting community activities.

FUTURE TRENDS IN DEVELOPMENT

All future development can be affected by severe weather. The vulnerability across the county is increasing through time as more people move into the county. The ability to mitigate impacts lies in consistent enforcement of codes and regulations for new construction. Adherence to these building codes will ensure construction is more likely to withstand a severe weather event.

Public education is critical as new residents move to the area. Many may not have experienced the types of severe weather events seen in the county and will not know how to be prepared. Educating the population on these hazards and how to minimize risk from events will prove beneficial for the county.

TABLE 187 provides additional information identified by each local government.

Table 187 Local Government Population Trends

Local Government	Local Population Trends
Lusk	No population change has recently occurred, or is expected, which would impact hazard vulnerability.
Manville	No population change has recently occurred, or is expected, which would impact hazard vulnerability.
Van Tassel	No population change has recently occurred, or is expected, which

Local Government	Local Population Trends
	would impact hazard vulnerability.
Unincorporated County	Population in the unincorporated areas of the county did not increase, nor are major increases expected in the future. Overall vulnerability has not increased, nor is expected to, due to development.

PROBABILITY OF FUTURE OCCURRENCES

The NOAA Storm Events database Has recorded 71 severe weather events in the 73 years between 1950 and 2023, meaning there is an 90% chance of a severe weather event occurring annually.

Wind events will also continue in the future with 5 events happening since 1950, there is 6% annual chance of a wind event.

There have been sixteen notable tornadoes since 1950, which equates to a 21% annual chance.

WILDFIRE

PREVIOUS OCCURRENCES

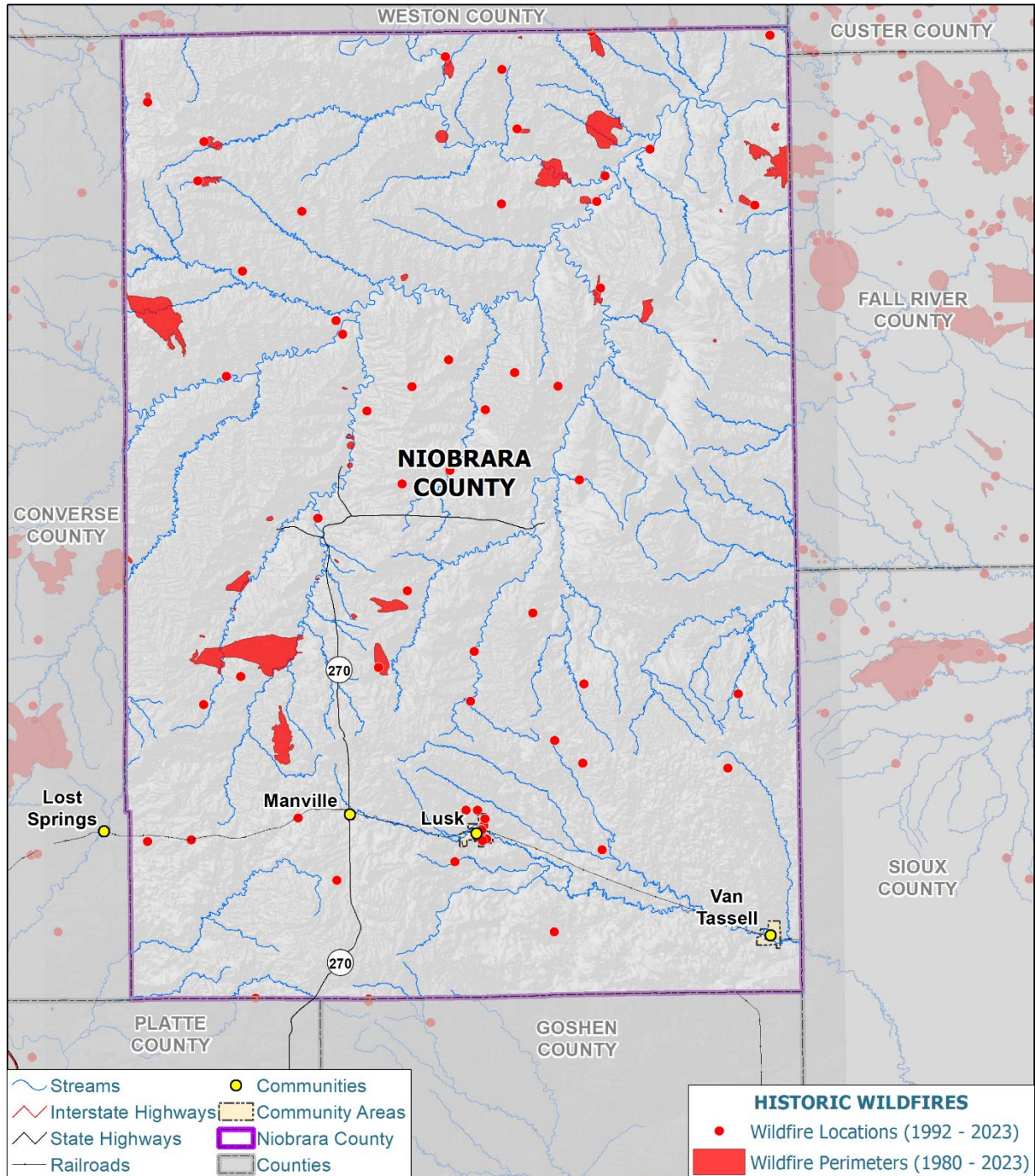
Since 1980, Niobrara County has experienced numerous wildfire events, outlined in **TABLE 188** and **FIGURE 60** maps the historic wildfires in the county. The cause of these events are both human and natural.

Table 188 Wildfire Events Over 1,000 Acres

Date	Name	Acres Burned
2012	Moss Agate	4304
2007	77 Hill	1741
2011	Smith	2201
2010	Cooley Draw	6107
2012	MOSS AGATE	4300
2011	Manning	2512
2011	Cheyenne River	1545

Figure 60 Historic Wildfires

Niobrara County - Historic Wildfires



Data Source: National Interagency Fire Center (Oct. 2023),
WY State Geological Survey, WYGISC, WY Geospatial Hub,
Date: 10/11/2023.



LOCATION

FIGURE 61 illustrates the wildfire risk across Niobrara County additionally, **Figure 62** shows the scale of wildfire intensity across the county.

Figure 61 Wildfire Risk Areas

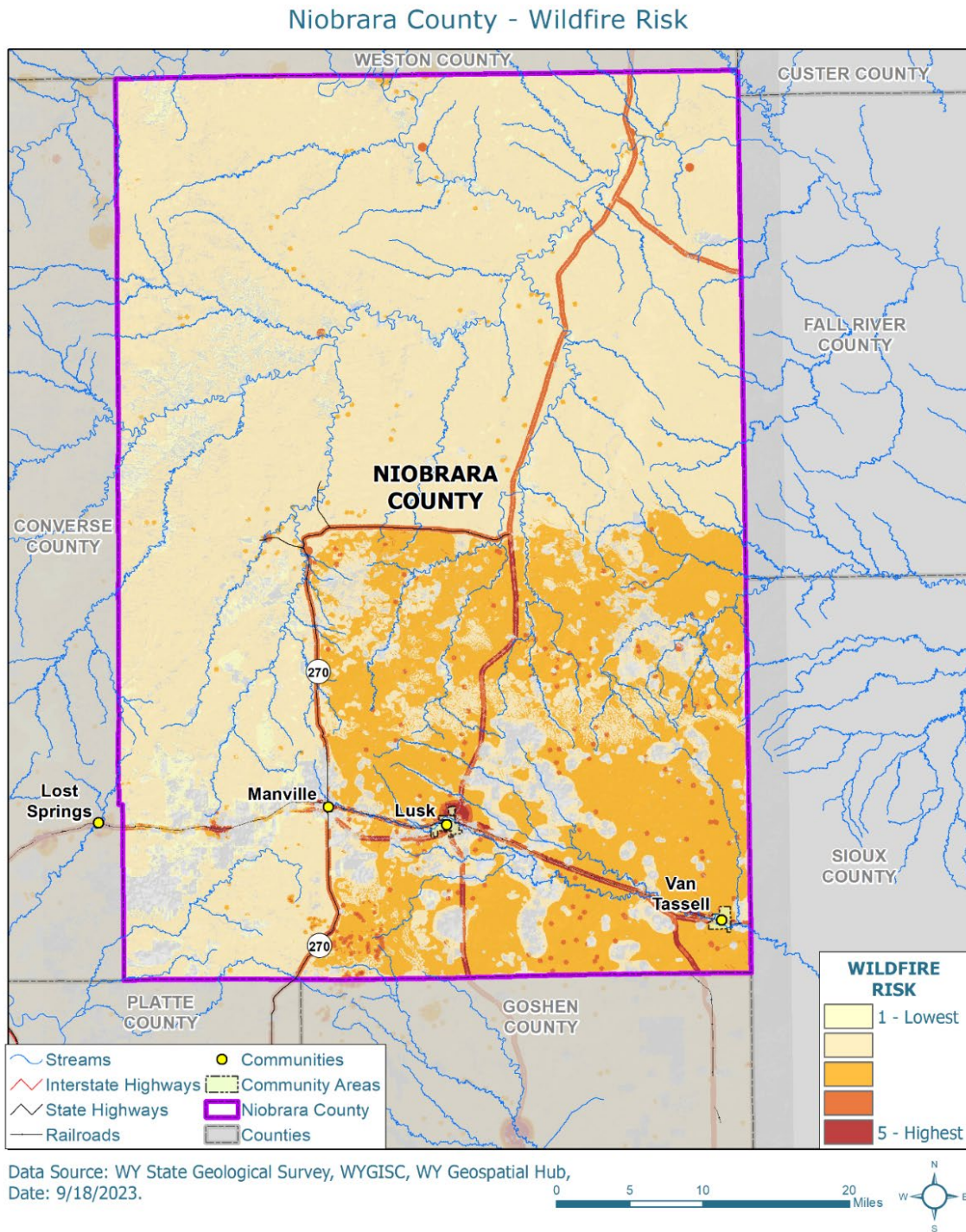
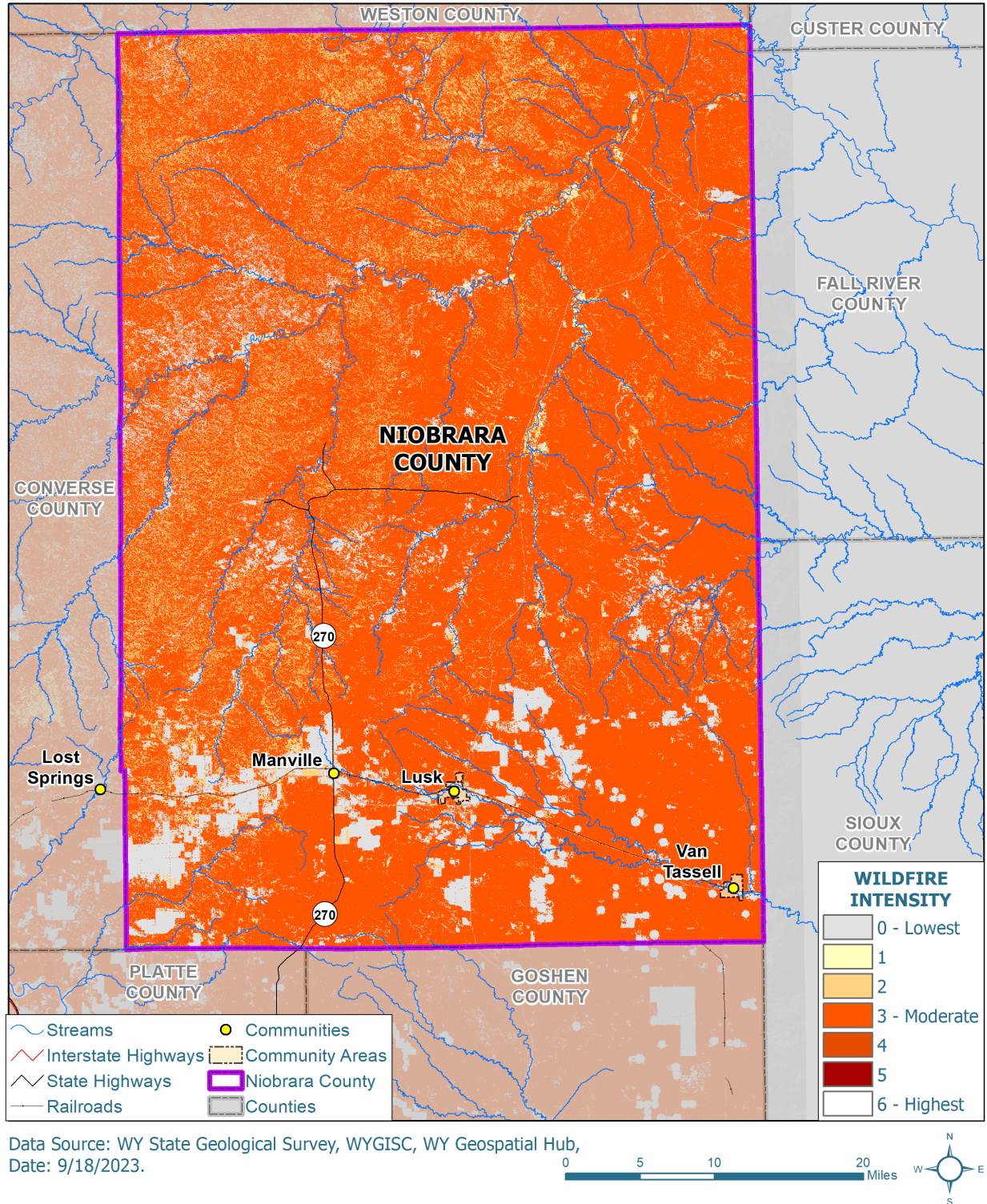


Figure 62 Wildfire Intensity

Niobrara County - Wildfire Intensity



EXPOSURE AND VULNERABILITY

Lifelines

All community Lifelines across Niobrara County are vulnerable to the impacts from wildfire events. Multiple Lifelines are at risk due to wildfire, from a structural standpoint as well as resource management. While large-scale fires are rare for the county, each fire can tax countywide resources, impacting public safety and government services. Fires can create conditions that block or prevent ingress / egress and can isolate residents and emergency service providers.

Energy infrastructure can be impacted as power line poles are made of wood and susceptible to burning. Pipelines carrying fuel can be damaged, potentially leading to a catastrophic explosion and interruption of resource delivery. Any Lifeline infrastructure with wood frame construction is especially vulnerable during wildfire events. Most roads and railroads would be without damage except in the worst scenarios.

Health & Medical services as well as Food, Water, & Shelter may be impacted if there is a need to evacuate the public and citizens or first responders need medical care. The lifelines that are in low and moderate wildfire risk are presented in **TABLE 189**.

Table 189 Lifelines in Low and Moderate Wildfire Intensity Areas

Lifeline	Lusk	Manville	Van Tassell	Unincorporated	Total
Low					
Communications	-	-	-	-	0
Energy	-	-	-	-	0
Energy (Miles)	-	-	-	-	0
Food, Hydration, & Shelter	-	-	-	-	0
Health & Medical	-	-	-	-	0
Safety & Security	-	-	-	-	0
Transportation	1	-	-	9	10
Transportation (Miles)	-	0.1	-	10.5	10.6
Moderate					
Communications	-	-	-	-	0

Life Line	Lusk	Manville	Van Tassell	Unincorporated	Total
Energy	-	-	-	-	0
Energy (Miles)	-	-	-	-	0
Food, Hydration, & Shelter	1	-	-	1	2
Health & Medical	-	-	-	-	0
Safety & Security	-	-	-	-	0
Transportation	1	-	-	35	36
Transportation (Miles)	0.8	0.5	0.5	81.7	83.5

People

Smoke and air pollution from wildfires can be a severe health hazard, especially for sensitive populations, including children, the elderly, and those with respiratory and cardiovascular diseases. Smoke generated by wildfire consists of visible and invisible emissions that contain particulate matter (soot, tar, water vapor, and minerals), gases (carbon monoxide, carbon dioxide, nitrogen oxides), and toxics (formaldehyde, benzene). Emissions from wildfires depend on the type of fuel, the moisture content of the fuel, the efficiency (or temperature) of combustion, and the weather. Public health impacts associated with wildfire include difficulty in breathing, odor, and reduction in visibility.

Wildfire may also threaten the health and safety of those fighting the fires. First responders are exposed to the dangers from the initial incident and the after-effects from smoke inhalation and heat stroke.

A report titled: 'Ahead of the Fire: Where will the West's next deadly wildfire strike? The risks are everywhere.' was published in The Arizona Republic in the summer of 2019. The study, spurred by the devastating Paradise Fire in California, looked across 5,000 small communities throughout 11 states to determine wildfire risk.

Structures

TABLE 190 summarizes the building exposure to wildfire risk by jurisdiction. The data classifies wildfire risk ranging from one to five, with five equating to the most statewide risk. Within each jurisdiction, residential properties comprise the majority of buildings exposed to moderate wildfire risk. The total value of properties exposed to wildfire risk is \$814,322,347. While this analysis attempts to quantify those structures at most risk across the county, it should be noted that all property is potentially vulnerable to wildfire.

Table 190 Structures in Moderate Wildfire Intensity Areas

	Total Structure Count	Total Improved Structure Count	Total Structure Value	Estimated Content Value
Lusk	409	409	\$89,730,065	\$152,565,665
3				
Commercial	36	36	\$25,368,930	\$51,208,895
Industrial	7	7	\$8,787,124	\$27,729,550
Public	5	5	\$5,546,274	\$11,092,548
Residential	361	361	\$50,027,736	\$62,534,670
Manville	39	39	\$10,179,055	\$16,774,211
3				
Commercial	2	2	\$2,340,592	\$4,681,184
Industrial	1	1	\$423,733	\$1,059,333
Public	1	1	\$2,353,708	\$4,707,416
Residential	35	35	\$5,061,022	\$6,326,277
Van Tassell	16	16	\$2,487,612	\$3,109,516
3				
Residential	16	16	\$2,487,612	\$3,109,516
Unincorporated	769	754	\$149,234,770	\$234,711,780
3				
Commercial	43	42	\$27,399,717.95	\$54,936,437.33
Industrial	13	12	\$13,602,221	\$42,719,287

	Total Structure Count	Total Improved Structure Count	Total Structure Value	Estimated Content Value
Public	4	4	\$2,353,355	\$4,706,710
Residential	707	694	\$105,706,197	\$132,132,747
4				
Residential	2	2	\$173,278	\$216,597
Total	2,466	2,436	\$503,263,010	\$814,322,347

Natural, Historic, and Cultural Resources

In addition to stripping the land of vegetation and destroying forest resources, large, intense fires can harm the soil, waterways, and the land itself. Soil exposed to intense heat may lose its capability to absorb moisture and support life. Exposed soils erode quickly and enhance siltation of waterways; thereby enhancing flood potential, harming aquatic life, and degrading water quality. Lands stripped of vegetation are also subject to increased debris flow.

Fire is a natural and critical ecosystem process in most terrestrial ecosystems, dictating in part the types, structure, and spatial extent of native vegetation. However, wildfires can cause severe environmental impacts:

- **Damaged Fisheries** – Critical fisheries can suffer from increased water temperatures, sedimentation, and changes in water quality.
- **Soil Erosion** – The protective covering provided by foliage and dead organic matter is removed, leaving the soil fully exposed to wind and water erosion. Accelerated soil erosion can occur, causing landslides and threatening aquatic habitats.
- **Spread of Invasive Plant Species** – Non-native woody plant species frequently invade burned areas. When weeds become established, they can dominate the plant cover over broad landscapes, and become difficult and costly to control.
- **Disease and Insect Infestations** – Unless diseased or insect-infested trees are swiftly removed, infestations and disease can spread to healthy forests and private lands. Timely active management actions are needed to remove diseased or infested trees.
- **Destroyed Endangered Species Habitat** – Catastrophic fires can have devastating consequences for endangered species.

- **Soil Sterilization** – Topsoil exposed to extreme heat can become water repellant, and soil nutrients may be lost. It can take decades or even centuries for ecosystems to recover from a fire. Some fires burn so hot they can sterilize the soil.

Many ecosystems are adapted to historical patterns of fire occurrence. These patterns, called “fire regimes,” include temporal attributes (e.g., frequency and seasonality), spatial attributes (e.g., size and spatial complexity), and magnitude attributes (e.g., intensity and severity), each of which have ranges of natural variability. Ecosystem stability is threatened when any of the attributes for a given fire regime diverge from its range of natural variability.

Local Vulnerability

Wildfire can impact the economy due to potential damage to property, crops, and livestock. There may be direct costs due to losses and indirect costs for the loss of work that comes from harvest and livestock transport. Overhead that may result during repair or reconstruction of properties may also be an indirect cost.

If roads are closed or areas are evacuated due to a fire, transport may be limited, and businesses may have to close. While this can typically be a short-term impact, prolonged wildfires can have a large impact on the operations of a community and its economy.

TABLE 191 provides additional vulnerability information identified by each local government.

Table 191 Local Government Vulnerability

Local Government	Local Vulnerability
Lusk	Impacts would affect community housing and infrastructure. Impacts to evacuation routes and sheltering needs. Communication system (internet, cell, landline) impacts. Resulting impacts to local parks and recreation areas.
Manville	Impacts would affect community housing and infrastructure (water wells). Communication system (internet, cell, landline) impacts. Damages to historic buildings.
Van Tassel	Impacts would affect ingress/egress evacuation challenges and power infrastructure. Communication system (internet, cell, landline) impacts. Damages to historic buildings.
Unincorporated County	Impacts would affect ingress/egress evacuation challenges and power infrastructure. Communication system (internet, cell, landline) impacts. Resulting impacts to recreation areas.

FUTURE TRENDS IN DEVELOPMENT

As some of these areas are at a higher risk to wildfire and located in the WUI, future development has the potential to greatly increase the risk to this hazard.

While the risk of wildfire on public land is generally understood, much of the adjacent private land is equally at risk. Private lands adjoining public lands are becoming increasingly valued for their scenic beauty, solitude, and access to recreation opportunities. As development in these areas continue to increase, the risk to lives, property, and resources correspondingly increases.

TABLE 192 provides additional information identified by each local government.

Table 192 Local Government Population Trends

Local Government	Local Population Trends
Lusk	No population change has recently occurred, or is expected, which would impact hazard vulnerability.
Manville	No population change has recently occurred, or is expected, which would impact hazard vulnerability.
Van Tassel	No population change has recently occurred, or is expected, which would impact hazard vulnerability.
Unincorporated County	Population in the unincorporated areas of the county did not increase, nor are major increases expected in the future. Overall vulnerability has not increased, nor is expected to, due to development.

PROBABILITY OF FUTURE OCCURRENCES

Wildfires are likely to occur in the region, as small fires happen every year. In the 40 years between 1980 and 2023, there have been 7 wildfire events, meaning that each upcoming year there is a 16% chance of wildfire event annually.

The greater concern is these fires growing quickly and damaging more acreage. With drought experienced often throughout the region, the weather getting hotter for longer durations, and an abundance of fuel, especially beetle kill pine trees, fires have the potential to occur easily and spread rapidly before they are spotted. Since fires can be human caused, lightning ignited, or the possibility of forest management activities getting out of control, there are numerous ways an accident or random occurrence could ignite a conflagration.

WINTER STORM

PREVIOUS OCCURRENCES

There have been numerous severe winter weather events in Niobrara County, however none of these events have resulted in damages or direct deaths and/ or injuries. There was a state emergency declared for snow removal from a 2008 event.

LOCATION

Severe winter weather events occur across the entire county.

EXPOSURE AND VULNERABILITY

Lifelines

Severe winds, downed trees, and ice accumulation can create serious impacts on Energy and Communications infrastructure, including power lines and above-ground communication lines. Transportation Lifeline failures, due to loss and interruption of roadway capacity, are a secondary hazard often most associated with severe winter weather.

People

The populations most likely to suffer the negative effects of severe winter weather events are motorists who may be stranded, those participating in outdoor recreation activities, and those with AFN.

AFN populations face isolation and exposure during severe winter weather events and could suffer more secondary effects of the hazard. Power outages can be life threatening to those dependent on electricity for medical equipment and those sensitive to temperature extremes.

The use of fuel-burning heaters indoors and the potential of poisoning and asphyxiation also poses a significant risk to the population of the county.

Low income and residents living below the poverty line are susceptible to the impacts of severe winter weather. For these community members, heating in the case of extreme cold temperatures can be financially inaccessible. Additionally, residents may not have the option to remain at home during an extreme winter weather event and can place themselves in danger traveling on dangerous road conditions.

Furthermore, those in the community who do not have access to a vehicle and rely on public transportation can be vulnerable to health impacts of extreme cold temperatures as well as the possibility of hazardous road conditions while using public transportation.

Structures

The freezing of structure water lines, and resulting breaks and flooding, is one of the most damaging impacts from severe cold spells. Freezing of power and communication lines can cause them to break, disrupting electricity and communication. Loss of electricity and

phone connection would leave certain populations isolated, as residents would be unable to call for assistance. Extreme cold can disrupt or impair communications facilities.

Primary transportation failures, due to loss and interruption of roadway capacity, are a secondary hazard often most associated with severe winter weather. Roads may become impassable due to ice or snow accumulation which create dangerous driving conditions. Availability of county roads to move people and supplies throughout the region is also a concern.

These types of events can significantly impact the transportation system and the availability of public safety services. Of particular concern are roads providing access to isolated areas and to those with access and functional needs (AFN). Prolonged obstruction of major routes can disrupt the shipment of goods and other commerce.

All buildings in the county are exposed to severe winter weather, but structures in poor condition or in particularly vulnerable locations (located on hilltops or exposed open areas) may risk the most damage. Those that are located under or near overhead lines, or near large trees may be vulnerable to falling ice or may be damaged in the event of a tree or limb collapse. The frequency and degree of damage will depend on specific locations.

Natural, Historic, and Cultural Resources

Natural habitats risk major damage and destruction from severe winter weather. Heavy snowfall and high winds can collapse trees. Freezing temperatures can kill crops, vegetation, and animals. Mass die offs of wildlife are possible as snow covers vegetation and freezes as temperatures drop. These events alter the ecosystem and hunting quotas in the following season. Livestock are also vulnerable to severe winter weather without proper shelter.

Local Vulnerability

Negative economic impact from severe winter weather is possible. Damage to property, crops, and livestock can result in costs, both direct and indirect. Direct costs for the value lost and indirect costs for the loss of work that comes from harvest and livestock transport, as well as the overhead that may result during repair or reconstruction of properties.

Short term impacts may occur if roads and businesses must close, affecting transport and commerce which can have a negative effect for an entire region. **TABLE 193** provides additional vulnerability information identified by each local government.

Table 193 Local Government Vulnerability

Local Government	Local Vulnerability
Lusk	Event impacts would put residential power and heating at risk. Utility and communications infrastructure damages resulting in loss of service.

Local Government	Local Vulnerability
Manville	Event impacts would put residential power and heating at risk, as many rely on propane and wood delivery. Utility and communications infrastructure damages resulting in loss of service. Damages to historic buildings.
Van Tassel	Event impacts would put residential power and heating at risk, as many rely on propane and wood delivery. Utility and communications infrastructure damages resulting in loss of service.
Unincorporated County	Event impacts would put residential power and heating at risk, as many rely on propane and wood delivery. Utility and communications infrastructure damages resulting in loss of service. Ability to keep roads plowed and accessible.

FUTURE TRENDS IN DEVELOPMENT

All future development can be affected by severe winter weather events. The county's vulnerability is increasing through time as the population increases. The ability to mitigate impacts lies in consistent enforcement of codes and regulations for new construction.

Public education is critical as new residents move to the area. Many may not have experienced the severity of winter weather events seen in the county and will not know how to be prepared. Educating the population on these hazards and how to minimize risk from events will prove beneficial for the county.

TABLE 194 provides additional information identified by each local government.

Table 194 Local Government Population Trends

Local Government	Local Population Trends
Lusk	No population change has recently occurred, or is expected, which would impact hazard vulnerability.
Manville	No population change has recently occurred, or is expected, which would impact hazard vulnerability.
Van Tassel	No population change has recently occurred, or is expected, which would impact hazard vulnerability.
Unincorporated County	Population in the unincorporated areas of the county did not increase, nor are major increases expected in the future. Overall vulnerability has not increased, nor is expected to, due to

Local Government		Local Population Trends	
			development.

PROBABILITY OF FUTURE OCCURRENCES

In the 73 years between 1950 and 2023 there have been 96 winter storm events in the county, which means there is a 100% chance of a severe weather event annually.

EARTHQUAKE HAZUS RISK REPORT

ADOPTIONS

APPENDIX A: FEMA APPROVAL

APPENDIX B: HAZARD MITIGATION PLANNING COMMITTEE

An asterisk (*) indicates individuals that directly participated in planning workshops as part of this project.

Table 195 HMPC Roster

County	Name	Title	Organization	Org. Type
All	Ashley Paulsrud*	Grants / Finance Section Chief	WOHS	State Entities: WY Office of Homeland Security (WOHS)
All	Jeff Brislawn	Planning Consultant	WSP	Other: Other
All	Joe Ruess	Safety of Dams Engineer	WY State Engineer's Office	State Entities: WY State Engineer's Office
All	Michael Garner*	Planning Consultant	Synergy Disaster Recovery	Other: Other
All	Steven Ammons	FEMA Integration Team Lead	FEMA	Other: Other
Converse	Ada Karl	Regulatory Compliance Specialist	Holly Energy Partners	Other: Regional Stakeholders
Converse	Adam Alvarado*	Captain	Converse County Sheriff's Office	Community Sectors: Emergency Management
Converse	Allan Berge	H&S Manager - Midstream WY - UT	Occidental Petroleum Corp	Other: Regional Stakeholders
Converse	Amber George	Deputy Clerk	Rolling Hills	Other: Regional Stakeholders

County	Name	Title	Organization	Org. Type
Converse	Andrea Dvorak	Environmental Specialist	Tallgrass Energy	Other: Regional Stakeholders
Converse	Andrew Winney	Specialist, Senior HSE	Continental Resources, Inc.	Other: Regional Stakeholders
Converse	Anna McClure*	Administrative Assistant	LaPrele Irrigation District	Community Sectors: Land Use & Development
Converse	Anthony Rivera	Council Member	Rolling Hills	Community Sectors: Elected Leadership
Converse	Art Stringham*	Single Resident in Town	Lost Springs	Community Sectors: Public
Converse	Artie Schubert*	Surveyor	Converse County	Community Sectors: Land Use & Development
Converse	Ashley Byerly	Manager	Converse County Joint Communications	Community Sectors: Infrastructure (Lifelines)
Converse	Ben Bigalke	Field Manager	BLM - Casper Office	Other: Federal Land Owners
Converse	Blake Palmer*	Public Works Supervisor - Streets & Alleys	Douglas	Community Sectors: Infrastructure (Lifelines)
Converse	Bob Fenton*	Gas Transmission Representative	Tallgrass Energy	Other: Regional Stakeholders
Converse	Brandon Frye*	Parks Director	Douglas	Community Sectors: Natural

County	Name	Title	Organization	Org. Type
				& Cultural Resources
Converse	Bruce Roumell	Mayor	Glenrock	Community Sectors: Elected Leadership
Converse	Chauna Nugent	Council Member	Rolling Hills	Community Sectors: Elected Leadership
Converse	Chris Caskey*	Tech Servies Director	Converse County IT	Community Sectors: Management
Converse	Chris Hinton*	Deputy Treasurer	Converse County Treasurer's Office	Community Sectors: Economic Development
Converse	Christina Smith*	Caretaker	Ayres Natural Bridge	Community Sectors: Natural & Cultural Resources
Converse	Chuck Bayne	Director	WY Law Enforcement Academy (WLEA)	State Entities: Other
Converse	Clara Chaffin*	Community Development Director	Douglas	Community Sectors: Land Use & Development
Converse	Clint Becker*	Sheriff	Converse County Sheriff's Office	Community Sectors: Emergency Management
Converse	Cody Bish	Game Warden	WY Game & Fish - Casper	State Entities: Other

County	Name	Title	Organization	Org. Type
			Regional Field Office	
Converse	Cole Daniel	Emergency Manager	Devon Energy	Other: Regional Stakeholders
Converse	Coley Shadrick	Superintendent	CCSD#2	Community Sectors: Education
Converse	Colter Felton	Chief	Glenrock Police Department	Community Sectors: Emergency Management
Converse	Contact	Newspaper	Douglas Budget / Glenrock Independant	Community Sectors: Other
Converse	Crimson Miller*	Administrative Assistant	Converse County Road and Bridge	Community Sectors: Infrastructure (Lifelines)
Converse	Darcey Cowardin*	County Nurse Manager / Administrator	Converse County Public Health	Community Sectors: Health & Social Services
Converse	David King*	Emergency Management Coordinator	Campbell County	Community Sectors: Emergency Management
Converse	Dawn Cerny	Environmental Analyst	Dave Johnson Power Plan / PacifiCorp / RMP	Other: Regional Stakeholders
Converse	Dennis Switzer	Station	KKTY Radio	Community Sectors: Public
Converse	Dixie Huxtable	Assessor	Converse County	Community Sectors:

County	Name	Title	Organization	Org. Type
				Management
Converse	Don Gushurst	Director	Converse County Maintenance	Community Sectors: Management
Converse	Donna Weaver	Council Member	Rolling Hills	Community Sectors: Elected Leadership
Converse	Endon Nelson	Damage Prevention Specialist	Plains All American Pipeline, Rockies	Other: Regional Stakeholders
Converse	Eric Rice*	Safety Specialist	Continental Resources, Inc.	Other: Regional Stakeholders
Converse	Gehrig Habershtock	Disaster Program Manager	American Red Cross of Wyoming	Other: Regional Stakeholders
Converse	Hayden Truscott	EHS Manager	Meritage Midstream	Other: Regional Stakeholders
Converse	Heidi McCullough	Board Member	Historic Preservation Commission	Community Sectors: Natural & Cultural Resources
Converse	J.D. Cox*	City Manager	Douglas	Community Sectors: Management
Converse	Jamie Sullivan	Administrative Assistant	Eastern Wyoming College	Community Sectors: Education
Converse	Jan Jolliffe	Library - County & Glenrock Branch	Converse County	Community Sectors: Public
Converse	Jared Sanders	Staff	Converse County	Community

County	Name	Title	Organization	Org. Type
			Maintenance	Sectors: Management
Converse	Jason Wilkinson	Superintendent	Converse County Road and Bridge	Community Sectors: Infrastructure (Lifelines)
Converse	Jeanie Wolford	HSSE Coordinator	Genesis Energy, LP	Other: Regional Stakeholders
Converse	Jeffrey Hankins	Manager HMEM Response	BNSF Railway	Community Sectors: Infrastructure (Lifelines)
Converse	Jeremy Patman	Environmental Health & Safety Advisor	Devon Energy	Other: Regional Stakeholders
Converse	Jeremy Richards	Representative	ONEOK	Other: Regional Stakeholders
Converse	Jerome Flores	Regulatory Comp. Pipeline / Terminals	Sinclair Pipeline Co.	Other: Regional Stakeholders
Converse	Jess Butler	Assistant Supervisor	Converse County Weed & Pest	Community Sectors: Land Use & Development
Converse	Jillian Sulley	Emergency Managent Supervisor	Devon Energy	Other: Regional Stakeholders
Converse	Jim Willox	Commissioner	Converse County	Community Sectors: Elected Leadership
Converse	Joel Schell*	Treasurer	Converse County Treasurer's	Community Sectors:

County	Name	Title	Organization	Org. Type
			Office	Underserved Communities & Socially Vulnerable Populations
Converse	John Choquette	Representative	Occidental Petroleum Corp	Other: Regional Stakeholders
Converse	John Harbarger*	Public Works Director	Douglas	Community Sectors: Infrastructure (Lifelines)
Converse	John Stearns*	Utilities Supervisor	Douglas	Community Sectors: Infrastructure (Lifelines)
Converse	John Vance*	Trooper, WHP 31	WY Highway Patrol	State Entities: Other
Converse	Johnna Shepherd*	Response Coordinator / LEPC Vice Chair	Converse County Public Health	State Entities: Other
Converse	Jon Brown	Regulatory Compliance Coordinator	Sinclair Pipeline Co.	Other: Regional Stakeholders
Converse	Jon Maines	Mayor	Rolling Hills	Community Sectors: Elected Leadership
Converse	Josh Oberland*	Supervisor - Water and WW Treatment	Douglas	Community Sectors: Infrastructure (Lifelines)
Converse	Judi Colling	Council Member	Glenrock	Community Sectors: Elected Leadership

County	Name	Title	Organization	Org. Type
Converse	Kaitlin Hasler*	District Conservationist, NRCS	Converse County Conservation District	Other: Federal Land Owners
Converse	Karen Rimmer	County Clerk	Converse County	Community Sectors: Management
Converse	Kate Allred	Emergency Coordinator	Albany County	Community Sectors: Emergency Management
Converse	Kelli Rogge	President	Douglas Care Center	Community Sectors: Underserved Communities & Socially Vulnerable Populations
Converse	Kelly Lewis	Treasurer	Glenrock	Community Sectors: Other
Converse	Ken Montgomery	Council Member	Rolling Hills	Community Sectors: Elected Leadership
Converse	Kim Gullickson*	Coordinator	Converse County Firewise Project	Community Sectors: Emergency Management
Converse	Kim Pexton	Mayor	Douglas	Community Sectors: Elected Leadership
Converse	Kristy Grant	Chamber of Commerce	Glenrock	Community Sectors: Economic Development

County	Name	Title	Organization	Org. Type
Converse	Laura Knollman	Sergeant	Glenrock Police Department	Community Sectors: Emergency Management
Converse	Lucile Taylor	Board Secretary	Converse Co Senior Citizens Special Services Dist.	Community Sectors: Underserved Communities & Socially Vulnerable Populations
Converse	Margaret Farley*	Director	Eastern Wyoming College	Community Sectors: Education
Converse	Margaret Nunn	Council Member	Glenrock	Community Sectors: Elected Leadership
Converse	Dr. Mark Campbell	County Health Officer	Memorial Hospital of Converse County	Community Sectors: Health & Social Services
Converse	Mark Pepper*	Executive Director	Wyoming Association of Rural Water (WRWA)	Community Sectors: Infrastructure (Lifelines)
Converse	Mary Nicol	Admin Director/ Treasurer	Douglas	Community Sectors: Management
Converse	Mary Schell*	Admin Assistant / LEPC Secretary, Treasurer	Converse County Emergency Management	Community Sectors: Emergency Management
Converse	Mary Woods	Safety and Health Specialist	Crestwood LP / Bucking Horse Gas Facility	Other: Regional Stakeholders

County	Name	Title	Organization	Org. Type
Converse	Matt Schmidt	Council Member	Douglas	Community Sectors: Elected Leadership
Converse	Melanie Cielinski*	Administrator	Glenrock Health Center	Community Sectors: Health & Social Services
Converse	Melissa Ohnstad	State Supervisor Public Health Nursing	WY Dept. of Public Health	State Entities: Other
Converse	Michelle Huntington*	District Manager	Converse County Conservation District	Community Sectors: Natural & Cultural Resources
Converse	Mike Colling	Commissioner	Converse County	Community Sectors: Elected Leadership
Converse	Mike Shoemaker	Environmental Specialist	Continental Resources, Inc.	Other: Regional Stakeholders
Converse	Nancy Fink	Director (former)	Douglas / Glenrock Senior Center	Community Sectors: Underserved Communities & Socially Vulnerable Populations
Converse	Nate Hughes*	Undersheriff	Converse County Sheriff's Office	Community Sectors: Emergency Management
Converse	Not currently staffed	Community Development Director	Glenrock	Community Sectors: Land Use & Development

County	Name	Title	Organization	Org. Type
Converse	Paige Hughes	Superintendent	CCSD#1	Community Sectors: Education
Converse	Pam McCullough	Clerk of District Court	Converse County	Community Sectors: Management
Converse	Patrick McGrew	SR Safety Specialist	Continental Resources, Inc.	Other: Regional Stakeholders
Converse	Perry Hersberger	Council Member	Douglas	Community Sectors: Elected Leadership
Converse	Phil Dziardziel*	Representative	La Prele Irrigation	Community Sectors: Infrastructure (Lifelines)
Converse	Quentin Richardson	County Attorney	Converse County	Community Sectors: Management
Converse	Ramona Moody	County Health Inspector	WY Dept. of Agriculture	State Entities: Other
Converse	Randy Rumpler	Public Works Director	Glenrock Police Department	Community Sectors: Emergency Management
Converse	Richard Shaw	Crew Leader	WYDOT	State Entities: Other
Converse	Rick Andrews*	Chief	Douglas Fire Department	Community Sectors: Emergency Management
Converse	Rick Grant	Commissioner	Converse County	Community

County	Name	Title	Organization	Org. Type
				Sectors: Elected Leadership
Converse	Rick Lopez	Training / Exercise Coord. / Safety Off.	WOHS	State Entities: WY Office of Homeland Security (WOHS)
Converse	Robert Brewer	Safety and Contractor Coordinator	Cameco Resources	Other: Regional Stakeholders
Converse	Robert Evenson	Ambulance Administrator	Memorial Hospital of Converse County	Community Sectors: Health & Social Services
Converse	Robert Short	Commissioner	Converse County	Community Sectors: Elected Leadership
Converse	Rod Lebert	Game Warden	WY Game & Fish - Casper Regional Field Office	State Entities: Other
Converse	Ron Blain*	Staff	Douglas Care Center	Community Sectors: Health & Social Services
Converse	Ron McNare	Council Member	Douglas	Community Sectors: Elected Leadership
Converse	Ross Gorman	Coroner	Converse County	Community Sectors: Health & Social Services
Converse	Russ Dalgarn*	Coordinator / LEPC Chairman	Converse County Emergency Management	Community Sectors: Emergency Management

County	Name	Title	Organization	Org. Type
Converse	Scott Mines*	Emergency Response Coordinator	Tallgrass Energy	Other: Regional Stakeholders
Converse	Shay Rogge	Zone Fire Management Officer	USFS	Other: Federal Land Owners
Converse	Shelly McAlpin	Executive Director	Serve Wyoming	Community Sectors: Underserved Communities & Socially Vulnerable Populations
Converse	Shon Lindsey*	Chief	Glenrock Fire Department	Community Sectors: Emergency Management
Converse	Stephanie Lund	Regional PH Nurse Supervisor	Converse County Public Health	Community Sectors: Health & Social Services
Converse	Tammy Taylor	Town Clerk	Glenrock	Community Sectors: Management
Converse	Teresa Montgomery*	Clerk / Treasurer	Rolling Hills	Community Sectors: Underserved Communities & Socially Vulnerable Populations
Converse	Terry Stevenson	Emergency Management Coordinator	Platte County	Community Sectors: Emergency Management

County	Name	Title	Organization	Org. Type
Converse	Tim Kalus	Manager, HSE	Continental Resources, Inc.	Other: Regional Stakeholders
Converse	Tim Morgan	Representative	Black Hills Energy / Source Gas Pipeline	Other: Regional Stakeholders
Converse	Todd Byerly*	Chief	Douglas Police Department	Community Sectors: Emergency Management
Converse	Todd Matthews*	Lieutenant	Douglas Police Department	Community Sectors: Emergency Management
Converse	Tom Reed	Rural Fire Warden	Fire Suppression Authority	Community Sectors: Emergency Management
Converse	Tory Walsh	Coordinator	Converse County Special Projects	Community Sectors: Management
Converse	Traves Smith*	Caretaker	Ayres Natural Bridge	Community Sectors: Natural & Cultural Resources
Converse	Trent Kaufman	Commissioner	Converse County	Community Sectors: Elected Leadership
Converse	Trevor Panasuk	Assistant Chief	Douglas Fire Department	Community Sectors: Emergency Management
Converse	Troy Gear	Sr. Safety and Health	ONEOK	Other: Regional

County	Name	Title	Organization	Org. Type
		Coordinator		Stakeholders
Converse	Wes Johnson	Safety Coordinator	Anschutz Exploration Corp.	Other: Regional Stakeholders
Natrona	Ada Kaser	Representative	HF Sinclair Refinery	Other: Regional Stakeholders
Natrona	Alex Colgan	EMS Director	Casper Fire Department	Community Sectors: Emergency Management
Natrona	Andrea Ladd*	Staff	Fremont County Emergency Management	Community Sectors: Emergency Management
Natrona	Andrew Zewislanski	Representative	Phillips 66	Other: Regional Stakeholders
Natrona	Anna Kinder	Director	Casper Natrona County Health Department	Community Sectors: Health & Social Services
Natrona	Anne Alarcon*	Risk Manager	Natrona County	Community Sectors: Land Use & Development
Natrona	Bill Gordon	Emergency Management Coordinator	Hot Springs County	Community Sectors: Emergency Management
Natrona	Bob Dundas	Environmental Coordinator	True Companies	Other: Regional Stakeholders
Natrona	Bob Fenton*	Supervisor	Tallgrass Energy	Other: Regional Stakeholders

County	Name	Title	Organization	Org. Type
Natrona	Brian Oliver*	Chief	Natrona County Fire Protection	Community Sectors: Emergency Management
Natrona	Brian Olsen	Area Manager	WY Game & Fish	State Entities: Other
Natrona	Bruce Knell	Mayor	City of Casper	Community Sectors: Elected Leadership
Natrona	Bruce Martin	Manager	Casper Public Utilities	Community Sectors: Infrastructure (Lifelines)
Natrona	Bryon Preciado	Chief	Mills Police Department	Community Sectors: Emergency Management
Natrona	Cam Siplon	Deputy Chief	Casper Fire Department	Community Sectors: Emergency Management
Natrona	Cari Hacking	Trauma Coordinator	Banner Health Wyoming Medical Center	Community Sectors: Health & Social Services
Natrona	Carley Applegate	Owner	Epsilon Health Solutions	Community Sectors: Health & Social Services
Natrona	Carter Napier	City Manager	City of Casper	Community Sectors: Management
Natrona	Casey Coates	Emergency Manager	City of Mills	Community Sectors: Emergency

County	Name	Title	Organization	Org. Type
				Management
Natrona	Chad Edwards	Mayor	Evansville	Community Sectors: Elected Leadership
Natrona	Chase Lane	Engine Captain	Bureau of Land Management	Other: Federal Land Owners
Natrona	Chris Cody*	Public Health Response Coordinator	Casper Natrona County Health Department	Community Sectors: Health & Social Services
Natrona	Chris Dresang	Safe Schools Director	Natrona County School District	Community Sectors: Education
Natrona	Christopher Lorenzen	Director of Public Relations	Casper College	Community Sectors: Education
Natrona	Christopher Poe	Outreach Specialist	Veterans Administration	Other: Other
Natrona	Clemons Brandon	Enserv Solutions	Representative	Other: Large Employers
Natrona	Craig Post	Service Manager	Communications Technology, Inc.	Community Sectors: Infrastructure (Lifelines)
Natrona	Curtis Davis*	Coordinator	Casper Reentry Center	Community Sectors: Underserved Communities & Socially Vulnerable Populations
Natrona	Daelyn Barker*	HR Generalist	Summit Medical	Community Sectors: Health

County	Name	Title	Organization	Org. Type
			Center	& Social Services
Natrona	Dallas Laird	Commissioner	BOCC	Community Sectors: Elected Leadership
Natrona	Dan Kittinger	Director of Operations	Casper/Natrona County International Airport	Community Sectors: Infrastructure (Lifelines)
Natrona	Dave Matthews	Director of Emergency Shelter Services	Central Wyoming Rescue Mission	Community Sectors: Underserved Communities & Socially Vulnerable Populations
Natrona	Dave North*	Commissioner	BOCC	Community Sectors: Elected Leadership
Natrona	David Hulshizer	Director	Youth Crisis Center	Community Sectors: Underserved Communities & Socially Vulnerable Populations
Natrona	David Stringham	Damage Prevention	Kinder Morgan Pipeline	Other: Regional Stakeholders
Natrona	Duane Rust	Representative	Holly Energy Partners	Other: Regional Stakeholders
Natrona	Enden Nelson	Damage Prevention Specialist	Plains All American Pipeline	Other: Regional Stakeholders
Natrona	Erica Ketchum	Representative	Casper	Community

County	Name	Title	Organization	Org. Type
				Sectors: Other
Natrona	Fred Trujillo	Representative	Holly Energy Partners	Other: Regional Stakeholders
Natrona	Garth Crowe	ARES Section Manager	ARRL	Community Sectors: Infrastructure (Lifelines)
Natrona	Gavin Donnelly	Representative	Contango	Other: Large Public / Private Land Owners
Natrona	Gene Carl	Health, Safety & Environmental Coordinator	Contango Oil and Gas	Other: Regional Stakeholders
Natrona	H. H. Buck King	Mayor	Edgerton	Community Sectors: Elected Leadership
Natrona	Jake Blake	Fire Chief	Casper Fire Department	Community Sectors: Emergency Management
Natrona	James Whipps*	Coroner	Natrona County Coroners	Community Sectors: Health & Social Services
Natrona	Jamie Jones	Chief	Midwest Police Department	Community Sectors: Emergency Management
Natrona	Jason Speiser*	Deputy Chief	Casper Fire Department	Community Sectors: Emergency Management

County	Name	Title	Organization	Org. Type
Natrona	Jeff Goetz*	Senior Public Relations Specialist	WyDOT	State Entities: Other
Natrona	Jeffrey Rowe	Director of Facilities Management	Ernest Health	Community Sectors: Health & Social Services
Natrona	Jenni Trimmer*	Public Health Response Coordinator	Casper Natrona County Health Department	Community Sectors: Health & Social Services
Natrona	Jeremy Norris	Representative	USDG	Other: Large Employers
Natrona	Jeremy Trimel*	Lieutenant	Casper Police Department	Community Sectors: Emergency Management
Natrona	Jerry Rodgers	Lieutenant	Mills Police Department	Community Sectors: Emergency Management
Natrona	Jill Hickstein*	Lead Dispatcher	Public Safety Communications Center	Community Sectors: Emergency Management
Natrona	Jim Milne*	Commissioner	BOCC	Community Sectors: Elected Leadership
Natrona	John Becker*	Director of Security	Casper College	Community Sectors: Education
Natrona	John Harlin	Sheriff	Natrona County Sheriff's Office	Community Sectors: Emergency

County	Name	Title	Organization	Org. Type
				Management
Natrona	Josh Cruse	Representative	Veterans Administration	Other: Other
Natrona	Justin Smith	Building Official	Natrona County Development Department	Community Sectors: Land Use & Development
Natrona	Kami Neighbors	Emergency Management Director	Washakie County	Community Sectors: Emergency Management
Natrona	Kathy Weinsaft*	Training Specialist, UMC	Wy. Association of Rural Water Systems (WARWS)	Community Sectors: Infrastructure (Lifelines)
Natrona	Keith McPheeters	Chief	Casper Police Department	Community Sectors: Emergency Management
Natrona	Kiera Grogan	Public Information Officer	Natrona County Sheriff's Office	Community Sectors: Emergency Management
Natrona	Krista Johnston*	Sanitary Sewer/Stormwater Manager	Casper	Community Sectors: Infrastructure (Lifelines)
Natrona	Kristie Turner*	Planner	Natrona County	Community Sectors: Land Use & Development
Natrona	Lane Millay	Representative	Casper Crude to Rail	Other: Regional Stakeholders

County	Name	Title	Organization	Org. Type
Natrona	Larry Wilson*	Owner/Partner	Secure Gunz, LLC	Other: Large Employers
Natrona	Leah Jaurez*	Mayor	Mills	Community Sectors: Elected Leadership
Natrona	Lenny Layman	Emergency Manager	Carbon County	Community Sectors: Emergency Management
Natrona	Leo Malsom*	Chief	Evansville Fire	Community Sectors: Emergency Management
Natrona	Lex Dyer	Emergency Response Specialist	Enbridge Energy Company	Other: Regional Stakeholders
Natrona	Lisa Evers*	Chief	Casper Mountain Fire	Community Sectors: Emergency Management
Natrona	Lisa Scriggions*	Director	Natrona County Public Library	Community Sectors: Public
Natrona	Lori Jackson	Manager	Public Safety Communications Center	Community Sectors: Emergency Management
Natrona	Marilyn Connolly	Emergency Management Coordinator	Johnson County	Community Sectors: Emergency Management
Natrona	Mark Cornett*	Assistant Chief	Evansville Fire	Community Sectors: Emergency

County	Name	Title	Organization	Org. Type
				Management
Natrona	Mark Pepper*	Executive Director	Wy. Association of Rural Water Systems (WARWS)	Community Sectors: Infrastructure (Lifelines)
Natrona	Matt Gacke	Inspector	Natrona County Fire Protection	Community Sectors: Emergency Management
Natrona	Michael Brown*	Parks Director	Natrona County Parks Department	Community Sectors: Natural & Cultural Resources
Natrona	Michael Cavalier*	Natrona County EM Deputy Coordinator	Natrona County EM	Community Sectors: Emergency Management
Natrona	Michael Choma	Law Enforcement Supervisor	Wyoming Game & Fish	State Entities: Other
Natrona	Michael Dewell	Representative	NOV	Other: Large Employers
Natrona	Michael Eisenman	Alcova/Fremont Canyon Plant Supervisor	Bureau of Reclamation	Other: "High" & "Significant" Risk Dam Owners
Natrona	Michael Howe	Community Affairs Manager	Black Hills Energy	Other: Regional Stakeholders
Natrona	Michael Jennings	Superintendent	Natrona County School District	Community Sectors: Education
Natrona	Michelle Bahe*	Curator	Ft. Caspar Museum	Community Sectors: Natural & Cultural

County	Name	Title	Organization	Org. Type
				Resources
Natrona	Mike Cormier	Representative	Central Wyoming Hospice	Community Sectors: Health & Social Services
Natrona	Mike Haigler*	Director	Natrona County Road/Bridge	Community Sectors: Infrastructure (Lifelines)
Natrona	Mike Thompson*	Police Chief	Evansville Police Department	Community Sectors: Emergency Management
Natrona	Milan Vinich*	Emergency Management Coordinator	Fremont County	Community Sectors: Emergency Management
Natrona	Mindi Pile	Chief Operating Officer	Summit Medical Center	Community Sectors: Health & Social Services
Natrona	Mitch Mathhiesen*	Area Manager	Seminole Pipeline	Other: Regional Stakeholders
Natrona	Nicole Christensen*	Public Health Response Coordinator	Casper Natrona County Health Department	Community Sectors: Health & Social Services
Natrona	Pam Mann*	Operations Manager	Youth Crisis Center	Community Sectors: Health & Social Services
Natrona	Pete Stuckert	Director POM/EVS	Summit Medical Center	Community Sectors: Health & Social Services
Natrona	Peter Boyer*	Mayor	Bar Nunn	Community Sectors: Elected

County	Name	Title	Organization	Org. Type
				Leadership
Natrona	Peter Nicolysen	Commissioner	BOCC	Community Sectors: Elected Leadership
Natrona	Reed Aivazian*	Emergency Manager	Banner Health WMC	Community Sectors: Health & Social Services
Natrona	Riley Beckstead*	EMS Director	Banner Health WMC	Community Sectors: Health & Social Services
Natrona	Riley Dewitt	Chief	Salt Creek Emergency Services	Community Sectors: Emergency Management
Natrona	Robert Hoover	Chief	Bar Nunn Fire	Community Sectors: Emergency Management
Natrona	Robert Ratliff*	Fire Protection Specialist	HF Sinclair Refinery	Other: Regional Stakeholders
Natrona	Ryan Dabney	Captain	Casper Police Department	Community Sectors: Emergency Management
Natrona	Shane Chaney	Captain	Casper Police Department	Community Sectors: Emergency Management
Natrona	Stacia Hill*	Emergency Mgt. Coordinator	Natrona County EM	Community Sectors: Emergency Management

County	Name	Title	Organization	Org. Type
Natrona	Stephanie Munoz	Disaster Program Manager	American Red Cross	Other: Regional Stakeholders
Natrona	Stephen Gleason*	Representative	Church of Latter Day Saints	Community Sectors: Public
Natrona	Steve Freel	Commissioner	BOCC	Community Sectors: Elected Leadership
Natrona	Tammy Smith	Office Operations Fiscal Manager	Casper Natrona County Health Department	Community Sectors: Health & Social Services
Natrona	Tate Balden	President	Casper Amateur Radio Club	Other: Other
Natrona	Tera Brown	Director of Compliance	Ernest Health	Community Sectors: Health & Social Services
Natrona	Timothy Simeroth	Captain	Salvation Army	Community Sectors: Underserved Communities & Socially Vulnerable Populations
Natrona	Tracy Sutherland	Mayor	Midwest	Community Sectors: Elected Leadership
Natrona	Tyler Daugherty	Director	Visit Casper	Community Sectors: Economic Development
Natrona	Wil Gay*	Chief	Mills Fire Department	Community Sectors: Emergency

County	Name	Title	Organization	Org. Type
				Management
Niobrara	Bill Matthews*	Mayor	Van Tassel	Community Sectors: Elected Leadership
Niobrara	Bo Krein	Chief	Lusk Police Department	Community Sectors: Emergency Management
Niobrara	Chantry Filener*	Chief	Lusk Volunteer Fire Dept.	Community Sectors: Emergency Management
Niobrara	Chris Olson	Representative	ONEOK	Other: Large Employers
Niobrara	Colby Thurston	EMT	Rural Fire District / EMS	Community Sectors: Health & Social Services
Niobrara	Cory Wilcox*	Director	Lusk-Niobrara Ambulance	Community Sectors: Health & Social Services
Niobrara	Darcey Cowardin*	Manager	WY Public Health	Community Sectors: Health & Social Services
Niobrara	Elaine Griffith*	Co Comm	Niobrara County	Community Sectors: Other
Niobrara	Franklin Maynard	Emergency Manager	Fall River County, SD	Community Sectors: Emergency Management
Niobrara	Fred Thomas*	Road and Bridge Foreman	Niobrara County	Community Sectors: Infrastructure

County	Name	Title	Organization	Org. Type
				(Lifelines)
Niobrara	Gilbert Nelson	Emergency Management Coordinator	Weston County	Community Sectors: Emergency Management
Niobrara	Jacob Gordon*	Sergeant	Lusk PD	Community Sectors: Emergency Management
Niobrara	James Santistevan*	EM / LEPC Chair	Niobrara County	Community Sectors: Emergency Management
Niobrara	John P. Midkiff*	Commissioner	Niobrara County	Community Sectors: Elected Leadership
Niobrara	Kelly Dean*	Sheriff	Niobrara	Community Sectors: Emergency Management
Niobrara	Matthew Gordon*	PHRC	WY Public Health	Community Sectors: Health & Social Services
Niobrara	Michelle Kremers*	Nurse	NCPH	Community Sectors: Health & Social Services
Niobrara	Mike Mayville*	EMS Director	County EMS	Community Sectors: Health & Social Services
Niobrara	Monica Wilcox*	PHRC	WY Public Health	Community Sectors: Health & Social Services

County	Name	Title	Organization	Org. Type
Niobrara	Nan Gould	Regional Coordinator	Sioux County, NE	Community Sectors: Emergency Management
Niobrara	Pat Wade	Commissioner - Chair	Niobrara County	Community Sectors: Elected Leadership
Niobrara	Randy Starkey*	Sheriff	Niobrara County Sheriff	Community Sectors: Emergency Management
Niobrara	Richard A. Ladwig*	Mayor	Manville	Community Sectors: Elected Leadership
Niobrara	Steven Esser	Emergency Services Director	Custer County, SD	Community Sectors: Emergency Management
Niobrara	Thomas Bozeman	Emergency Management Coordinator	Goshen County	Community Sectors: Emergency Management
Niobrara	Todd Skrukrud*	Director of Public Works	Lusk	Community Sectors: Infrastructure (Lifelines)

APPENDIX C: MITIGATION ACTION IDEAS GUIDE

APPENDIX D: PUBLIC SURVEY RESPONSES



Agenda Item Report

City Council – October 28, 2024

Item

Funding usage approval: Water Fund Account number 31-5856-2158 for water well study and drilling.

Responsible Staff Contact

Mary Nicol

Recommendation

Authorize usage of budgeted funding for water well study and drilling.

Executive Summary

Requesting usage of money budgeted in Water Fund, Water Improvements Department, account number 31-5856-2158, Misc. Contractual Services for furthering the water well study, including drilling.

Background

Alignment to Strategic Doing (SD) and/or Other Plans

SD Commitment
SD Commitment Strategy
SD Commitment KPI
SD Outcome
SD Outcome Strategy
SD Outcome KPI
2014 Master Plan
2015 Downtown Master Plan

Budget/Fiscal Impact

Fund/Department: Water Fund
Project/Line Item(s): Water Improvements - Water Well Study
Budgeted Amount: \$250,000
Anticipated Amount: \$45,000

Action Requested/Recommended Motion

Authorize the usage of \$45,000 of funding budgeted in account number 31-5856-2158 for water well study.

Attachments

None



Agenda Item Report

City Council – October 28, 2024

Item

MOU: Industrial Siting Council Dutchman Renewable Power Project

Responsible Staff Contact

Recommendation

Executive Summary

Background

Alignment to Strategic Doing (SD) and/or Other Plans

SD Commitment
SD Commitment Strategy
SD Commitment KPI
SD Outcome
SD Outcome Strategy
SD Outcome KPI
2014 Master Plan
2015 Downtown Master Plan

Budget/Fiscal Impact

Fund/Department
Project/Line Item(s)
Budgeted Amount
Anticipated Amount

Action Requested/Recommended Motion

Attachments

1. Draft Dutchman MOU

**WYOMING DEPARTMENT OF ENVIRONMENTAL QUALITY
INDUSTRIAL SITING DIVISION
STATE OF WYOMING**

**IN THE MATTER OF THE INDUSTRIAL)
SITING PERMIT APPLICATION OF)
DUTCHMAN RENEWABLE)
POWER PROJECT) DOCKET NO. DEQ/ISC 22-11**

**MEMORANDUM OF UNDERSTANDING BETWEEN THE BOARD OF
COMMISSIONERS OF CONVERSE COUNTY, WYOMING; THE BOARD OF
COMMISSIONERS OF NATRONA COUNTY, WYOMING; THE CITY OF DOUGLAS,
WYOMING; THE CITY OF CASPER, WYOMING; THE TOWN OF EVANSVILLE,
WYOMING; THE TOWN OF BAR NUNN, WYOMING; THE TOWN OF GLENROCK,
WYOMING; THE CITY OF MILLS, WYOMING, AND THE TOWN OF ROLLING
HILLS, WYOMING FOR IMPACT ASSISTANCE FUNDS**

1. Parties. This Memorandum of Understanding (hereinafter referred to as "MOU") is made and entered into and effective as the last date of signature ("Effective Date") by and between the following parties:

The Board of Commissioners of Converse County, Wyoming, a body corporate and political subdivision of the State of Wyoming, (hereinafter referred to as "Converse County") whose address is 107 N 5th Street, Ste.114, Douglas, Wyoming 82633;

The Board of Commissioners of Natrona County, Wyoming, a body corporate and political subdivision of the State of Wyoming, (hereinafter referred to as "Natrona County") whose address is 200 N. Center, Suite 115, Casper, Wyoming 82601;

The City of Douglas, Wyoming, a Wyoming municipal corporation (hereinafter referred to as "Douglas" whose address is 101 N. Fourth Street, P.O. Box 1030, Douglas, Wyoming 82633;

The City of Casper, Wyoming, a Wyoming municipal corporation (hereinafter referred to as "Casper") whose address is 200 N. David St., Casper, Wyoming 82601;

The Town of Evansville, Wyoming, a Wyoming municipal corporation, (hereinafter referred to as "Evansville") whose address is PO Box 158, Evansville, Wyoming 82636;

The Town of Bar Nunn, Wyoming, a Wyoming municipal corporation, (hereinafter referred to as "Bar Nunn") whose address is 4820 North Wardwell Industrial Avenue, Bar Nunn, Wyoming 82601;

The Town of Glenrock, Wyoming, a Wyoming municipal corporation, (hereinafter referred to as "Glenrock") whose address is 219 S 3rd Street, Glenrock, Wyoming 82637;

The City of Mills, Wyoming, a Wyoming municipal corporation, (hereinafter referred to as "Mills") whose address is PO Box 789, Mills, Wyoming 82644, and

The Town of Rolling Hills, Wyoming, a Wyoming municipal corporation, (hereinafter referred to as "Rolling Hills" 38 South Badger Road, Rolling Hills, Wyoming 82637, hereinafter collectively referred to as "Party" or "Parties."

WHEREAS, in August, 2024 of 2024, DUTC bn, LLC (Dutchman), submitted an Application to the Wyoming Department of Environment Quality, Industrial Siting a Section 109 (as a contested case) Permit Application pursuant to W.S. § 35-12-109 for the Dutchman Renewable Power Project, Converse County, Wyoming (hereinafter referred to as "Project").

WHEREAS, DUTC bn, LLC (Applicant) filed an Application for a Permit to construct and operate the Project located in Converse County, Wyoming, approximately 1.5 miles northeast of Glenrock, Wyoming, and adjacent to the eastern edge of Rolling Hills, Wyoming. The Applicant proposes to construct a facility contingent upon obtaining approval from the Industrial Siting Council (ISC) and securing other required permits. An assumed 29-month construction period is planned to begin in March of 2026. The Project is planned to be 499 megawatts in size, consisting of 4395 acres of solar panels and auxiliary equipment and to be operational by 2028.

WHEREAS, Wyoming industrial development information and siting rules and regulations define the phrase "area or local government primarily affected by the proposed industrial facility" as "any defined geographical area in which the construction or operation of the industrial facility may significantly affect the environment, population, level of economic well-being, level of social services, or may threaten the health, safety or welfare of present or expected inhabitants" and the definition includes "any such county, incorporated municipality, school district, or combination thereof formed under Wyoming Joint Powers Act," Chapter 1, Section 2(b), Wyoming Department of Environmental Quality, Administrative Rules and Regulations.

WHEREAS, application for the Project recommended that the local governments considered primarily affected by the proposed Project include Converse County, Natrona County and the communities of Douglas, Glenrock, Rolling Hills, Casper, Evansville, Bar Nunn and Mills, and Lost Springs.

WHEREAS, the Parties are the governing bodies of the local governments which will be primarily affected by the proposed facility.

WHEREAS, the Parties desire to enter an MOU to determine the amounts and schedule for payment distribution of impact assistance funds for the Project.

NOW, THEREFORE, in consideration of the Recitals, the terms and conditions hereinafter contained, and for such other good and valuable consideration, the receipt and sufficiency of which are herein acknowledged, the Parties agree as follows:

2. Duration of MOU. This MOU shall be effective as of the last date of signature between the parties, and shall remain in effect until the Project is terminated.

3. Purpose. The purpose of this MOU is to provide the Industrial Siting Council pursuant to W.S. § 39-15-111(c) and (d) and W.S. § 39-16-111 (d) and (e) an amount and schedule for distribution of impact assistance funds as agreed by the Parties.

4. Amount & Schedule for Distribution of Impact Assistance Funds. The Parties agree to the amount and schedule for distribution of impact assistance funds as outlined in Exhibit A, which is attached hereto and incorporated herein. The Parties' funding requests contemplate that the Project is likely to occur during the same period and in a similar location to other Industrial Projects and the Parties' impact assistance funding requests for the Project were modified accordingly, and do not include duplicate impact funds.

Should a Party request that a distribution be adjusted, revised or modified, the Party shall first seek approval of all Parties prior to submittal to the Industrial Siting Council for their request for any modification of amount or distribution of impact assistance funds. The Parties shall take into consideration the factors as outlined in the Industrial Siting Rules as to whether the social and economic impacts have changed and establish a new distribution if necessary. The Parties may enter into an MOU with another Party to adjust, revise or modify a Party's amount of distribution of impact assistance funds; however, such MOU shall be forwarded to the Industrial Siting Council for review and approval.

5. The parties to this MOU are signing on behalf of their individual request for unmitigated impacts. The individual parties make no representation as to the validity of other parties impacts or requests. The parties expect the Industrial Siting Council to review and evaluate each parties' individual requests and adjust if warranted.

6. General Provisions.

6.1 Amendments. Any party may request changes to this MOU. Any changes, modifications, revisions or amendments to this MOU which are mutually agreed upon by and between the Parties to this MOU shall be incorporated by written instrument, and effective when executed and signed by all Parties to this MOU.

6.2. Applicable Law. The construction, interpretation and enforcement of this MOU shall be governed by the laws of the State of Wyoming. The courts of the State of Wyoming shall have jurisdiction over any action arising out of this MOU and over the Parties, and the venue shall be the 8th Judicial District of the State of Wyoming, Converse County, Wyoming.

6.3. Entirety of MOU. This MOU, consisting of fourteen (14) pages and one (1) additional page incorporated herein as Exhibit A, represents the entire and integrated MOU between the Parties and supersedes all prior negotiations, representations and MOUs, whether written or oral.

6.4. Severability. Should any portion of this MOU be judicially determined to be illegal or unenforceable, the remainder of the MOU shall continue in full force and effect, and either Party may renegotiate the terms affected by the severance.

6.5. Governmental Immunity. The Parties and their respective governing bodies do not waive their governmental immunity by entering into this MOU and each fully retains all immunities and defenses available under W.S. § 1-39-101 et seq. and all other immunities provided by law with respect to any action based on or occurring as a result of this MOU.

6.6. Indemnification. Each Party to this MOU shall assume the risk of liability arising from its own conduct. No Party agrees to insure, defend or indemnify the other Parties.

6.7. Other Interagency MOUs. All Parties to this MOU acknowledge that this MOU does not preclude or preempt each of the Parties individually entering into an MOU with one or more Parties to this MOU or outside of this MOU to modify the amount and distribution schedule of impact assistance funds as outlined in Section 3 herein. Such MOU's shall not nullify the force and effect of this MOU.

6.8. Titles Not Controlling. Titles of paragraphs are for reference only, and shall not be used to construe the language in this MOU.

6.9. Waiver. The waiver or any breach of any term or condition in this MOU shall not be deemed a waiver of any prior or subsequent breach. Failure to object to a breach shall not constitute a waiver.

6.10. Severability. Should any portion of this MOU be judicially determined to be illegal or unenforceable, the remainder of the MOU shall continue in full force and effect, and the parties may renegotiate the terms affected by the severance.

6.11. Time is of the Essence. Time is of the essence in all provisions of the MOU.

IN WITNESS WHEREOF, the Board of County Commissioners has caused this Memorandum of Understanding to be signed and executed on its behalf by its Chairman, and duly attested by its County Clerk.

**BOARD OF COMMISSIONERS OF THE COUNTY OF
CONVERSE, WYOMING:**

By: _____
Jim Willox, Chairman

Date: _____

ATTEST:

By: _____
Karen Rimmer, County Clerk

APPROVED AS TO FORM:

Attorney

IN WITNESS WHEREOF, the Board of County Commissioners has caused this Memorandum of Understanding to be signed and executed on its behalf by its Chairman, and duly attested by its County Clerk.

**BOARD OF COMMISSIONERS OF THE COUNTY OF
NATRONA, WYOMING:**

By: _____
Peter Nicolaysen, Chairman

Date: _____

ATTEST:

By:

Tracy Good, County Clerk

APPROVED AS TO FORM:

Heather Duncan-Malone, Attorney

IN WITNESS WHEREOF, the City Council has caused this Memorandum of Understanding to be signed and executed on its behalf by its Mayor, and duly attested by its City Clerk.

THE CITY OF DOUGLAS, WYOMING:

By: _____
Kim Pexton, Mayor

Date: _____

ATTEST:

By: _____
Douglas City Clerk

APPROVED AS TO FORM:

Attorney

IN WITNESS WHEREOF, the City Council has caused this Memorandum of Understanding to be signed and executed on its behalf by its Mayor, and duly attested by its City Clerk.

THE CITY OF CASPER, WYOMING:

By: 
Stephen Cathey, Mayor

Date: 10/15/2024

ATTEST:

By: 
Amanda Ainsworth, City Clerk



APPROVED AS TO FORM:

Attorney

IN WITNESS WHEREOF, the Town Council has caused this Memorandum of Understanding to be signed and executed on its behalf by its Mayor, and duly attested by its Town Clerk.

THE TOWN OF EVANSVILLE, WYOMING:

By: _____
Candace Machado, Mayor

Date: _____

ATTEST:

By: _____
Janelle Underwood, Town Clerk

APPROVED AS TO FORM:

Attorney

IN WITNESS WHEREOF, the Town Council has caused this Memorandum of Understanding to be signed and executed on its behalf by its Mayor, and duly attested by its Town Clerk.

THE TOWN OF BAR NUNN, WYOMING:

By: _____
Peter Boyer, Mayor

Date: _____

ATTEST:

By: _____
Bar Nunn Town Clerk

APPROVED AS TO FORM:

Patrick T. Holscher, Attorney

IN WITNESS WHEREOF, the City Council has caused this Memorandum of Understanding to be signed and executed on its behalf by its Mayor, and duly attested by its City Clerk.

THE CITY OF MILLS, WYOMING:

By: _____
Leah Juarez, Mayor

Date: _____

ATTEST:

By: _____
Christine Trumbull, City Clerk

APPROVED AS TO FORM:

Patrick T. Holscher, Attorney

IN WITNESS WHEREOF, the Town Council has caused this Memorandum of Understanding to be signed and executed on its behalf by its Mayor, and duly attested by its Town Clerk.

THE TOWN OF ROLLING HILLS, WYOMING:

By: _____
Jon O. Maines, Mayor

Date: _____

ATTEST:

By: _____
Town Clerk

APPROVED AS TO FORM:

Matthew K. Sato, Attorney

IN WITNESS WHEREOF, the Town Council has caused this Memorandum of Understanding to be signed and executed on its behalf by its Mayor, and duly attested by its Town Clerk.

THE TOWN OF GLENROCK, WYOMING:

By: _____
Bruce Rournell, Mayor

Date: _____

ATTEST:

By: _____
Town Clerk

APPROVED AS TO FORM:

Amy M. Iberlin, Attorney

IN WITNESS WHEREOF, the Town Council has caused this Memorandum of Understanding to be signed and executed on its behalf by its Mayor, and duly attested by its Town Clerk.

THE TOWN OF LOST SPRINGS, WYOMING:

By: _____
Mayor

Date: _____

ATTEST:

By:

Town Clerk

APPROVED AS TO FORM:

Attorney

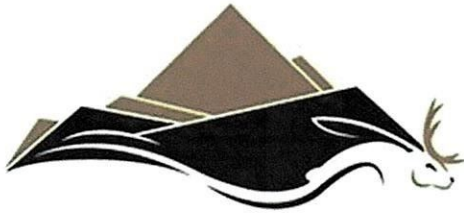
EXHIBIT A

Exhibit A to the Memorandum of Understanding between the Board of Commissioners of the Converse County Commissioners, The Board of Commissioners of Natrona County, Wyoming, the City of Douglas, Wyoming, the City of Casper, Wyoming, the Town of Evansville, Wyoming, the Town of Bar Nunn, Wyoming, the Town of Glenrock, Wyoming, the City of Mills, Wyoming and the Town of Rolling Hills, Wyoming for Impact Assistance Funds

Estimated Impact Funds Available: Approximately 16.9 million dollars.

Amount Requested in MOU:

Entity	MOU Amount Requested			
Converse County				
Natrona County				
Casper	\$2,660,807.00			
Douglas				
Evansville				
Bar Nunn				
Mills				
Glenrock				
Rolling Hills				



**Funding Agreement between
City of Douglas, Wyoming
&
Outdoor Enthusiasts of Converse County**

1. **Parties.** This Funding Agreement (hereinafter referred to as "Agreement") is made and entered into on this 17 day of October, 2024, by and between the **City of Douglas, Wyoming**, a municipal corporation, (hereinafter referred to as "City") whose address is P.O. Box 1030, Douglas, Wyoming, and **Outdoor Enthusiasts of Converse County**, a Wyoming non-profit corporation, (hereinafter referred to as "Organization"), doing business in Douglas, Wyoming, whose address is 608 Osburn Drive, Douglas, Wyoming, 82633.

Whereas, pursuant to WS §15-1-103(a)(xlv) the City is authorized to contract with non-profit corporations to provide human services for persons within its jurisdiction; and

Whereas, the Organization provides support and/or services to the members of the public within the City and the City Council has agreed to provide public funding as outlined within the terms and subject to the conditions set out in this Agreement.

NOW, THEREFORE, in consideration of the promises, agreement and mutual covenants made herein, it is agreed by and between the City and Organization as follows:

2. **Purpose.** The purpose of this Agreement is to provide Organization funding in the amount of **Twenty-Five Thousand Dollars & 00/100 (\$25,000.00)** to be utilized by the Organization in accordance with the terms outlined herein.

3. **Term.** This Agreement will commence on July 1, 2024 and continue in force for a period of one year until June 30, 2025.

4. **Payment.**

4.1. **City shall pay organization via monthly disbursements of funds**, with the last disbursement to be requested on or before the third Monday in July 2025. At that time, there is no continuing obligation on the part of the City to provide additional funding to Organization.

4.2. **Organization shall submit to the Administrative Services Department**, certified under penalty of perjury, a full itemized statement or invoice for payment in writing, including documentation verifying actual costs incurred for the invoiced period (e.g. receipts, expense report, financial statement, etc.). The City may require additional documentation which evidences that the Organization has complied with all of its responsibilities and requirements under this Agreement, including, but not limited to, those responsibilities outlined in Paragraph 5 below. Payment may not be made by the City unless and until satisfactory evidence of costs incurred have been submitted and approved. Subject to this Agreement, City will pay sum to Organization within 45 days of receipt of statement or invoice and other requested documents.

4.3. **Payment of funding is conditional upon each and all of the following:**

4.3.01. Organization has met each and every obligation imposed under this Agreement to the satisfaction of the City, including but not limited to submitting reports to the City.

4.3.02. City continuing to have sufficient funding allocated to Organization in its budget.

4.3.03. In the event of a Default of this Agreement as outlined in Section 7.16, City may withhold or suspend payment, in whole or part, to this Organization.

4.4. **Repayment of Funding: Organization must repay City:**

4.4.01. In the event of a Default or Breach of this Agreement as outlined in Section 7.17;

4.4.02. If, at any time during the term of or upon expiration or termination of this Agreement, there remains an amount of funding that has not been expended or acquitted to City's satisfaction in accordance with this Agreement, then this amount must be refunded by the Organization to City

within twenty (20) business days of a written notice from City, or dealt with as directed in writing by City. Any amount owed to City under this section will be recoverable as a debt due to City without further proof of the debt.

5. Responsibilities of Organization.

5.1. Organization Shall Provide the Following Services:

5.1.01. Public Archery Range. Updates and repairs to the existing range south of Bartling Park in Douglas, Wyoming.

5.1.02. Bike Park. Funds would be utilized to provide capital necessary to begin phase one construction of a proposed bike park on city property located on the east end of Center Street.

5.2. Use of Funding. Organization must use the funding solely for the stated purposes; only use the funding within the funding period; and not enter into any arrangements or commitments that are incompatible or inconsistent with the purpose of the funding.

5.2.01. Allowable Uses of Funds. These funds shall be used for services described in Section 5.1. Organization shall expend all funds received under this Agreement solely for program activities as identified in accordance with eligible program costs set forth below:

5.2.01(i). Direct costs (including salaries/benefits of employees assigned to the program and any services/supplies necessary for the program).

5.2.01(ii). Indirect costs (these costs are defined by federal standards and Generally Accepted Accounting Principles for the purpose of allocating allowable indirect costs to a program).

5.2.02. Unallowable Uses of Funds. Organization shall not expend funds for:

5.2.02(i). Any costs outside the scope of the approved program;

5.2.02(ii). Personal injury compensation or damages arising out of or connected with the program;

5.2.02(iii). Fines and penalties due to violations or failure to comply with federal, state, or local laws and ordinances, and terms, provisions, conditions or commitments of this Agreement;

5.2.02(iv). Interest on bonds or other forms of indebtedness;

5.2.02(v). Any costs arising out of or attributable to the Organization's malfeasance, misfeasance, mismanagement, or negligence;

5.2.02(vi). "Buy out" of unused sick leave, vacation/administration leave time, or

5.2.02(vii). Funds shall not be used as investment funds or deposited into any type of savings account.

6. Special Provisions.

6.01. Records. Organization shall establish an official file for the program containing adequate documentation of all actions taken in the performance of the Agreement and maintain a system of accounts that complies with generally accepted accounting principles for government agencies.

6.02. Record Retention and Inspection. Organization shall retain financial, programmatic, client data and other service records for three (3) years from the date of the end of the Agreement award or for three (3) years from the date of termination, whichever is later. Authorized representatives of City, the state and/or federal government may inspect and/or audit Organization's performance, place of business and/or records pertaining to this Agreement.

6.03. Access to Books and Records. Organization agrees to permit the City or its agents access to any of Organization's books, records and accounts for the purpose of ascertaining compliance with any statutes, regulation and order, and with the terms and conditions of this Agreement. City shall follow Generally Accepted Accounting Principles or Other Comprehensive Bases of Accounting acceptable to the City in recording financial transactions. When requested by the City, Organization at its own expense shall have its annual accounting reports audited or prepared by a licensed independent accountant acceptable to the City.

7. General Provisions.

7.01. Amendments. Any mutually agreed upon change to the terms and conditions of this Agreement shall be effective only when incorporated in written amendments to this Agreement. Any verbal agreement or conversation shall be nonbinding on the City.

7.02. Applicable Law/Venue. The construction, interpretation, and enforcement of this Agreement shall be governed by the laws of the State of Wyoming. The Courts of the State of Wyoming have jurisdiction over this Agreement and the parties, and the venue shall be the Eighth Judicial District, Converse County, Wyoming.

7.03. Compliance with Law. Organization represents and warrants that it has and shall continue to comply with federal, state, and local laws and regulations applicable to Organization's performance, including, but not limited to: licensing, employment and purchasing practices, wages, hours and conditions of employment. Organization warrants that it possesses current valid appropriate licensure, including, but not limited to: driver's license, professional license, certificate of tax-exempt status, or permits, required to perform the work that is required for funding under this Agreement.

7.04. Entirety of Agreement. This Agreement represents the entire and integrated agreement between the parties and supersedes all prior negotiations, representations, and agreements, whether written or oral.

7.05. Force Majeure. Neither party shall be liable for failure to perform under this Agreement if such failure to perform arises out of causes beyond the control and without the fault or negligence of the nonperforming party. This provision shall become effective only if the party failing to perform immediately notifies the other party of the extent and nature of the problem, limits delay in performance to that required by the event, and takes all reasonable steps to minimize delays.

7.06. Confidentiality. Organization shall abide by any and all applicable laws governing the confidentiality of information regarding clients served under this Agreement. Organization shall:

7.06.01. Prevent unauthorized disclosure of names and other client-identifying information, except for statistical information not identifying a particular client, to anyone other than the State or federal government pursuant to State or federal law.

7.06.02. Not use client specific information for any purpose other than carrying out their obligations under this Agreement.

7.07. Independent Contractor. Organization is an independent contractor and not an agent, officer, or employee of City. The parties mutually understand that this Agreement is not intended to and shall not be construed to create the relationship of agent, servant, employee, partnership, joint venture, or association with the City. As an independent contractor, Organization is not subject to the direction and control of City except as to the final result under this Agreement. Any persons employed by Organization shall be under Organization's exclusive direction, supervision, and control. Organization shall determine all conditions of employment including hours, wages, working conditions, discipline, hiring and discharging, or any other condition of employment. Organization shall assume sole responsibility for any debts or liabilities that may be incurred and for the payment of federal, state, and local taxes that may accrue in fulfilling the terms of this Agreement. Nothing in this Agreement shall be interpreted as authorizing Organization or its agents and/or employees to act as an agent or representative for or on behalf of City, or to incur any obligation of any kind on behalf of the City. City agrees that no health/hospitalization benefits, workers' compensation,

and/or similar benefits available to City employees will inure to the benefit of Organization's agents and/or employees as a result of this Agreement.

7.08. Indemnification. Organization shall indemnify, hold harmless and assume the defense of the City, its officers, employees, agents, and elective and appointive boards from all claims, losses, lawsuits, costs and expenses, including attorney's fees, cause of actions, damages, including property damages, personal injury, death and liability of every kind, directly or indirectly accruing or arising as a result of or in connection with Organization's activities in relation to this Agreement.

7.09. Assignment. Organization shall not assign this Agreement or any interest therein, or any monies received pursuant hereto, either in whole or part, to any other entity, without the prior, express, and written consent of the City. Any unauthorized assignment shall be voided and shall, at the option of City, act as termination of this Agreement.

7.10. Governmental Immunity. City does not waive governmental immunity by entering into this Contract, and specifically retains immunity and all defenses available to it pursuant to Wyo. Stat. § 1-39-104(a) and all other state laws.

7.11. Third Party Beneficiary Rights. The parties do not intend to create in any other individual or entity the status of third party beneficiary, and this Agreement shall not be construed to create such status. The rights, duties, and obligations contained herein shall operate only between the parties and shall inure solely to their benefit. The provisions hereof are intended only to assist the parties in determining and performing their obligations under this Agreement. The parties hereto intend and expressly agree that only signatories shall have any legal or equitable right to seek enforcement, any remedy arising out of a party's performance or failure to perform any terms or conditions hereof, or to bring an action for the breach of this Agreement.

7.12. Americans with Disabilities Act. Organization shall not discriminate against a qualified individual with a disability and shall comply with the Americans with Disabilities Act, P.L. 101-336, 42 U.S.C. 12101, et seq., and/or any properly promulgated rules and regulations related thereto.

7.13. Nondiscrimination. In rendering services under this Agreement, Organization shall comply with all applicable federal, state, and local laws, rules and regulations and shall not discriminate based on age, ancestry, color, gender, marital status, medical condition, national origin, physical or mental disability, race, religion, sexual orientation, or other protected status.

7.14. Kickbacks. Organization certifies and warrants that no gratuities, kickbacks, or contingency fees were paid, nor were any fees, commissions, gifts, or other considerations made in connection with or contingent upon the award of this Agreement.

7.15. Liaison and Notice. Organization's and City's Designated Representatives. All notices arising out of, or from, the provisions of this Agreement shall be in writing and given to all parties at the addresses provided in Section 7.16.01 and 7.16.02, either by mail, facsimile, e-mail, or delivery in person.

7.15.01. City's designated representative is the City Manager, whose address is P.O. Box 1030, 101 N. 4th Street, Douglas, Wyoming, 82633; telephone number (307) 358-3462; and facsimile (307) 358-6447.

7.15.02. Organization's designated representative is Eli Geisler, President, whose address is 608 Osburn Drive, Douglas, Wyoming, 82633; email: outdoorenthusiastsofcc@gmail.com; and telephone number (308) 251-7314.

7.15.03. If notice is given by personal delivery, notice is effective as of the date of personal delivery. If notice is given by mail or through another carrier (e.g. UPS or FedEx), notice is effective as of the day following the date of mailing or the date of delivery reflected upon a return receipt, whichever occurs first.

7.16. Default. Any one or more of the following acts or omissions of this Agreement shall constitute an event of default hereunder (Events of Default):

7.16.01. Failure to satisfactorily perform any required task or service;

7.16.02. Failure to submit any report or provide notice required hereunder;

7.16.03. Failure to perform any other covenant or condition;

7.16.04. Failure to meet the commitments outlined in this Agreement, or the occurrence of an event which gives the City a reasonable basis to believe that the Organization will not be able to meet its commitments under the Agreement;

7.16.05. Failure to use funds in accordance with this Agreement;

7.16.06. Bankruptcy or insolvency of the Organization; or

7.16.07. Acted fraudulently or negligently or has completed an application for funding to City in a manner which could be construed as being either fraudulent, materially incorrect or materially misleading.

7.16.08. Upon the commencement of any Event of Default, the City shall give the Organization a written notice specifying the Event of Default and requiring it to be remedied within, in the absence of a greater or lesser specification of time, thirty (30) days from the date of notice. City may upon notice, withhold payment of the funding (or any part of it) until the Event of Default is remedied. If the Event of Default is not timely remedied, the City may treat this Agreement as breached. The City shall be immediately entitled to recover all or part of the funding paid to Organization and Organization shall pay such amount on demand to the City forthwith and pursue any of its remedies at law or in equity.

7.17. Termination. This Agreement will terminate upon a breach or default, as defined in Section 7.16 herein. Further, the Agreement will terminate upon Organization's receipt of the total amount of funds to be disbursed under this Agreement. The Parties by mutual agreement in writing may terminate this Agreement. Unless earlier terminated, this Agreement shall automatically terminate if subsequent legislation causes this Agreement to be in conflict with any law.

7.18. Insurance. It shall be the responsibility of Organization to carry a policy of commercial general liability insurance, with liability limits in an amount not less than \$1,000,000.00 per person and \$2,000,000.00 per occurrence, and shall provide the City Clerk with a copy of the certificate of commercial liability insurance for the Organization. Organization shall save and hold harmless the City and/or Assignee from any and all liability to persons for harm or injury resulting from the services performed under this Agreement.

7.19. Severability. Should any portion of this Agreement be judicially determined to be illegal or unenforceable, the remainder of this Agreement shall continue in full force and effect and either party may attempt to re-negotiate the terms affected by the severance.

7.20. Contingency. This Agreement is contingent upon the City's approval of this Agreement and the City continuing to have sufficient funding allocated to Organization in its budget.

7.21. Signature Authority. The parties executing this Agreement certify that they have the proper authority to bind their respective entities to all terms and conditions set forth herein.

7.22. Titles Not Controlling. Titles of sections are for reference only, and shall not be used to construe the language of this Agreement.

7.23. Waiver. Any failure of a party to assert any right under this Agreement shall not constitute a waiver or a termination of that right or any provision hereof.

7.24. Time is of the Essence. Time is of the essence in all provisions of the Agreement.

IN WITNESS WHEREOF, the Mayor of the City of Douglas and the Organization has signed and executed this Contract, the day and year first written above.

CITY OF DOUGLAS, WYOMING

Outdoor Enthusiasts of Converse County

By: _____
Kim Pexton, Mayor

By: [Signature]
Its: President

STATE OF WYOMING)
)
COUNTY OF CONVERSE)

Before me personally appeared Kim Pexton, Mayor of the City of Douglas, known to me to be the person whose name is subscribed to this instrument, and acknowledged that she executed the same for the purposes therein expressed this _____ day of _____, 2024.

WITNESS my hand and official seal.

Notary Public

STATE OF WYOMING)
)
COUNTY OF CONVERSE)

Before me personally appeared Eli Geisler, as President of Outdoor Enthusiasts of Converse County, known to me to be the person whose name is subscribed to this instrument, and acknowledged that they executed the same for the purposes therein expressed this 17th day of October, 2024.

WITNESS my hand and official seal.



[Signature]
Notary Public



Agenda Item Report

City Council – October 28, 2024

Item

RFP Update: The 112

Responsible Staff Contact

JD Cox, Clara Chaffin

Recommendation

Executive Summary

No proposals were received from the first release of the Request for Proposal: Structural and Construction Design Services for Site Preparation at 112 N. 2nd Street, Douglas, Wyoming.

A new timeline was developed, and the RFP was reissued on October 21, 2024.

Original Timeline	New Timeline
RFP Issued: September 23, 2024.	RFP Re-Issued: October 21, 2024.
Questions Due: 3:00 PM MT October 4, 2024.	Questions Due: 3:00 PM MT October 31, 2024.
Q&A Posted: 4:00 PM MT, October 7, 2024	Q&A Posted: 4:00 PM MT, November 1, 2024
RFP Submission Due: 4:00 PM MST, October 17, 2024.	RFP Submission Due: 4:00 PM MST, November 20, 2024.
Tentative Virtual Interview: October 21-22, 2024	Tentative Virtual Interview: December 2-3, 2024.
City Council Approval: October 28, 2024.	City Council Approval: December 9, 2024.
Contract Execution: November 4-8, 2024.	Contract Execution: December 10-20, 2024.
Consultant Start Date: November 13, 2024.	Consultant Start Date: December 23, 2024.

The RFP was sent to 1,423 contacts between the Wyoming State Board of Architects & Landscape Architects and personal contacts.

Background

Alignment to Strategic Doing (SD) and/or Other Plans[SD24 Outcome](#)[SD24 Strategy](#)[SD24 KPI](#)[2014 Master Plan](#)[2015 Downtown Master Plan](#)**Budget/Fiscal Impact**[Fund/Department](#)[Project/Line Item\(s\)](#)[Budgeted Amount](#)[Anticipated Amount](#)**Action Requested/Recommended Motion****Attachments**

None



Community Project Designations

Every year Wyoming Community Gas makes a distribution of earnings to member communities. This year our Board of Directors would like you to designate the project(s) your City or Town wants the money used for before we issue the check. This will give Wyoming Community Gas more direct exposure to the citizens in each community.

Please return this form as soon as possible, preferably by December 31, 2024.

City of Douglas

\$ 12,163.94

The City of Douglas has designated the distribution from Wyoming Community Gas as follows:

<u>Project</u>	<u>Amount</u>	<u>Check Designee</u>

Mayor

Date

Please return the completed form by EMAIL to Natalie Flood at natalie.flood@constellation.com, or by FAX to 877-382-8787



CITY OF DOUGLAS

Community Service Grant "Aid to Others"
Quarterly Report - Fiscal Year 2025

The quarterly report is a requirement of your continued Community Service Grant funding per your Community Service Grant agreement. Failure to provide this report may result in no disbursement of funds. You may complete this financial section or attach your own financial statement. This information will be shared with City Council as part of a regular Council meeting. Submit completed quarterly reports with attachments (if applicable) to the Administrative Services Department.

1. Organization/Company Name: <i>Youth Development Services</i>		2. Phone Number: <i>358-4352</i>
3. Complete Address: <i>PO Box 1328 Douglas, WY 82633</i>		
4. Email Address: <i>tkosters1968@gmail.com</i>		
5. Report for Quarter (check one): Ending March 31 ☐ Ending June 30 ☐ Ending September 30 ☒ Ending December 31 ☐		
6. Number of People Served for Quarter: <i>6</i>	7. Total Income: <i>\$37,733.94</i>	8. Total Expenditures: <i>\$35,000.00</i>
9. Please list activities, events, completed goals, or other such information for the quarter you are reporting on (attach additional page(s) if necessary):		
10. Please list any other information you would like Douglas City Council to be aware of:		

CERTIFICATION AND SIGNATURE

I hereby certify the above information to be true and correct to the best of my knowledge.

Treni Koster

AUTHORIZED SIGNATURE

10-1-24

DATE OF REPORT

Treni Koster

PRINTED NAME

TO BE COMPLETED BY CITY

Date Received:	Reviewed By:
	Report Complete? YES ☐ NO ☐

Youth Development Services

Income Statement

September 2024

	Sep 24	Budget
Ordinary Income/Expense		
Income		
4006 · State Block Grant	0.00	17,204.72
4020 · CC Commissioners	3,750.00	3,750.00
4021 · WY Community Foundation	0.00	0.00
4026 · Goshen County Commissioners	0.00	0.00
4030 · City of Douglas	1,666.66	1,666.66
4050 · Crisis Shelter Grant	11,904.00	7,020.00
4095 · Other	19,300.00	
5010 · Donations	0.00	0.00
5020 · Fundraisers	0.00	0.00
5030 · Investment Income	1,113.28	750.00
Total Income	37,733.94	30,391.38
Gross Profit	37,733.94	30,391.38
Expense		
Health/Life Insurance		
6228 · AFLAC.		
6361 AFLAC	-50.38	
6362.12 · AFLAC	-45.30	
Total 6228 · AFLAC.	-95.68	
6230.6 · Health Ins.		
6357 · 6357		
6357.1 · Dental	0.00	40.75
6357.2 · Life	0.00	13.83
6357.3 · Vision	0.00	9.58
6357 · 6357 - Other	0.00	1,250.00
Total 6357 · 6357	0.00	1,314.16
6358 · 6358		
6358.1 · Dental	0.00	0.00
6358.2 · Life	0.00	0.00
6358.3 · Vision	0.00	0.00
6358 · 6358 - Other	0.00	0.00
Total 6358 · 6358	0.00	0.00
6361 · 6361		
6361.1 · Dental	0.00	40.75
6361.2 · Life	0.00	9.00
6361.3 · Vision	9.59	9.58
6361 · 6361 - Other	0.00	1,833.33
Total 6361 · 6361	9.59	1,892.66
6362.01 · 6362.01		
6362.02 · Dental	0.00	40.75
6362.03 · Life	0.00	13.83
6362.04 · Vision	19.18	9.58
6362.01 · 6362.01 - Other	0.00	1,833.33
Total 6362.01 · 6362.01	19.18	1,897.49
Total 6230.6 · Health Ins.	28.77	5,104.31
6363.01 · 6363.01		
6363.02 · Dental	0.00	40.75
6363.03 · Life	0.00	9.00
6363.04 · Vision	0.00	9.58
6363.01 · 6363.01 - Other	0.00	750.00

Youth Development Services

Income Statement

September 2024

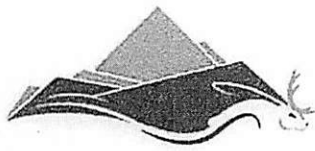
	Sep 24	Budget
Total 6363.01 · 6363.01	0.00	809.33
Total Health/Life Insurance	-66.91	5,913.64
Repairs/Maintenance		
6276 · Building	487.23	416.66
6277 · Equipment	0.00	100.00
6278 · Vehicle		
6278.02 · Plates	269.55	300.00
6278 · Vehicle - Other	0.00	100.00
Total 6278 · Vehicle	269.55	400.00
Total Repairs/Maintenance	756.78	916.66
Residents Costs		
6261 · Allowance		
6261.4 · GH Allowance	150.00	125.00
6261.5 · Crisis Allowances	0.00	41.66
Total 6261 · Allowance	150.00	166.66
6262 · Client Reward, Incentive,		
6262.4 · GH Client Reward, Incentive	0.00	62.50
6262.5 · Crisis Client Inc., Rewards	0.00	12.50
Total 6262 · Client Reward, Incentive,	0.00	75.00
6263 · Clothing		
6263.4 · GH Clothing	0.00	0.00
6263.5 · Crisis Clothing	0.00	0.00
Total 6263 · Clothing	0.00	0.00
6264 · Dining Out	0.00	0.00
6265 · Resident Living Exp.	0.00	0.00
6266 · Medical Supplies		
6266.4 · GH Medical Supplies	42.98	12.50
6266.5 · Crisis Medical Supplies	0.00	0.00
Total 6266 · Medical Supplies	42.98	12.50
6268 · Educational Supplies/Lunches	0.00	100.00
6269 · Recreation	0.00	0.00
Total Residents Costs	192.98	354.16
Utilities		
Water		
6233.5 · Pest Control	0.00	0.00
6321 · Water	177.90	170.00
6322 · Sewage	68.30	45.00
6323 · Garbage	38.25	40.00
Total Water	284.45	255.00
6300 · Cable/Internet	123.90	233.33
6305 · Electricity	313.85	187.50
6310 · Gas	63.14	141.66
6315 · Telephone	89.84	100.00
Total Utilities	875.18	917.49
Wages		
6005 · Executive Director		
6005.1 · ED Comp	2,000.00	1,000.00
6005 · Executive Director - Other	3,461.29	5,000.00
Total 6005 · Executive Director	5,461.29	6,000.00

Youth Development Services

Income Statement

September 2024

	Sep 24	Budget
6010 · EDA Salary	4,337.60	4,604.58
6012 · YCW		
6013 · Training	56.00	600.00
6012 · YCW - Other	11,300.09	11,666.66
Total 6012 · YCW	11,356.09	12,266.66
6016 · Business Manager	1,732.91	1,666.66
Total Wages	22,887.89	24,537.90
6219 · Payroll Taxes	2,377.58	2,062.50
6235 · Employee Background Checks	0.00	100.00
6236 · Employee CPR/First Aid/Hep B	0.00	0.00
6237 · Employee Incentive	0.00	0.00
6238 · Contract Service	6,500.00	0.00
6241 · Insurance		
6241.1 · Directors & Officers	0.00	0.00
6241.2 · General Liability	0.00	0.00
6241.3 · Vehicle	0.00	0.00
6241.4 · Building Contents	0.00	0.00
6241.5 · Bond	218.00	220.00
Total 6241 · Insurance	218.00	220.00
6245 · Training/Learning Materials	0.00	0.00
6247 · Travel & Meal Costs	0.00	500.00
6249 · Postage/Printing/Copies	190.86	91.66
6250 · Office Expenses	-8.95	125.00
6251 · Facility Certification	0.00	0.00
6252 · Staff Recruitment	0.00	100.00
6253 · Furniture/Equip.	0.00	0.00
6254 · New Van	0.00	0.00
6256 · Room & Board Supplies	245.49	145.83
6258 · Food & Supplies	856.16	1,000.00
6270 · Dues/Fees/Licenses/Subscrip.	0.00	0.00
6280 · Van Gasoline	67.88	62.50
6289 · Pet Expense	7.66	33.33
6330 · Rent Expense	0.00	0.00
6331 · Fundraiser Expense	0.00	0.00
Total Expense	35,100.60	37,080.67
Net Ordinary Income	2,633.34	-6,689.29
Net Income	2,633.34	-6,689.29



CITY OF DOUGLAS

Community Service Grant "Aid to Others" Quarterly Report - Fiscal Year 2025

The quarterly report is a requirement of your continued Community Service Grant funding per your Community Service Grant agreement. Failure to provide this report may result in no disbursement of funds. You may complete this financial section or attach your own financial statement. This information will be shared with City Council as part of a regular Council meeting. Submit completed quarterly reports with attachments (if applicable) to the Administrative Services Department.

1. Organization/Company Name: High Country Behavioral Health		2. Phone Number: 307-885-9883
3. Complete Address: 389 Adams St. Afton WY, 83110-0389		
4. Email Address: mistya@hcbh.org ranellee@hcbh.org		
5. Report for Quarter (check one): Ending March 31 ☐ Ending June 30 ☐ Ending September 30 ☒ Ending December 31 ☐		
6. Number of People Served for Quarter: 278	7. Total Income: \$672,701.14	8. Total Expenditures: \$505,163.58
9. Please list activities, events, completed goals, or other such information for the quarter you are reporting on (attach additional page(s) if necessary):		
10. Please list any other information you would like Douglas City Council to be aware of.		

CERTIFICATION AND SIGNATURE

I hereby certify the above information to be true and correct to the best of my knowledge.

Kipp L. Dana, CEO
AUTHORIZED SIGNATURE

10/3/2024

DATE OF REPORT

Kipp Dana
PRINTED NAME

TO BE COMPLETED BY CITY

Date Received:	Reviewed By:
	Report Complete? YES ☐ NO ☐



CITY OF DOUGLAS

Community Service Grant "Aid to Others" Quarterly Report - Fiscal Year 2023

The quarterly report is a requirement of your continued Community Service Grant funding per your Community Service Grant agreement. Failure to provide this report may result in no disbursement of funds. You may complete this financial section or attach your own financial statement. This information will be shared with City Council as part of a regular Council meeting. Submit completed quarterly reports with attachments (if applicable) to the Administrative Services Department.

1. Organization/Company Name: <u>Wyoming Child and Family Development</u>		2. Phone Number: <u>307-836-2751 ext #1004</u>
3. Complete Address: <u>126 N Wyoming Ave., Guernsey, Wyoming 82214</u>		
4. Email Address: <u>marissa.reber@wyomingchild.org</u>		
5. Report for Quarter (check one): Ending March 31 ☐ Ending June 30 ☐ Ending September 30 ☒ Ending December 31 ☐		
6. Number of People Served for Quarter:	7. Total Income: <u>\$0,407.97</u>	8. Total Expenditures: <u>\$0,407.97</u>
9. Please list activities, events, completed goals, or other such information for the quarter you are reporting on (attach additional page(s) if necessary): <u>Providing Mental Health, PT/OT, speech, language, and developmental disabilities services.</u>		
10. Please list any other information you would like Douglas City Council to be aware of. <u>We provide Developmental Disabilities Services to Douglas, Wyoming, as well as Head Start, Early Head Start, and Discovery Preschool Services.</u>		

CERTIFICATION AND SIGNATURE

I hereby certify the above information to be true and correct to the best of my knowledge.

Marissa Reber

AUTHORIZED SIGNATURE

10/9/2024

DATE OF REPORT

Marissa Reber

PRINTED NAME

TO BE COMPLETED BY CITY

Date Received:	Reviewed By:
	Report Complete? YES ☐ NO ☐



CITY OF DOUGLAS

Community Service Grant "Aid to Others" Quarterly Report - Fiscal Year 2025

The quarterly report is a requirement of your continued Community Service Grant funding per your Community Service Grant agreement. Failure to provide this report may result in no disbursement of funds. You may complete this financial section or attach your own financial statement. This information will be shared with City Council as part of a regular Council meeting. Submit completed quarterly reports with attachments (if applicable) to the Administrative Services Department.

1. Organization/Company Name: CCSD1/DOUGLAS REC CENTER		2. Phone Number: 307-358-4231
3. Complete Address: 1703 Hamilton Street, Douglas, WY 82633 Mailing: 615 Hamilton Street, Douglas, WY 82633		
4. Email Address: ndewitt@ccsd1.org		
5. Report for Quarter (check one): Ending March 31 ☐ Ending June 30 ☐ Ending September 30 ☒ Ending December 31 ☐		
6. Number of People Served for Quarter: 454 Registrations	7. Total Income: \$19,808.45	8. Total Expenditures: \$50,097.57
9. Please list activities, events, completed goals, or other such information for the quarter you are reporting on (attach additional page(s) if necessary): DRC 3/4 Grade Flag Football, DRC 5/6 Grade Flag Football, DRC Fall Volleyball 3rd - 6th Grades, DRC Fall Soccer; Fall Rugby, Flag Football are all complete. End of season expenses for Legion Baseball and Rugby. BJJ is no longer a REC activity we will pay pay Contract Instructor fees in November.		
10. Please list any other information you would like Douglas City Council to be aware of. Due to the recent turn over in rec staff. We have been unable to function at full capacity. FREE Rec Events Punt, Pass & Kick and Summer Strides have been postponed. The next session of Swim Lessons are planned for November. TOT TIME will resume in November. Rec Basketball 1/2 Grade Clinics, 3/4 Grade, 5/6 Grade will take place as normal. Brazilian Jiu-Jitsu is not longer a Rec Program. New Rec Staff include: Rec Director Nick DeWitt, Youth Programmer Jaylynn Boe, and Aquatics Director Danielle Weiss.		

CERTIFICATION AND SIGNATURE

I hereby certify the above information to be true and correct to the best of my knowledge.

Christine Sanderson

October 10, 204

AUTHORIZED SIGNATURE

DATE OF REPORT

Christine Sanderson

PRINTED NAME

TO BE COMPLETED BY CITY

Date Received:	Reviewed By:
	Report Complete? YES ☐ NO ☐



CITY OF DOUGLAS
Community Service Grant "Aid to Others"
Quarterly Report - Fiscal Year 2025

The quarterly report is a requirement of your continued Community Service Grant funding per your Community Service Grant agreement. Failure to provide this report may result in no disbursement of funds. You may complete this financial section or attach your own financial statement. This information will be shared with City Council as part of a regular Council meeting. Submit completed quarterly reports with attachments (if applicable) to the Administrative Services Department.

1. Organization/Company Name: Boys & Girls Club of Douglas		2. Phone Number: (307)358-4100
3. Complete Address: 802 Riverbend Drive - Douglas, WY 82633		
4. Email Address: joeyb@bgcdouglas.com		
5. Report for Quarter (check one): Ending March 31 ☐ Ending June 30 ☐ Ending September 30 ☒ Ending December 31 ☐		
6. Number of People Served for Quarter: 191	7. Total Income: \$192,609.12	8. Total Expenditures: \$313,189.17
9. Please list activities, events, completed goals, or other such information for the quarter you are reporting on (attach additional page(s) if necessary): Please see attached document.		
10. Please list any other information you would like Douglas City Council to be aware of. Please see attached document.		

CERTIFICATION AND SIGNATURE

I hereby certify the above information to be true and correct to the best of my knowledge.

Joey Burke
Digitally signed by Joey Burke
Date: 2024.10.15 10:06:20 -06'00'
AUTHORIZED SIGNATURE
Joey Burke
PRINTED NAME

10/15/2024
DATE OF REPORT

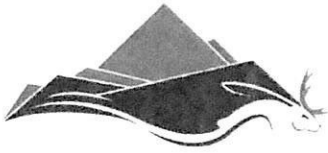
TO BE COMPLETED BY CITY

Date Received:	Reviewed By:
	Report Complete? YES ☐ NO ☐

Received

OCT 18 2024

City of Douglas



CITY OF DOUGLAS

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1. Organization/Company Name: Community Action Partnership		2. Phone Number: 307-232-0124
3. Complete Address: 606 S. David St. Casper, WY 82601		
4. Email Address: cmisplay@capnc.org		
5. Report for Quarter (check one): Ending March 31 ☐ Ending June 30 ☐ Ending September 30 ☒ Ending December 31 ☐		
6. Number of People Served for Quarter: 37 individuals 16 families	7. Total Income: 0	8. Total Expenditures: 93183
9. Please list activities, events, completed goals, or other such information for the quarter you are reporting on (attach additional page(s) if necessary): emergency shelter homeless prevention Community outreach		
10. Please list any other information you would like Douglas City Council to be aware of. We are seeing a big amount of assistance needed.		

CERTIFICATION AND SIGNATURE

I hereby certify the above information to be true and correct to the best of my knowledge.

Christy Misplay

AUTHORIZED SIGNATURE

Christy Misplay

PRINTED NAME

10/14/24

DATE OF REPORT

TO BE COMPLETED BY CITY

Date Received:	Reviewed By:
	Report Complete? YES ☐ NO ☐

Advocacy & Self-Sufficiency
606 South David Street
Casper, Wyoming 82601
PHONE: 307-232-0124
FAX: 307-232-0145
www.capnc.org



12th Street HCH Clinic
1514 East 12th Street, Unit 201
Casper, Wyoming 82601
PHONE: 307-235-6116
FAX: 307-235-0249
www.hch.capnc.org

City of Douglas,

Please find enclosed the QTR 1 report you have requested. At this time we do not have an invoice, as this is a new funding source for us and we are just now sorting out the expenses for it. Please be advised there will be a QTR 2 invoice with the report when the time comes. If you have any questions, please reach out to me.

Thank You

A handwritten signature in blue ink, appearing to read "Christy Misplay".

Christy Misplay

CAPNC Fiscal Administrator





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1. Organization/Company Name: Laramie Peak Humane Society		2. Phone Number: 307-358-6475
3. Complete Address: 612 N 2nd Street		
4. Email Address: LPHSdirector@gmail.com		
5. Report for Quarter (check one): Ending March 31 ☐ Ending June 30 ☐ Ending September 30 ☒ Ending December 31 ☐		
6. Number of People Served for Quarter: 389	7. Total Income: 45,966.41	8. Total Expenditures: 75,416.06
9. Please list activities, events, completed goals, or other such information for the quarter you are reporting on (attach additional page(s) if necessary): This past quarter we participated in the farmers market multiple times as well as Park It. We also had the needs assessment meeting for the new building.		
10. Please list any other information you would like Douglas City Council to be aware of. We realize that we are operating at a substantial deficit currently, our annual fundraiser, Paws & Pearls, is coming up in December We do have some concerns about the costs of veterinary care as it has increased annually the last 3 years by roughly 10,000 a year. We are currently exploring new revenue sources.		

CERTIFICATION AND SIGNATURE

I hereby certify the above information to be true and correct to the best of my knowledge.

Lisa Patterson Digitally signed by Lisa Patterson
Date: 2024.10.11 17:30:17 -06'00'

10/11/24

AUTHORIZED SIGNATURE

DATE OF REPORT

Lisa Patterson

PRINTED NAME

TO BE COMPLETED BY CITY

Date Received:	Reviewed By:
	Report Complete? YES ☐ NO ☐



CITY OF DOUGLAS
Community Service Grant "Aid to Others"
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1. Organization/Company Name: Children's Advocacy Project, Inc.		2. Phone Number: 307-232-0159
3. Complete Address: 350 North Ash, Casper WY 82601		
4. Email Address: stacy@childrensadvocacyproject.org		
5. Report for Quarter (check one): Ending March 31 ☐ Ending June 30 ☐ Ending September 30 ☒ Ending December 31 ☐		
6. Number of People Served for Quarter: 57 forensic interviews; 27 therapy clients; 139 individual therapy sessions	7. Total Income: Based upon most recent board approved financials: \$44,558.05	8. Total Expenditures: Based upon most recent board approved financials: \$91,883.85
9. Please list activities, events, completed goals, or other such information for the quarter you are reporting on (attach additional page(s) if necessary): CAP responded to 100% of cases referred, conducting 57 forensic interviews, six of which were for children in Converse County.		
10. Please list any other information you would like Douglas City Council to be aware of. CAP is proud to work with investigative teams in Douglas as we strive to coordinate services to child abuse victims. Thank you for the opportunity to work with your teams.		

CERTIFICATION AND SIGNATURE

I hereby certify the above information to be true and correct to the best of my knowledge.

Stacy M. Nelson
AUTHORIZED SIGNATURE

OCT 15, 2024
DATE OF REPORT

Stacy M. Nelson
PRINTED NAME

TO BE COMPLETED BY CITY

Date Received:	Reviewed By:
	Report Complete? YES ☐ NO ☐

**CONVERSE COUNTY TOURISM PROMOTION BOARD
REGULAR MEETING**

Board members: Jane Garber (6/2026, At Large) (1st full term)
J.D. Cox (6/2026, Douglas) (1st full term)
Candace Benedetta (11/2025, Glenrock) (partial)
Jenn Rasmussen (6/2027, Douglas) (1st full term)
Victor LeGloahec (6/2025, County) (1st full term)
Josh Butts (6/2025, County) (1st full term)
John Rabun (6/2027, Douglas) (1st full term)
Laurie Boner (6/2026, Glenrock) (partial)
Kris Mitchell (6/2027, County) (1st full term)

Date: September 17, 2024

Attendance Sheet:

Board Members

Jane Garber
Candace Benedetta
J.D. Cox
Jenn Rasmussen
Kris Mitchell
Josh Butts
Laurie Boner
Victor LeGloahec

Guests

Kota Provence, State Fair
Jarred Robles, State Fair
Jen Womack, Sagebrush Marketing (via zoom)
Jennifer Goodwin, Main Street Douglas
Kim Martin – Elevate Glenrock
John Moulton – Elevate Glenrock
Darren Rudloff – Rudloff Solutions (via zoom)
Glenn Gardner – Wyoming Tourism (via zoom)

Call to order: Jane Garber called the meeting to order @ 5:00 p.m. and noted that a quorum was present.

Location: Town Square Conference Center, Glenrock, WY

Grants:

- **Glenrock Christmas Shoppe** is requesting **\$2,950** for their 10th annual event. The Glenrock Christmas Shoppe will be open November 29th – December 24th. The shop is a place for many Converse County artists and craftsman to sell their goods. Attendees look forward to Wyoming made art. A motion was made to approve the request as presented.
Motion: Josh Butts Seconded: J.D. Cox Motion: Carried Abstain: Candace Benedetta
- **October Fest – Enterprise** is requesting **\$7,906.50** for advertising and signage for the 1st annual event to be held October 5th in downtown Douglas. The event will feature 5 Wyoming brewing companies and German food vendors. The presented budget was discussed. The budget was revised to only include advertising for a total of **\$3,106.50**. A motion was made to approve the revised request of **\$3,106.50** for for the event.
Motion: Victor LeGloahec Seconded: Candace Benedetta Motion: Carried Abstain: J.D. Cox, Josh Butts, Jenn Rasmussen
- **Shop Small Elf Campaign – Glenrock Main Street** is requesting **\$1,497.50** to promote Shop Local – Shop Small Elf Campaign for the Holiday Season. The campaign will run November 24th to December 21st. Last year the Elf Campaign had over 730 entries. A motion was made to approve the request as presented.
Motion: J.D. Cox Seconded: Josh Butts Motion: Carried Abstain: Candace Benedetta

State Fair Report:

- Kota Provence and Jarred Robles of the Wyoming State Fair discussed the upcoming Fair Appreciation Event to be held Oct 4, 2024 to thank Wyoming State Fair Endowment donors. Converse County Tourism Promotion Board members are invited to the event. Jarred reported that attendance numbers of the 2024 Wyoming State Fair are showing an increase from past years. Jarred also reported that the MOU pertaining to the placement of Jack and Hare-etta is still being worked on.

Sagebrush Marketing Report:

- Jen Womack discussed the fall marketing plan being implemented. Jen reported that the Destination Development Grant will need to be revised because of two of the included events, The Glenrock Games and Outdoor Expo, were rejected. Kim Martin with Elevate Glenrock presented a revised vision for each of the events. Jen also spoke on a Cowboy State Daily ad buy that could replace the two events in the Destination Development Grant. Jen will work with Kim to revise the grant request.

A motion was made to revise the Destination Development request with the updated information for the Glenrock Games and Outdoor Expo. If the events are rejected a second time, then replace one or both of the events with the Cowboy State ad buy.

Motion: Candace Benedetta Second: Victor LeGloahec Motion: Carries

Previous Month's Minutes: Minutes from August 2024 presented. Motion to approve minutes as presented.

Motion: Laurie Boner Seconded: Josh Butts Motion: Carried

Financial Report: Invoices paid in the amount of \$29,056.17. Motion to approve.

Motion: J.D. Cox Seconded: Laurie Boner Motion: Carried

New Business:

- Rudloff Solutions Training and assistance (\$10,000), Darren Rudloff with Rudloff Solutions presented a board training and consulting package offered to the Converse County Tourism Promotion Board. The Board would like to table a decision on entering into a training and consulting program at this time, CCTPB members should review the scope of work and bring to the October meeting any suggestions or comments.

Old Business:

- Insurance for Jack and Hare-ette statues: annual premium \$1,025. A motion was made to purchase the insurance for the statues at this time.

Motion: Victor LeGloahec Second: Kris Mitchell Motion: Carries

Public Comments: No public comment.

Adjournment: There being no further business, the meeting was adjourned @ 7:22 pm.

Next Meeting:

October 15, 2024 at the Memorial Hospital of Converse County administration building (222 S. 5th St.) in Douglas at 5pm

Submitted to file by: Kris Mitchell, Secretary.

Sales Tax								Using Average % of Previous Years			Using Equal Monthly Budget		
	Average %	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	% Collected	Budget	FY 24 Variance	Total Variance	FY 24 Budget	FY 24 Variance	Total Variance
July	6.86%	721,591	688,361	1,180,151	1,593,239	1,659,312	16.59%	685,885	973,427	973,427	833,333	825,979	825,979
August	7.11%	678,770	621,431	1,477,386	1,626,656	1,255,674	12.56%	710,931	544,743	1,518,170	833,333	422,341	1,248,319
September	8.09%	1,170,188	669,516	1,420,424	1,593,741	1,287,925	12.88%	809,403	478,522	1,996,692	833,333	454,592	1,702,911
October	10.08%	1,806,775	733,755	1,832,154	1,524,683	2,059,904	20.60%	1,007,837	1,052,066	3,048,758	833,333	1,226,570	2,929,481
November	8.69%	1,102,858	944,700	1,539,437	1,521,004								
December	6.91%	543,590	858,551	1,272,109	1,499,682								
January	9.16%	1,457,143	839,002	1,210,210	1,914,457								
February	10.47%	1,801,333	1,092,275	1,498,053	1,584,696								
March	7.35%	885,536	945,710	953,719	1,512,571								
April	6.90%	581,268	940,150	1,244,896	1,304,870								
May	9.59%	973,485	1,159,826	1,379,561	2,243,612								
June	8.81%	554,668	1,259,090	1,454,204	2,028,274								
Revenue		12,277,206	10,752,368	16,462,304	19,947,484	6,262,814	62.63%	10,000,000	3,048,758	3,048,758	10,000,000	2,929,481	2,929,481
Budget		7,500,000	7,500,000	8,500,000	10,000,000	12,000,000							
Month Average		1,023,100	896,031	1,371,859	1,662,290	1,565,704							

