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TERRY WILLIS
City Attorney
ERIC JOHNSON
City Recorder
JACI ADAMS
City Treasurer
BILLIE HEILESEN
Finance Director
LISA RICHENS

185 East Main - P.O. BOX 893 - PRICE, UT 84501
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www.pricecityutah.com

PRICE CITY COUNCIL

City Council
LAYNE MILLER
TANNER RICHARDSON
RICHARD ROOT
RUSSELL SEELEY
TINA URBANIK

PUBLIC NOTICE OF MEETING

Public notice is hereby given that the City Council of Price City, Utah, will hold a Regular Meeting in the Council Chambers, 185 East Main, Price, Utah, at 05:30 PM on 07/22/2026. The Mayor reserves the right to modify the sequence of agenda items in order to facilitate special needs.

1.PLEDGE OF ALLEGIANCE

2.ROLL CALL

3.SAFETY SECONDS Councilmember Urbanik

4.GENERAL BUSINESS/DISCUSSION

a. FCCLA MEMBERS RECOGNITION. FCCLA spokesperson, Zander Carrillo and FCCLA members will be in attendance to receive recognition for recently competing and earning top 10 finishes at the FCCLA National Leadership Conference in Washington, D.C.

b. FEE WAIVER REQUEST. Ashley Yakovich, Castle Valley Community Theater will be in attendance to request a fee waiver for use of the Price City Auditorium for rehearsals and performances from November 23rd to December 14th, 2026.

c. PUBLIC HEARING. Public hearing to receive input regarding the donation of the proceeds from the Liberty Gala to the American Legion.

d. DONATION. Consideration and possible approval of the donation of the proceeds from the American 250 Gala to the American Legion Post 3.

e. LANDSCAPE INCENTIVE PROGRAM. Matthew O'Brien, DNR will be in attendance to discuss a Landscape Incentive program for water conservation.

f. RESOLUTION NO. 2026-17. Consideration and possible approval of A Resolution Supporting "A Bolder Way Forward", a Statewide Initiative to Help Utah Women and Girls Thrive.

g. RESOLUTION 2026-18 ADOPTION OF CARBON COUNTY PRE-DISASTER MITIGATION PLAN 12/10/2025. Consideration and possible approval to adopt the Carbon County Pre-Disaster Mitigation Plan 12/10/2025 as Price City's current Pre-Disaster Mitigation Plan

h. RESOLUTION NO. 2026-19. Consideration and possible approval of A Resolution Adopting a Price City Owned Space Rental Fee Schedule and Policy.

5.CONSENT AGENDA

a. MINUTES for 07-08-2026 City Council Workshop and City Council.

b. BILLBOARD DECLARATION OF SURPLUS AND GIFT TO USU-E. Consideration of declaration of the Price City owned billboard along Highway 6 as surplus to the needs of Price City and further authorize its donation/gift to Utah State University-Eastern.

c. MANAGING DEFENDER AGREEMENT. Consideration and possible approval of the 2026-2027 managing public defender services agreement between Price City and Robert Oliver.

d. INTERLOCAL AGREEMENT. Consideration and possible approval of an Interlocal Agreement for the Provison of Indigent Defense Services between Price City and Carbon County, $8300/month.

e. LANDOWNER-OPERATOR RESTORATION AGREEMENT. Consideration and possible approval of a Landowner-Operator Restoration Agreement. Agreement is the final step of reclamation of real property owned by Price City that contained a gas well operated by Costal Plains Energy in the Miller Creek area (mineral lease dollars to Price City). Well has been closed, removed and Price City Public Works has verified the reclamation of the site.

f. TRAVEL REQUESTS. Jennifer Christensen, TAC Conference, September 13-16, 2026, St. George, UT. Brandon Rigby, Stopping Online Child Predators, August 12-14, 2026, Sandy, UT. Debbie Worley, SWAVO Quarterly Training, September 8-10, 2026, St. George, UT.

g. BUSINESS LICENSES. Tony and Tina Guerras Farms at 59 E 100 N (fresh produce stand)

6.PUBLIC COMMENTS (LIMITED TO TWO MINUTES PER PERSON/NO ACTION TAKEN ON DISCUSSED ITEMS)

7.UNFINISHED BUSINESS

Note: In compliance with the Americans with Disabilities Act, individuals needing special accommodations during this meeting should contact the City Recorders Office at 185 E. Main Price, Utah, telephone 435-636-3183 at least 24 hours prior to the meeting.

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FEE WAIVER REQUEST

Price Municipal Corporation
Facility Rental Agreement
P.O. Box 893~~~185 East Main Street, Price, UT 84501 Phone: 435-636-3180 Fax: 435-637-2905

Organization Name: Castle Valley ~~Center~~ Community Theater

Person Responsible for Event: Ashley Yakovich

Phone: (435)650-9793 Cell: Same

Address: 2035 E Main St City, State ZIP Wellington, UT 84542

Reservation Start Date(s) Start Time(s) ~~8:30am~~ 2:30pm End Time(s) ~~8pm~~

Reservation End Date(s) Start Time(s) End Time(s)

Nov. 23-25 ~~5:30pm~~ 8pm
Nov. 30th - Dec 4 - 5:30-~~8pm~~
Dec. 7-9 5:30-8pm
(Rehersals)

RENTAL FEES CANNOT BE REFUNDED

Rental Fees (Monday-Thursday)

	Fees Per Hour	Fees Per Day	Total
Meeting Room #106	$10.00	$40.00	
Meeting Room #207	$10.00	$40.00	
Peace Garden	$10.00	$40.00	
PWC Meeting Room	$10.00	$40.00	
Civic Auditorium	$25.00	$180.00	
		Total	$

Rental Fees (Friday-Sunday)

	Fees Per Hour	Total Per Day
Meeting Room #106	$20.00	$80.00
Meeting Room #207	$20.00	$80.00
Peace Garden	$20.00	$80.00
PWC Meeting Room	$20.00	$80.00
Civic Auditorium	$40.00	$250.00
Total	$	

Equipment Rental	Cost
Package #1	
Staff/Operators Large Projector Front Projection Hard Screen	$450.00
Package #2	
Staff/Operators 25' Inflatable Screen Speaker/Projector Pkg	$650.00
Individual Equipment Rental	
Hard Projection Hard Screen	$300.00
25' Inflatable Screen	$500.00
Microphone(s)	$10.00
Class Room Projector	$25.00
Total Equipment Rental Fees:	$

DEPOSITS

Cleaning Deposits	Cost
1- 50 People	$50.00
51-100 People	$100.00
101-150 People	$150.00
151+ People	$200.00

Cleaning Deposit $

Other Items Needed

	QTY		QTY
Seminar Table(s)		Dry Erase Board	
Work Table(s)		Electronic Board	
Chairs		TV/DVD/VCR	
Network		Extension Cords	

PreSormace
Dec 10, 11, 14 - 5:30pm - 10pm
Dec 12 - 12:30 - 10pm

Sub-Total: $

Reduction: $

Total Rental Fee: $

Please read and sign the Terms and Conditions on the Back of this Page

Clean-up
Dec 15 - 4 - 6pm

Notice of Public Hearing

The Price City Council will conduct a public hearing on Wednesday, July 22nd, 2026 at 5:30pm in the city council chambers at Price City hall, located at 185 E Main Street, Price, UT 84501, to receive input regarding the donation of the proceeds raised at the Liberty Gala to the American Legion.

Published in the Emery Telcom News on July 15th, 22nd, 2026

[Quoted text hidden]

--

Nick Tatton
Price City
435-636-3184
nickt@priceutah.gov

Megan Marshall <meganm@priceutah.gov> Thu, Jul 9, 2026 at 10:46 AM
To: Nick Tatton <nickt@priceutah.gov>

It will be $1,000 donated to the American Legion

Sent from my iPhone

> On Jul 9, 2026, at 10:06 AM, Nick Tatton <nickt@priceutah.gov> wrote:
>
> [Quoted text hidden]

Nick Tatton <nickt@priceutah.gov> Thu, Jul 9, 2026 at 10:54 AM
To: Megan Marshall <meganm@priceutah.gov>

Ok, thanks. I'll have it set up for city council meeting on 7-22-26. Thanks Megan.

Nick Tatton
Price City
435-636-3184
nickt@priceutah.gov
[Quoted text hidden]

RESOLUTION NO._____

A RESOLUTION SUPPORTING "A BOLDER WAY FORWARD," A STATEWIDE INITIATIVE TO HELP UTAH WOMEN AND GIRLS THRIVE

WHEREAS, the Utah Women & Leadership Project at Utah State University developed and leads *A Bolder Way Forward,* a framework designed to help Utah women and girls thrive; and,

WHEREAS, Price City recognizes the importance of supporting *A Bolder Way Forward* to strengthen opportunities for women and girls in Utah; and,

WHEREAS, Utah women were the first in the nation to cast ballots under an equal suffrage law, reflecting our state's history of leadership in advancing women's voices and opportunities; and,

WHEREAS, Price City recognizes that when women and girls have access to health, safety, freedom, education, equal representation, and fair employment, all Utahns, including men, boys, and families, thrive; and,

WHEREAS, Price City may utilize the research and policy guidance provided by *A Bolder Way Forward* to inform decisions that elevate women in Utah; and,

WHEREAS, Price City embraces the mission of *A Bolder Way Forward* and supports actions that ensure women and girls can thrive, strengthening the community as a whole;

NOW, THEREFORE, BE IT HERBY RESOLVED BY THE PRICE CITY COUNCIL AS FOLLOWS:

Section 1. Month Designation. That January 2027 is hereby declared *"A Bolder Way Forward Month"* in Price City.
Section 2. Promotion of "A Bolder Way Forward" Objectives. That the Price City Council will support policies and outreach that advance women's and girls' health, safety, education, workplace equality, and community engagement.
Section 3. City Designation. Price City is hereby designated a *Bolder Way Forward City* in Utah, committed to enhancing the well-being of women and girls and, in turn, all residents.
Section 4. Severable. That any portion of this Resolution or the actions contemplated by the resolution determined to be unenforceable shall be severable from the other portions and those portions shall remain in full force and effect.
Section 5. Repealer. That any prior actions in conflict with this action are hereby repealed.
Section 6. Effective Date. That this resolution shall become effective upon its passage by the Price City Council on the date entered below.

PASSED AND ADOPTED BY THE PRICE CITY COUNCIL ON THIS _____ DAY OF _____, 2026.

_____
Terry Willis, Mayor

ATTEST:

_____
Jaci Adams, City Recorder

Carbon County, Utah
Pre-Disaster Mitigation Plan

Final

Edit Date: 12/10/25

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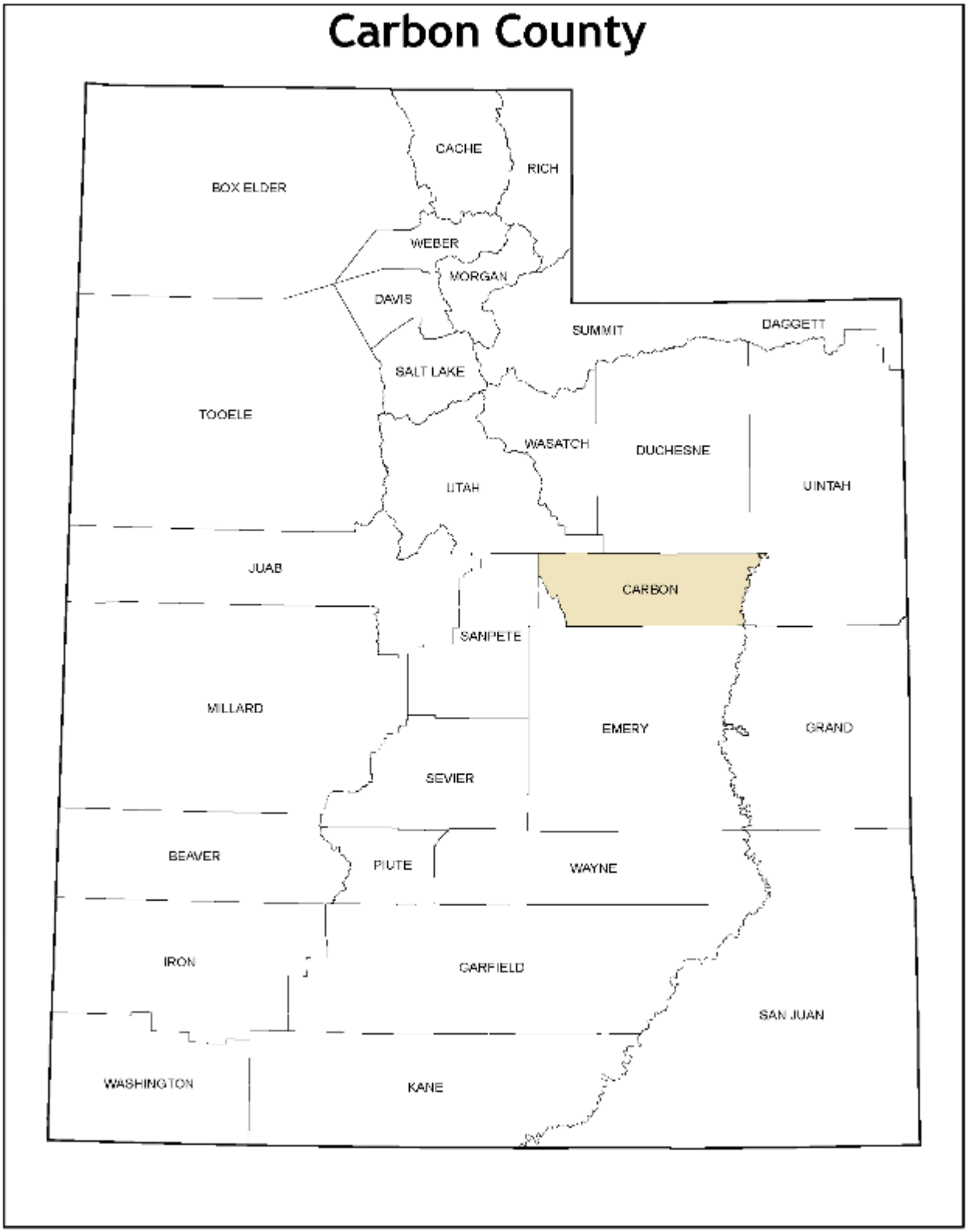
Carbon County



1.0 Executive Summary

1.1 Welcome to the 2024 Carbon County Pre-Disaster Mitigation Plan

This Plan represents an update of the PDM Plan that was approved by the cities, County, the State and by FEMA in 2018. After an extensive review to incorporate the most current demographic data, maps, vulnerability assessments, and mitigation projects, this 2024 Carbon County Pre-Disaster Natural Hazards Mitigation Plan (PDM) has been created to update the prior PDM plan created in 2018. Development pressures in hazard areas have and will continue to increase the risk to residents.

The entire plan was reviewed and analyzed by the planning team throughout the planning process and again at the final draft stage before submission to the state and FEMA. This review incorporated the revision of names, critical facilities, hazard history, and economic development throughout the region over the previous five years. Other changes include a reorganization of the mitigation goals, objectives, and actions for ease in reading and for more clearly identifying projects. There have been some minor changes to appendices and general maintenance parts, however there were no changes to background history and data which continues to accurately reflect the region.

1.2 How to Use this Plan

As with the original Pre-Disaster Mitigation Plan (PDM), this update was developed and organized within the rules and regulations established under 44 Code of Federal Regulations (CFR), Section 201.6. The Plan contains a discussion on the purpose and methodology used to develop the Plan, a profile on communities within Carbon County, as well as a hazard identification study and a vulnerability analysis of nine potential natural hazards. To assist in the explanation of the contents there are several appendices included to provide more detail on specific subjects. This is intended to improve the ability of communities within Carbon to respond to emergencies and disasters. It will also document valuable local knowledge on the most efficient and effective ways to reduce loss and enable the County to develop projects that provide for both the safety of their populations and the protection of the environment.

1.3 Plan Mission

The Carbon County Pre-Disaster Natural Hazard Mitigation Plan was created with the goal of substantially and permanently reducing the County's vulnerability to natural hazards through sound public policy. By increasing public awareness of potential harm, documenting resources for risk reduction and loss-prevention, and identifying activities to guide the development of less vulnerable and more sustainable communities, the Pre-Disaster Natural Hazard Mitigation Plan aims to protect citizens, critical facilities, infrastructure, private property, and the natural environment.

1.4 Changes in Community Priorities Since 2018

The priorities for hazard mitigation in Carbon County have evolved since the 2018 plan based on changing conditions, recent events, and new information:

1. Shift Toward Multi-Hazard Mitigation:
    - Previous focus was primarily on wildfire and flooding.

    - Current plan emphasizes integrated approaches that address multiple hazards simultaneously.
    - Enhanced priority on projects that provide multiple benefits.
2. Infrastructure Resilience:
    - Previous emphasis was on new construction.
    - Current focus includes retrofitting and hardening existing infrastructure.
    - Greater priority on critical facility protection.
3. Climate Adaptation:
    - The previous plan had limited consideration of climate impacts.
    - Current priorities include preparing for more extreme weather events.
    - Enhanced focus on drought resilience and water conservation.
4. Vulnerable Populations:
    - The previous plan had limited focus on social vulnerability.
    - Current priorities emphasize protecting vulnerable populations.
    - Enhanced consideration of equity in mitigation actions.
5. Regional Coordination:
    - The previous plan focused primarily on individual jurisdictional actions.
    - Current priorities emphasize regional collaboration and resource sharing.
    - Enhanced focus on coordinated emergency response.

The following summarizes specific priority changes by jurisdiction:

- Carbon County:
    - Previous: Emphasis on wildfire protection.
    - Current: Enhanced focus on multi-hazard mitigation and infrastructure resilience.
    - Reason for Change: Recent experiences with multiple concurrent hazard events.
    - These priority changes directly influenced plan revisions by shifting focus from single-hazard mitigation actions to more integrated, multi-benefit approaches. The county's experience with multiple concurrent hazard events prompted a comprehensive review of all mitigation actions, resulting in the development of new multi-hazard strategies that address infrastructure resilience through an all-hazards lens. This is reflected in the revised mitigation action plan that now emphasizes critical facility hardening projects that address multiple hazards simultaneously.
- East Carbon/Sunnyside:
    - Previous: Focus on flooding mitigation.
    - Current: Increased emphasis on water system resilience.
    - Reason for Change: Recent drought conditions and aging infrastructure.
    - Recent drought conditions revealed critical vulnerabilities in the community's water supply system that weren't fully identified in the previous plan. Extended dry periods highlighted insufficient storage capacity and deteriorating distribution infrastructure that could no longer meet peak demands during water shortages. Concurrently, engineering assessments conducted

in 2021-2022 documented accelerating deterioration of aging water infrastructure components. These revelations necessitated a significant revision of mitigation priorities, leading to the development of new water system resilience projects including reservoir improvements, leak detection programs, and secondary water source development that weren't contemplated in the 2018 plan.

- Helper:
    - Previous: Historic preservation priorities.
    - Current: Balance of preservation with hazard mitigation.
    - Reason for Change: Recent seismic risk assessments.
    - The shift toward balancing historic preservation with hazard mitigation was informed by a comprehensive seismic risk assessment completed in 2020, which identified significant vulnerabilities in the city's historic downtown district. This assessment demonstrated that many historic structures could be lost during even a moderate earthquake, prompting a fundamental reconsideration of previous mitigation strategies. The revised plan now includes specialized mitigation actions that preserve historic character while enhancing structural integrity, an approach not addressed in the 2018 plan which treated seismic risks more generally.
- Price:
    - Previous: Economic development focus.
    - Current: Integration of hazard mitigation with development.
    - Reason for Change: Recognition of development in hazard-prone areas.
    - The changing emphasis toward integrating hazard mitigation with economic development was driven by an analysis of development patterns since 2018, which revealed increased construction in previously identified hazard zones. This trend highlighted the need for mitigation measures that work in harmony with, rather than against, economic growth objectives. The revised plan now incorporates hazard mitigation strategies into development standards and infrastructure improvement projects, representing a more integrated approach than the separate treatment these elements received in the 2018 plan.
- Scofield:
    - Previous: Seasonal resident protection.
    - Current: Year-round hazard mitigation.
    - Reason for Change: Increasing year-round activities.
    - The shift toward year-round hazard mitigation reflects the changing usage patterns of this traditionally seasonal community. Data collected between 2018-2022 showed a 36% increase in winter visitation and a growing number of properties transitioning from seasonal to year-round occupancy. This changing settlement pattern exposed gaps in the previous plan's focus on seasonal risks, necessitating comprehensive revisions to hazard assessments and mitigation strategies. The revised plan now addresses winter access challenges, expanded fire protection needs, and enhanced emergency services that weren't contemplated in the seasonal-focused approach of the 2018 plan.
- Wellington:
    - Previous: Infrastructure expansion.

    - Current: Infrastructure protection and resilience.
    - Reason for Change: Aging infrastructure assessment.
    - The transition from infrastructure expansion to protection and resilience was informed by a comprehensive infrastructure assessment completed in 2021. This assessment documented critical vulnerabilities in existing systems that had been previously overlooked while pursuing expansion projects. The findings necessitated a fundamental reprioritization of mitigation efforts, with the revised plan now emphasizing maintenance, hardening, and redundancy for existing infrastructure rather than the expansion focus that characterized the 2018 plan's approach to infrastructure.
- Carbon School District:
    - Previous: Focus on fire safety.
    - Current: Multi-hazard facility protection.
    - Reason for Change: Comprehensive facility assessment.
    - The evolution toward multi-hazard facility protection was driven by a comprehensive facility assessment conducted in 2019-2020. This assessment revealed potential vulnerabilities to multiple hazard types that weren't fully captured in the previous plan's fire-focused approach. The revised plan now incorporates specific mitigation actions addressing seismic safety, flood protection, and severe weather resilience for school facilities, representing a significant broadening of scope from the 2018 plan which primarily addressed wildfire risk.
- Price River Water Improvement District:
    - Previous: Water quality protection.
    - Current: System resilience and redundancy.
    - Reason for Change: Recent drought impacts.
    - The shift toward system resilience and redundancy was prompted by the 2018-2021 drought's impact on water quality and availability. This extended dry period created operational challenges that highlighted vulnerabilities not previously identified, particularly regarding system interdependencies during water shortage conditions. The revised plan now includes specific mitigation actions for creating system redundancies, alternative supply routes, and flexible operational capabilities that weren't contemplated in the 2018 plan's more limited focus on water quality protection.

2.0 Plan Purpose and Use

2.1 Introduction

Utah is vulnerable to natural and technological (human-caused) hazards that threaten the health, welfare and security of our citizens. The cost of response and recovery from potential disasters can be substantially reduced when attention is turned to mitigating their impacts and effects before they occur.

Hazard mitigation is defined as any cost-effective action that has the effect of reducing, limiting, or preventing vulnerability of people, property, and/or the environment to potentially damaging, harmful, or costly hazards. Hazard mitigation actions, which can be used to eliminate or minimize the risk to life and property, fall into three categories: first, those that keep the hazard away from people, property and structures; second, those that keep people, property and structures away from the hazard; and third, those that do not address the hazard at all but rather reduce the impact of the hazard on the victims such as insurance.

Hazard mitigation actions must be practical, cost effective, environmentally and politically acceptable. Actions taken to limit the vulnerability of society to hazards must not in themselves be more costly than the anticipated damages.

Capital investment decisions must be considered in conjunction with natural hazard vulnerability. Capital investments can include homes, roads, public utilities, pipelines, power plants, chemical plants, warehouses and public works facilities. These decisions can influence the degree of hazard vulnerability of a community. Once a capital facility is in place, few opportunities will present themselves over the useful life of the facility to correct any errors in location or construction with respect to hazard vulnerability. It is for these reasons that zoning ordinances, which could restrict development in high-vulnerability areas, and building codes, which could ensure that new buildings are built to withstand the damaging forces of hazards, are the most useful mitigation approaches that a city or county can implement.

Often, hazard mitigation may be a neglected aspect within emergency management. When local governments place a low priority on mitigation implementation activities relative to the perceived threat, some important mitigation measures may be neglected in favor of higher-priority activities. Mitigation success can be achieved, however, if accurate information is portrayed through complete hazard identification and impact studies, followed by effective mitigation management. Hazard mitigation is the key to greatly reducing long-term risk to people and property from natural hazards and their effects. Preparedness for all hazards includes response and recovery plans, training, development, management of resources and the need to mitigate each jurisdictional hazard.

2.2 Purpose

The purpose of this Plan are to (1) identify natural hazard threats to the community, (2) create mitigation strategies to address those threats, (3) develop short- and long-term mitigation planning goals and objectives, and (4) to fulfill federal, state and local hazard mitigation planning obligations.

Mitigation actions would serve to minimize threats that have an undesirable impact on the citizens, economy, and environment of Carbon County. This Plan is intended to enhance the awareness and to provide mitigation strategies for elected officials, agencies, and the public, and develop actions that will minimize negative outcomes to Carbon County's citizens, the economy, and the environment due to potential natural hazard threats. The Plan also details what actions can be taken to help prevent or reduce hazard vulnerability to each

jurisdiction. The well-being of the county and local communities rests on reducing risks to life and property in the event of a natural hazard event.

2.3 Project Scope

The Carbon County Natural Hazards Pre-Disaster Mitigation (PDM) Plan was developed in accordance with the requirements of the FEMA Section 322 regulations, the Utah Division of Emergency Management (DEM) and local planning agencies. The goal of this Plan is to assist Carbon County in reducing the costs of natural disasters by providing comprehensive hazards identification, risk assessment, vulnerability analysis, mitigation strategy and implementation schedule. Regulations set forth by FEMA were followed during the development of this Plan. Future monitoring, evaluating, updating and implementation will occur annually or following any natural disaster. A major revision will occur every five years. Annual or any interim Plan review, updates and revisions will be the responsibility of each adopting jurisdiction. The plan provides comprehensive natural hazard identification, risk assessment, vulnerability analysis, mitigation actions, and an implementation schedule.

2.4 Entity Overview

Carbon County is the 20th largest county, within the State of Utah, in terms of land area and is made up of five municipalities: East Carbon/Sunnyside City, Helper City, Price City, Scofield Town, and Wellington City. Carbon County is in the mid-eastern portion of the State.

Table 2.4.1: Annual Estimates of the Resident Population for Carbon County, Utah (US Census)

Year	2010	2015	2020	2022 (Est.)
Carbon County Unincorporated	2,207	6,685	7,203	6,617
East Carbon/ Sunnyside City	1,678	1,606	1,543	1,539
Helper City	2,206	2,099	2,104	2,071
Price City	13,612	8,371	8,288	8,267
Scofield Town	24	23	27	27
Wellington City	1,676	1,615	1,595	1,594
Carbon County Totals	21,403	20,399	20,760	20,115

2.5 Participating Jurisdictions

The Plan will be adopted by the County following FEMA Region VIII approval. The list below identifies the communities and authorities that participated in the planning process and will adopt the Plan. All of these jurisdictions are seeking plan approval. Each of the municipal jurisdictions also participated informally in and adopted the previous PDM Plan Update in 2018, but Carbon County was the only formal stakeholder.

Participating Jurisdictions in Carbon County

- **East Carbon / Sunnyside City**
- **Helper City**
- **Price City**
- **Wellington City**
- **Scofield Town**
- **Carbon County School District**
- **Price River Water Improvement District**

A sample of the adoption resolution, as well as links to the individual support and adoption resolutions are given at the end of this section. A list of invited special service districts, local agencies, non-governmental organizations, etc. and a sample of the invite is available in Appendix D.

3.0 The Planning Process

3.1 Overview

As with the original Pre-Disaster Mitigation Plan (PDM), this update was developed and organized within the rules and regulations established under 44 Code of Federal Regulations (CFR), Section 201.6. The Plan contains a discussion on the purpose and methodology used to develop the Plan, a profile on communities within Carbon County, as well as a hazard identification study and a vulnerability analysis of nine potential natural hazards. To assist in the explanation of the above-identified contents there are several appendices included to provide more detail on specific subjects. This is intended to improve the ability of communities within Carbon to respond to emergencies and disasters. It will also document valuable local knowledge on the most efficient and effective ways to reduce loss and enable the County to develop projects that provide for both the safety of their populations and the protection of the environment.

3.2 Goals & Objectives

The goals and objectives of the PDM Plan include coordinating with local governments to develop a County planning process that meets each planning component identified in the FEMA Region VIII Crosswalk document, Utah Division of Emergency Management (DEM) planning expectation and local input. Another goal is to meet the need of reducing risk from natural and technological hazards in Utah through the implementation of and updating of County plans.

The following is a list of goals and objectives of this Plan:

- Life safety protection.
- Eliminate and/or reduce property damage.
- Protect emergency response capabilities (critical infrastructure).
- Protect/create communication and warning systems.
- Protect emergency medical services and medical facilities.
- Ensure mobile resource survivability.
- Protect critical facilities.
- Ensure government continuity.
- Protect developed property, homes, businesses, industry, education opportunities and the cultural fabric of a community. Combine hazard loss reduction efforts with the environmental, social and economic needs of the community.
- Protect natural resources and the environment.
- Promote public awareness through education of community hazards and mitigation measures.
- Preserve and/or restore natural features.
- Eliminate or reduce long-term risk to human life and property.
- Aid private and public sectors in understanding the risks they may be exposed to and identify mitigation strategies to reduce those risks.
- Avoid risk of exposure to natural and technological hazards.
- Minimize the impacts of risks that cannot be avoided.
- Mitigate the impacts of damage as a result of identified hazards.

- Accomplish mitigation strategies in such a way that negative environmental impacts are minimized.
- Provide a basis for prioritizing and funding mitigation projects.
- Establish a County platform to enable the community to take advantage of shared goals and resources.

3.2.1 Hazard-Specific Goals

Earthquakes

- Reduce vulnerability of existing buildings through retrofitting.
- Ensure new construction meets seismic standards.

Flooding

- Protect life and property in flood-prone areas.
- Improve stormwater management systems.

Wildfire

- Create defensible space in the wildland-urban interface.
- Enhance firefighting capabilities.

Landslides

- Reduce development in high-risk areas.
- Stabilize existing vulnerable slopes.

Drought

- Improve water conservation.
- Develop redundant water sources.

Dam Failure

- Enhance early warning systems.
- Strengthen emergency response protocols.

Problem Soils

- Identify risk areas.
- Implement appropriate building standards.

Severe Weather

- Improve warning systems.
- Enhance critical facility protection.

Infestation

- Protect life and property against infestation.
- Implement appropriate building standards.

Each goal supports the plan's overall mission of reducing vulnerability to natural hazards through sound public policy.

3.3 Planning Process

The development of the 2024 Carbon County Pre-Disaster Mitigation Plan followed a structured 18-month process from June 2022 through December 2024. The process began with a kickoff meeting between Carbon

County Emergency Management and the consulting team in June 2022, followed by a public stakeholder kickoff meeting in September 2022.

The core planning team, consisting of County Emergency Management staff and consultants, met monthly throughout the process to coordinate activities and review progress. These regular meetings ensured consistent advancement of the plan while maintaining alignment with FEMA requirements and local needs.

Between January and June 2023, the team conducted individual meetings with each participating jurisdiction to gather specific hazard and mitigation information. This approach allowed for focused attention on each community's unique circumstances and needs. Concurrent with these meetings, the team developed the hazard profiles and risk assessments using the latest available data and modeling.

From July through September 2023, a draft plan was made available for initial public review and comment. The planning team incorporated feedback received during this period into a revised draft. A second public review period was conducted from April 15 to May 17, 2024, after which final revisions were made based on public input. The final draft was submitted to Utah DEM for their initial feedback in June 2024.

3.4 Public Involvement

Public involvement opportunities were available and incorporated throughout the development of this Plan. Such opportunities included a public website (CarbonHazardPlan.org), social media campaigns, and public meetings for comment review. The development of this plan was conducted utilizing an online interaction to ensure that stakeholders had equal access to the developing information throughout the process. Public announcements and social media posts used to inform the community about the plan development process are documented in Appendix D.8.

The public engagement strategy was designed to reach all segments of the community through multiple channels:

Online Engagement: The project website served as a central information hub, providing:

- Regular plan updates and draft documents
- Interactive hazard maps
- Online surveys in both English and Spanish
- Virtual public meeting access
- Comment submission forms

In-Person Engagement: The planning team conducted outreach through:

- Public meetings at various locations throughout the county
- Presentations at community events and local gatherings
- Focus groups with vulnerable populations
- Mobile outreach stations at high-traffic community locations like libraries and community centers

Emergency managers, fire and sheriff departments, state and local agencies, business leaders, educators, non-profit organizations, private organizations, and other interested members that could be affected by a hazard within the region or other interested members, were all a part of the planning process.

Special attention was given to ensuring participation from traditionally underserved populations through:

- Partnerships with local social service agencies and community organizations

- Multilingual outreach materials and translation services
- Flexible meeting schedules to accommodate various work schedules
- Selection of accessible meeting venues
- Transportation assistance when needed

Public feedback was systematically incorporated into the plan through:

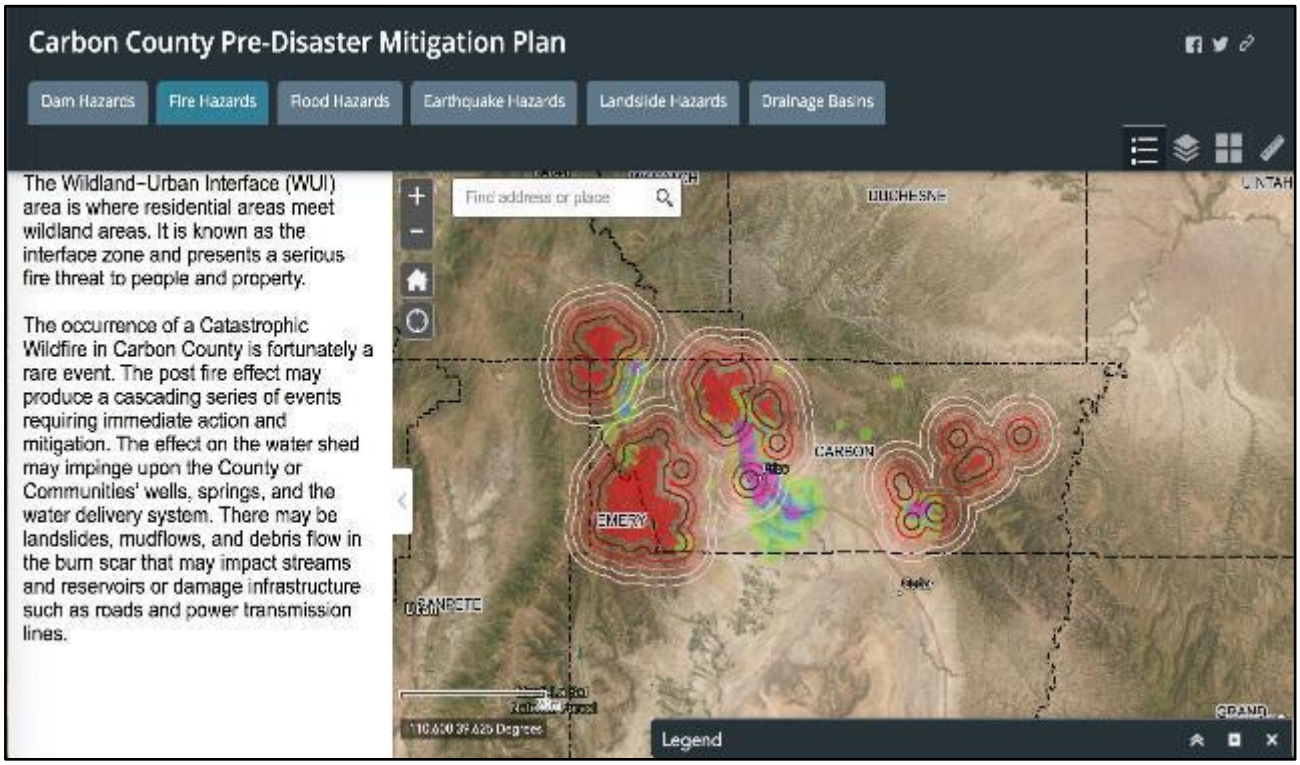
- Documentation of all public comments received
- Regular review of input by the planning team
- Incorporation of public suggestions into hazard profiles and mitigation strategies
- Written responses to public concerns in plan revisions

3.5 Plan Participation

Plan participation was completed as a result of a collaborative effort between Utah Department of Public Safety Division of Emergency Management, County Emergency Manager, Fire Departments, Carbon County Sheriff's Office, Public Works Department, Planning Commission, Assessor's Offices, geographic information systems (GIS) departments, special service districts, school districts, City, County, and State GIS Departments, Elected Officials, Public Employees, Utah Division of Forestry, Fire and State Lands, and Citizens of the cities and towns within Carbon County. Special attention was given to ensure inclusion of underserved communities.

Interviews were conducted with stakeholders from the communities and workshops were conducted during the Plan development phase. Feedback was solicited through the Carbon County Pre-Disaster Natural Hazard Mitigation Plan Working Group during the plan development. Additionally, through public hearings, workshops and draft Plan displays, ample opportunity was provided for public participation (including vulnerable populations, and review of the 2018 PDM Plan on the Carbon County website (See Appendix D for meeting agendas and attendance lists). All comments, questions, and discussions resulting from these activities were given thoughtful consideration as the plan was developed.

Feedback from the Public was greatly considered throughout the process. A public comment period was held from July 15, 2023 through September 1, 2023, and again from April 15 to May 17, 2024. The website hosting software does not provide traffic data for the site. However, no comments were made on the draft during the 2023 public comment period. If comments were made they would have been discussed among the Core Planning Team and then a course of action would have been implemented to resolve the comments within the working draft. Upon completion of the public comment period, any suggestions that were deemed unnecessary were compiled for further review.



Screenshot of the GIS storymap that was compiled with hazard-related information for the area.

Beyond the regular sessions convened by the county's task force, numerous discussions took place involving state officials and representatives from various municipalities. Leadership figures such as mayors, members of councils, and municipal employees generously contributed their time. Their focus was on devising feasible strategies for mitigation that would align with their unique requirements. The following outlines the diverse entities that engaged with Carbon County in the course of updating this plan, utilizing various communication methods including face-to-face meetings, emails, and calls or video conferencing:

- Utah Division of Emergency Management
- Federal Emergency Management Agency
- National Weather Service
- National Climate Data Center
- Carbon County Emergency Manager, Justin Needles
- Carbon County Sheriff's Office
- Rural Community Consultants and Jones & DeMille Engineering (Consultant)
- Carbon County agencies including:
  - Public Works
  - Local Emergency Planning Committee (LEPC)
  - Fire Departments
  - School Districts
  - Special Service Districts
  - Water Conservancy District

3.6 Community Capabilities

Carbon County and the municipalities of East Carbon City, Helper City, Price City, Scofield Town, Wellington City, the Carbon County School District, and the Price River Water Improvement District face many challenges to improve the natural hazard mitigation efforts and sustain the Carbon County Pre-Disaster Natural Hazards Mitigation 2018 Plan. The following capabilities have been identified for consideration for discussion and strengthening to implement and sustain the plan.

While Table 3.6.1 shows varying capabilities across jurisdictions, each entity maintains core authorities essential to hazard mitigation. Smaller jurisdictions often rely on county resources or regional partnerships to enhance their capabilities. The Carbon School District and Price River Water District maintain specialized capabilities focused on their specific service areas and infrastructure systems.

3.6.1 Stakeholder Capabilities Inventory

The following table is an inventory of mitigation capabilities that were outlined in the FEMA Hazard Mitigation Plan Guidance (Community Capability Assessment Worksheet).

REGULATORY TOOLS	Co	ECC	H	P	S	W	CS	PRW
Building Codes	Y	Y	Y	Y	Y	Y	n/a	n/a
BCEGS Rating	dev	dev	dev	dev	dev	dev	n/a	n/a
Capital Improvements Plan	Y	Y	Y	Y	Y	Y	Y	Y
Climate Change Adapt Plan	N	N	N	N	N	N	N	N
Community Wildfire Plan	Y	N	N	N	N	N	N	N
General Plan	Y	Y	Y	Y	Y	Y	n/a	n/a
Economic Development Plan	Y	N	Y	Y	N	N	n/a	n/a
Emergency Ops Pan	Y	Y	Y	Y	Y	Y	N	Y
Floodplain Management Plan	Y	N	N	Y	N	N	n/a	n/a
NFIP	Y	Y	Y	Y	Y	Y	n/a	n/a
Site Plan Review Requirements	Y	Y	Y	Y	Y	Y	n/a	n/a
Stormwater Plan	Y	N	N	Y	N	N	n/a	N
Subdivision Ordinance	Y	Y	Y	Y	Y	Y	n/a	n/a
Transportation Plan	Y	dev	Y	Y	N	N	Y	n/a
Zoning Ordinance	Y	Y	Y	Y	Y	Y	n/a	n/a
ADMIN/TECHNICAL RESOURCES	**Co**	**ECC**	**H**	**P**	**S**	**W**	**CS**	**PRW**
Code Enforcement Dept	N	N	N	N	N	N	n/a	n/a
Community Planner	Y	N	N	Y	N	N	n/a	n/a
Emergency Manager	Y	N	N	N	N	N	Y	N

Engineering Dept	Y	N	N	Y	N	N	Y	Y
Floodplain Administrator	Y	N	N	N	N	N	n/a	n/a
GIS Coordinator	Y	N	N	Y	N	N	N	N
Grant Administrator/Writer	Y	N	N	N	N	N	Y	N
Resiliency Planner	Y	N	N	N	N	N	Y	N
Transportation Planner	N	N	N	N	N	N	N	N
FINANCIAL RESOURCES	Co	ECC	H	P	S	W	CS	PRW
Capital Improvement Pgm	Y	Y	Y	Y	Y	Y	Y	Y
General Obligation Bonds	Y	Y	Y	Y	Y	Y	Y	Y
Impact Fees	N	Y	Y	Y	dev	dev	n/a	dev
Utility Fees	Y	Y	Y	Y	Y	Y	n/a	Y
EDUCATION + OUTREACH RESOURCES	Co	ECC	H	P	S	W	CS	PRW
Public Outreach (Emergency Mgt)	Y	Y	Y	Y	Y	Y	Y	N
Stormready Certification	N	N	N	N	N	N	N	N

Note(1) that for the stakeholders, "CO" refers to Carbon County, "ECC" is East Carbon City, "H" is Helper, "P" is Price City, "S" is Scofield Town, "W" is Wellington, "CS" is the Carbon School District, and "PRW" refers to the Price Water District.

Note(2) that "dev" means that this resource is being developed or requested because the stakeholder didn't have that information readily available.

Note(3) that for special service districts, capabilities are assessed based on their specific service areas. N/A indicates the capability is outside the district's statutory authority.

Each jurisdiction's ability to expand and improve their capabilities varies based on resources and constraints:

Carbon County maintains strong potential to expand capabilities through:

- Grant writing and administration.
- Regional partnerships.
- Staff training programs.
- Technology upgrades.

Municipalities face varying constraints:

- Price and Helper: Moderate expansion potential through existing staff and budgets.
- East Carbon/Sunnyside, Wellington, Scofield: Limited by small staff/budget but can expand through partnerships.

Special Districts:

- Carbon School District: Can expand through capital planning and state funding.
- Price River Water: Can expand through rate adjustments and infrastructure grants.

3.6.2 Financial Capability Summary:

Neither Carbon County nor the municipalities of Helper City, Price City, Wellington City, and East Carbon City maintain a natural hazard mitigation specific fund or funding mechanism. The county does participate in an agreement with Utah Fire, Forestry and State Lands and has developed a Community Wildfire Preparedness Plan. This agreement provides for some mitigation funding that must be spent on fuel reduction in Carbon County.

The challenge as acknowledged in the Carbon County General Plan is 60% of the county is governed by other Federal or State government agencies and 40% of the county is providing the tax base for county and municipal services.

3.6.3 Planning and Technical Services Capability Summary:

The planning and technical capabilities of Carbon County and the municipalities are impacted by the limited tax base as the hiring of professional staff is often unattainable. The elected officials and appointed staff perform many of the tasks normally completed by professional staff members. The county and municipalities often contract out for specific planning documents such as Master Plans, General Plans, and Zoning Ordinances. The Southeast AOG is an organization the county can reach out to for assistance with planning and technical services. See Appendix (G) for the comprehensive list of GIS hazard mitigation capability and staffing at the local level.

3.6.4 Administration Capability Summary:

Carbon County has an elected County Commission consisting of three commissioners. The emergency manager is assigned multiple duties that include developing the CWPP, supervising the Carbon County HazMat Team, developing and conducting multifunctional exercises, and other duties as assigned. The county has a Building and Zoning Department with a building inspector. The elected Sheriff provides law enforcement services throughout the county and the unincorporated towns with a limited staff. Helper City, Price City, and Wellington City do provide law enforcement services. The fire and EMS first responders are full-time staff along with the volunteer Search & Rescue organization within the county. The county does maintain a Road Department. The municipalities have an elected mayor and city council with their own planning and zoning departments, except for East Carbon City. East Carbon City does not have a planning and zoning department. The ability of Carbon County and the municipalities to expand the funding opportunities, roles, and responsibilities beyond the current capability of implementing and sustaining the Pre-Disaster Natural Hazards Mitigation 2018 Plan is constrained by the limited tax base.

3.7 Community Asset Data

Background information and data for this Plan was obtained from the sources listed below. From these sources, the Planning Consultant extracted relevant information and data. That information and data was subsequently submitted to the Carbon County Working Groups for their consideration and approval for inclusion into the Plan. See appendix (H) for a complete list of GIS data sources.

4.0 Stakeholder Participation

4.1 Outreach and Participation

The Carbon County PDM Plan update process involved extensive outreach to ensure comprehensive participation from various entities. We categorized participants into three distinct groups: Participating Jurisdictions, Stakeholders, and the General Public. Each group was presented with specific opportunities for involvement in the planning process.

Participating Jurisdictions include local governments and special districts within Carbon County. These entities were integral to the planning process and were invited to participate actively (see Appendix D.2 for a sample invitation letter). The list of Participating Jurisdictions and their involvement can be found in Appendix D.3.

Stakeholders were identified and invited based on their roles in hazard mitigation and community resilience. The following categories of stakeholders were identified with the intent to engage them:

1. Local and Regional Agencies involved in Hazard Mitigation Activities:
    - Public works departments
    - Emergency management offices
    - Local floodplain administration
    - GIS departments
2. Agencies with Authority to Regulate Development:
    - Zoning and planning departments
    - Community and economic development departments
    - Building officials
    - Planning commissions
    - Relevant elected officials
3. Neighboring Communities:
    - Adjacent local governments
    - Special districts
4. Representatives of Businesses, Academia, and Other Private Organizations:
    - Private utilities
    - Major employers that sustain community lifelines
    - Higher education institutions operating within the county
5. Representatives of Nonprofit Organizations:
    - Community-based organizations working with underserved communities and socially vulnerable populations
    - Housing agencies
    - Healthcare providers
    - Social service agencies
    - Churches and community organizations

4.2 Engagement Tools and Methods

4.2.1 Online Engagement

The development of this Plan primarily utilized online interactions:

1. Initiative Website: A dedicated website was modified to ensure all jurisdictions and stakeholders had access to requested and generated information. Each jurisdiction was given a specified place to obtain and submit information.

2. Social media add campaign: To spread awareness of the website, ads were run on social media, targeting stakeholders and the public and advertising the Plan update initiative.

3. Public Comment Period: The general public was given access to the plan (as a google doc) during the designated public comment period. No public comments were received.

4.2.2 In-Person Engagement

Stakeholder meetings were the primary form of in-person interaction. These included:

1. Core Planning Team Meetings: Regular meetings between Carbon County Emergency Management and Rural Community Consultants.

2. One-on-One Stakeholder Meetings: In-person and online (phone and/or video conference) meetings were held with various stakeholders to maintain project momentum and keep communities engaged.

4.2.3 Direct Outreach

Participating jurisdictions and identified individuals representing key stakeholders were contacted directly and made aware of the Plan update initiative to ensure maximum participation (see Appendix D).

4.2.4 Inclusion of Vulnerable Populations

The County's population includes certain vulnerable populations (see Appendix G.2). The Planning Team attempted to reach these vulnerable populations through the avenues described in this Section 4.2. Additionally, these populations' interests were represented by the various stakeholders who participated in the Plan update.

4.3 Core Planning Team Meetings

The Core Planning Team consists of Carbon County Emergency Management and Rural Community Consultants to discuss updates and plans for future assignments (e.g. goals, timelines/ deadlines, etc.). Due to the fact that the plan was ongoing with many stakeholders working to move forward, the agenda for these items remained relatively unchanged throughout the process.

Listed are dates of the Core Planning Team meetings along with an example of the running agenda:

- Progress reports
- Assignment from last meeting
- Engagement from stakeholders
- New mapping and current hazard identification
- Research, how to complete assignments to FEMA standards
- Goals (both current plan related and updates from 2018 plan and progress)

- Public involvement + website development
- Upcoming timelines and deadlines
- Upcoming action items for stakeholders

4.4 Stakeholder and Participating Jurisdiction Engagement

Detailed information on stakeholder and participating jurisdiction engagement, including invited entities, public announcements, meeting agendas, and attendance sheets, can be found in Appendix D. This includes:

- One-on-One Stakeholder Meetings (Appendix D.6)

- Local Emergency Planning Committee (LEPC) meetings, which included various stakeholders from categories mentioned in section 4.1.2

4.5 Invited Partners/Entities

One of the critical elements of the County PDM Plan update was to invite participation from a number of stakeholders including jurisdictions, businesses, agencies, nongovernmental organizations, the general public including underserved communities and vulnerable populations, etc. (a sample invitation letter is shown in Appendix D). The tables in that Appendix show each invited stakeholder with contact information and how/if they responded.

The planning team identified neighboring counties and invited their emergency management offices to participate. During FEMA's review process, it was identified that the Ute Indian Tribe of the Uintah and Ouray Reservation should have been included as a neighboring community. The Tribe was provided the final draft plan on December 4, 2025 for review and comment prior to final adoption, and any feedback we receive will be amended into the final plan.

4.6 Stakeholder Engagement Tools

The development of this Plan utilized mostly online interactions, with only stakeholder meetings taking place in-person. An initiative website was modified in a way that helped ensure that all jurisdictions had access to the information that was being requested and generated. Each jurisdiction was given a specified place to obtain and submit information. This ensured that each stakeholder had the same access to the information presented during meetings.

Communication was also facilitated with the use of civiclinQ.com (see Appendix D.9 for screenshot). Each part of the plan was digitized into this format, and links were shared with stakeholders who were able to make tracked comments and suggestions within the text. These comments were reviewed and incorporated by the core planning team throughout the initiative. The public was also given access to do the same during the public comment period. No public comments were received.

4.7 Typical Meeting Agenda for Core Planning Team

The Core Planning Team consists of Carbon County Emergency Management and Rural Community Consultants to discuss updates and plans for future assignments (e.g. goals, timelines/ deadlines, etc). Due to the fact that the plan was ongoing with many stakeholders working to move forward, the agenda for these items remained relatively unchanged throughout the process. Listed are dates of the Core Planning Team meetings along with an example of the running agenda:

- Progress reports

    - Assignment from last meeting
    - Engagement from stakeholders
    - New mapping and current hazard identification
    - Research, how to complete assignments to FEMA standards
- Goals (both current plan related and updates from 2018 plan and progress)
- Public involvement + website development
    - Upcoming timelines and deadlines
    - Upcoming action items for stakeholders

4.8 Stakeholder Meeting Attendance

The following information illustrates the major contact points related to the meetings and assignments related to the PDM project. Invited stakeholders, public announcements, meeting agendas and attendance sheets can be found in Appendix D.

4.8.1 One-on-One Stakeholder Meetings

In order to help maintain the project momentum and to keep communities engaged toward the conclusion of the plan development phase, in-person and online (phone and/or video conference) stakeholder meetings were held between County Emergency Management, the planning consulting team, and the various stakeholders. During these meetings, various aspects of the planning process were discussed, including progress on tasks, goals, deadlines, ideas to incorporate, etc. See Appendix D.6 for one-on-one meeting attendance list.

During these meetings, various aspects of the planning process were discussed, including progress on tasks, goals, deadlines, ideas to incorporate, etc. See Appendix D.6 for one-on-one meeting attendance list.

5.0 Plan Development & Adoption

5.1 Monitoring, Evaluation + Updating The Plan

Periodic monitoring and evaluation of this Plan are required to ensure that the goals and objectives for the region are kept current and that local mitigation strategies are being carried out. This Plan has been designed to be user-friendly in terms of maintenance and implementation.

5.2 Annual Review Procedures

Local jurisdictions will review this Plan annually, or more frequently as situations dictate, such as following a disaster declaration. If the participating jurisdictions or DEM determines that a modification of the Plan is warranted, an amendment to the Plan may be initiated.

5.2.1 Implementation Monitoring Framework

1. Quarterly Progress Reviews:
    - Each jurisdiction's designated mitigation coordinator will:
        - Track status of all mitigation actions.
        - Document completed milestones.
        - Identify implementation challenges.
        - Update project timelines.
        - Coordinate with responsible departments.
        - Prepare quarterly summary reports.
2. Annual Implementation Review:
    - County Emergency Management will coordinate annual meetings to:
        - Review action status across all jurisdictions.
        - Document completed projects.
        - Assess effectiveness of completed actions.
        - Identify new implementation opportunities.
        - Update project priorities.
        - Adjust timelines as needed.
3. Documentation Requirements:
    - Standard tracking forms for all mitigation actions including:
        - Project description.
        - Lead responsibility.
        - Timeline.
        - Funding sources.
        - Current status.

    - Implementation challenges.
    - Outcomes and effectiveness.
    - Photos and supporting materials.

4. Progress Indicators:
    - Quantitative metrics:
        - Number of completed actions.
        - Funds invested.
        - Properties protected.
        - Structures mitigated.
    - Qualitative assessments:
        - Implementation challenges.
        - Coordination effectiveness.
        - Public engagement success.
        - Lessons learned.
5. Data Management:
    - Centralized tracking system maintained by County Emergency Management.
    - Regular updates from all participating jurisdictions.
    - Annual compilation of monitoring data.
    - Secure storage of all documentation.
    - Public accessibility of non-sensitive information.

5.3 Revisions + Updates

Each emergency manager in the county will regularly monitor and annually review the Plan and is responsible to make revisions and updates. The annual review is required to ensure that the goals and objectives for the Region are kept current. More importantly, revisions may be necessary to ensure the Plan is in full compliance with Federal regulations and State statutes. This portion of the Plan outlines the procedures for completing such revisions and updates. The Plan will also be revised to reflect lessons learned or to address specific hazard incidents arising out of a disaster.

Note that the previous hazard plan was developed with the County as the primary stakeholder. Most of the goals in that plan were focused at the county-level. The approach to this Plan has diverged from the previous one in the sense that the goals (and analysis) are based on smaller-scale stakeholders, primarily municipalities.

5.4 Five Year Plan Review

The entire Plan, including any background studies and analysis, shall be revised and updated every five years to determine if there have been any significant changes in the region that would affect the Plan. Increased development, increased exposure to certain hazards, the development of new mitigation capabilities or techniques and changes to Federal or State legislation are examples of changes that may affect the condition of the Plan.

The Natural Hazard Pre-Disaster Mitigation Planning Committee and Local Working Group, with a potential membership representing every jurisdiction in Carbon County, will be reconstituted for the five year review/update process. Typically, the same process that was used to create the original Plan will be used to prepare the update.

If the participating jurisdictions or DEM determine that the recommendations warrant modification to the Plan, an amendment may be initiated as described below.

5.4.1 Five-Year Update Process

1. Update Coordination:
    - County Emergency Management will initiate the update process 18 months before plan expiration.
    - A planning team will be reconvened representing all participating jurisdictions.
    - A detailed update schedule will be established and distributed.
2. Risk Assessment Updates:
    - Review and update hazard profiles with new data and occurrences.
    - Incorporate new mapping and modeling results.
    - Update vulnerability assessments with current asset information.
    - Evaluate changes in development patterns and their impact on risk.
    - Document changes in priority hazards.
3. Capability Assessment Updates:
    - Review and update capability assessments for each jurisdiction.
    - Document changes in staffing, resources, and technical capabilities.
    - Evaluate effectiveness of existing authorities and policies.
    - Identify new opportunities for capability enhancement.
    - Update assessment of training and resource needs.
4. Progress Review:
    - Evaluate implementation status of all mitigation actions.
    - Document completed projects and their outcomes.
    - Assess effectiveness of completed actions.
    - Identify implementation challenges and lessons learned.
    - Update cost-benefit considerations based on actual project costs.
5. Strategy Updates:
    - Review and revise mitigation goals and objectives.
    - Update mitigation actions based on current conditions.
    - Develop new actions to address identified gaps.
    - Ensure actions reflect current priorities and capabilities.

- Update implementation schedules and responsibilities.

6. Stakeholder and Public Engagement:
    - Conduct comprehensive outreach to all stakeholders.
    - Hold public meetings in each jurisdiction.
    - Provide online engagement opportunities.
    - Document all participation and feedback.
    - Incorporate stakeholder and public input into updates.
7. Plan Review and Adoption:
    - Complete internal review of draft updates.
    - Submit to State and FEMA for review.
    - Address review comments.
    - Obtain adoption from all participating jurisdictions.
    - Document adoption and maintain records.

5.5 Plan Amendments

The Utah DEM State Hazard Mitigation Officer, Local Mitigation Committee, or Mayor/City Manager of an affected community, will initiate amendments and updates to the Plan.

Upon initiation of an amendment to the Plan, DEM will forward information on the proposed amendment to all interested parties including, but not limited to, all affected City or County departments, residents and businesses. Depending on the magnitude of the amendment, the full planning committee may be reconstituted.

At a minimum, the information will be made available through public notice in a newspaper of general circulation or on the DEM website at dem.utah.gov. The review and comment period for the proposed Plan amendment will last for not less than 45 days.

At the end of the comment period, the proposed amendment and all review comments will be forwarded to participating jurisdictions for consideration. If no comments are received from the reviewing parties within the specified review period, such will be noted accordingly. DEM will review the proposed amendment along with comments received from other parties and submit a recommendation to FEMA within 60 days.

In determining whether to recommend approval or denial of a Plan amendment request, the following factors will be considered:

1. There are errors or omissions made in the identification of issues or needs during the preparation of the Plan; and/or
2. New issues or needs have been identified which were not adequately addressed in the Plan; and/or
3. There has been a change in information, data or assumptions from those on which the Plan was based.
4. The nature or magnitude of risks has changed.
5. There are implementation problems, such as technical, political, legal or coordination issues with other agencies.

Upon receiving the recommendation of DEM, a public hearing will be held. DEM will review the recommendation (including the factors listed above) and any oral or written comments received at the public hearing. Following that review, DEM will take one of the following actions:

1. Adopt the proposed amendment as presented.
2. Adopt the proposed amendment with modifications.
3. Defer the amendment request for further consideration and/or hearing.
4. Reject the amendment request.

5.6 Implementation Through Existing Programs

Once the Plan is promulgated, participating jurisdictions will be able to include this Plan's information in existing programs and plans. These could include the General or Master Plan, Capital Improvements Plan, Emergency Operations Plan, State Mitigation Plan, City Mitigation Plans. Many of the mitigation actions developed by the cities and counties have elements of mitigation implementation including the National Flood Insurance Program (NFIP), the Utah Wildland-Urban Interface Code, the Building Code Effectiveness Grading System (BCEGS), and Community Rating System (CRS), all of which have been implemented.

Each jurisdiction implements hazard mitigation through its existing authorities, as detailed in Table 3.6.1. The Carbon School District implements mitigation primarily through its facilities management program and emergency planning processes. The Price River Water Improvement District implements mitigation through its infrastructure planning, capital improvements program, and emergency response protocols.

5.6.1 Integration Framework Recommendation

1. Planning Integration:
    - Incorporate hazard data into comprehensive plan updates.
    - Include mitigation actions in capital improvement programs.
    - Reference mitigation priorities in departmental strategic plans.
    - Align zoning and development codes with hazard areas.
    - Coordinate mitigation goals with sustainability initiatives.
2. Operational Integration:
    - Include mitigation considerations in permit review processes.
    - Incorporate hazard assessments in site plan reviews.
    - Reference mitigation requirements in building inspections.
    - Align public works projects with mitigation priorities.
    - Coordinate emergency planning with mitigation goals.
3. Budgetary Integration:
    - Include mitigation projects in annual budget processes.
    - Identify funding sources for mitigation activities.
    - Coordinate grant applications with mitigation priorities.
    - Track mitigation investments across departments.

- Leverage existing programs for mitigation funding.

4. Administrative Integration:
    - Assign integration responsibilities to specific positions.
    - Include mitigation duties in job descriptions.
    - Provide training on integration requirements.
    - Establish coordination procedures between departments.
    - Document integration activities and outcomes.

5.6.2 Jurisdictional Integration Processes

Recognizing that jurisdictions have different staffing levels, technical capabilities, and planning resources, the following matrix outlines how each will integrate hazard mitigation into their local planning mechanisms based on their unique organizational capacity:

Jurisdiction	Primary Planning Tools	Responsible Parties	Integration Methods + Timeline
Carbon County	• General Plan (and County Resource Mgt Plan) • Building Code Updates • Capital Projects List	• County Commission • Planning Commission • Emergency Manager	• Monthly coordination meetings • Quarterly reports • Timeline: 2024-2026
East Carbon / Sunnyside	• General Plan • Emergency Operations Plan • Infrastructure Master Plans • Capital Improvement List	• Mayor • City Council / Planning Commission • Public Works staff	• Budget process • Timeline: 2024-2026
Helper	• General Plan • Emergency Operations Plan • Infrastructure Master Plans • Historic District Plan • Capital Improvement List	• Mayor • Public Works staff	• Council workshops • Budget process • Timeline: 2024-2026
Price City	• General Plan • Infrastructure Master Plans • Downtown Plan • Capital Improvement List	• City Council and Planning Commission • City Engineer / Public Works staff • Planning Director	• Project review checklist • Annual work program • Timeline: 2024-2025
Scofield	• Town Plan • Emergency Plan	• Mayor • Town Council	• Council meetings • Staff coordination • Timeline: 2025-2026

Wellington	• General Plan • Emergency Operations Plan • Infrastructure Master Plans • Capital Improvement List	• Mayor • City Council / Planning Commission • Public Works staff	• Budget process • Timeline: 2024-2026
Carbon School Dist	• Facility Plan • Emergency Operations Plan	• Facilities Director	• Safety Committee • Board updates • Timeline: 2024-2025
Price River Water	• System Master Plan • Capital Program	• General Manager	• Board meetings • Staff training • Timeline: 2024-2025.
***Note: Each jurisdiction will customize their integration methods based on their unique organizational structure, capacity, and needs. This matrix represents primary mechanisms but is not exhaustive.**			

5.7 Process

It will be the responsibility of the Mayor/Council/Commissioner(s) of each jurisdiction, as they see fit, to ensure these actions are carried out no later than the target dates unless reasonable circumstances prevent their implementation (i.e. lack of funding availability).

5.8 Capability Assessments

This assessment analyzes current capacity to mitigate the effects of natural hazards and emphasizes the positive capabilities that should be continued. Carbon County has elected to conduct a hazard and capabilities analysis.

The following areas were assessed to determine mitigation capabilities:

1. Staff and Organization
2. Technical
3. Fiscal
4. Policies and Programs
5. Land Use Management
6. Legal Authority
7. Political Willpower

The planning team considered a comprehensive range of potential mitigation actions across four main categories: (1) local plans and regulations, (2) structure and infrastructure projects, (3) natural systems protection, and (4) education and awareness programs. This approach ensured that various types of solutions were examined for each identified hazard. A complete list of the types of actions considered can be found in Appendix M.

5.9 Mitigation Action Prioritization

Carbon County and participating jurisdictions used a practical approach to prioritize mitigation actions based on several key factors that emphasize maximizing benefits relative to costs. The Planning Committee evaluated each proposed mitigation action using the following prioritization criteria:

- **Life Safety** – Does the action protect lives and prevent injury?
- **Property Protection** – Does the action reduce damage to structures and infrastructure?
- **Technical Feasibility** – Can the action be implemented with existing resources and capabilities?
- **Cost-Effectiveness** – Do the benefits of the action outweigh its costs?
- **Environmental Impact** – Does the action have positive or neutral environmental effects?

Actions were classified as High, Medium, or Low priority based on a qualitative assessment that considered:

- **High Priority**: Actions that address severe or widespread hazards, provide immediate protection to life and property, can be implemented in the short-term (1-2 years), and have funding sources identified or readily available.
- **Medium Priority**: Actions that address significant but less severe hazards, provide important but less urgent protection, can be implemented in the mid-term (3-4 years), and have potential funding sources identified.
- **Low Priority**: Actions that address less significant hazards, provide long-term protection, require extended implementation timeframes (5+ years), or have limited funding opportunities currently identified.

This prioritization approach ensures that each jurisdiction directs available resources toward the most critical and effective mitigation actions while maintaining flexibility to address unique local circumstances.

5.10 Staff & Organizations

5.10.1 City and County Elected Officials

The Carbon County Commission consists of three members. Each of the five cities has a mayor and a city council, consisting of five members, which governs the municipality. The elected officials have the responsibility of adopting mitigation policies. Cities and counties receive their legal authority to govern from the State of Utah.

5.10.2 Carbon County General Capabilities

Listed below is a general organizational list of County/City governmental administrative areas involved in Pre-Disaster mitigation (see full capabilities list in Appendix I):

- Elected officials
- City Managers
- County and City Attorneys
- County Assessors
- County Clerks
- Human Services/Personnel Directors
- County and City Treasurers/ Finance
- Public Works Departments
- County and City Planning/GIS Departments
- County Health Department

- Police and Fire Departments
- County Emergency Management
- Special Improvement Districts

5.10.3 Emergency Management

Carbon County has an emergency management director. The emergency management director is responsible for natural and man-made hazard mitigation, preparedness, response, and recovery operations.

The sample resolution (see 5.16.4) was provided to local emergency managers. They were asked to convert it into the format of their municipal resolutions. Copies of enacted resolutions were sent back to the PDM planning team.

5.10.4 Local Emergency Planning Committee (LEPC)

The mission of the Carbon County LEPC is to commit to increasing community safety through planning, public education, and collaboration. The Carbon County LEPC will bring together local governments, first responders, and private industry to work together to prepare for and mitigate, respond to, and recover from all hazards. We will interact with the public to ensure it is well informed and prepared. We will contribute to the safety and resilience of the community.

The Carbon County LEPC is composed of elected officials; law enforcement, emergency management, firefighting, emergency medical services, health, local environmental, hospital and transportation personnel; broadcast and print media; community groups; and owners and operators of hazardous chemical facilities that are required by federal law to have hazardous chemical emergency planning. Carbon County has an active LEPC.

5.10.5 Fire/Emergency Medical Services

Most of the cities in Carbon County have fire departments. Following a national trend, Carbon County has an agreement with each of the City fire departments to provide service to the unincorporated parts of Carbon County. There are two multi-jurisdiction fire districts in Carbon County that were formed with the goal to better provide fire and emergency medical services.

5.10.6 Public Works

Divisions within public works often include streets, engineering, water, power, wastewater and sanitation. The Carbon County public works department has undertaken a number of mitigation projects in the county. Several municipal public works departments have also participated in hazard mitigation, primarily in the form of stormwater and watershed management projects.

5.10.7 Health Care

Carbon County's hospitals, medical facilities and the Southeastern Utah District Health Department provide medical emergency preparedness and response. The health department assesses health hazards caused by damage to sewer, water, food supplies or other environmental systems. It also provides safety information, assesses disaster related mental health needs and services, and provides crisis counseling for emergency workers. Short of a pandemic disease outbreak, the health department will likely continue to adequately staff, train, and fund its mission.

5.10.8 School District

The Carbon School District has more than 3,513 students in 9 schools. District administrators work closely with local public safety officials including law enforcement, fire emergency medical services, and public health to help ensure that schools are well prepared for any kind of emergency.

5.10.9 Special Service Districts

For the purposes of this Plan, Special Service Districts (SSD) are defined as quasi-governmental agencies having taxing authority, providing a specific public service that may include; public transportation, fire, water, wastewater and sewer. These SSD's work closely with local public safety officials to ensure that these Districts are well prepared for any kind of emergency. In many cases, the districts participate in the County or City emergency preparedness committee for emergency coordination, planning and response.

The Price River Water Improvement District is the only SSD referenced in this plan. They are the provider of drinking water and sewer services to residents and businesses in the Price River valley.

5.10.10 Subject Matter Experts

The professional planning staff, who were responsible for supervising the plan update process and developing both the preliminary and final plan documents, accomplished this with significant contributions from:

- Utah Division of Emergency Management
- Federal Emergency Management Agency
- National Weather Service
- National Climate Data Center
- Carbon County Emergency Manager, Justin Needles
- Carbon County Sheriff's Office
- Rural Community Consultants and Jones & DeMille Engineering (Consultant)
- Carbon County agencies including;
    - Public Works
    - Local Emergency Planning Committee (LEPC)
    - Fire Departments
    - School Districts
    - Special Service Districts
    - Water Conservancy District

5.11 Technical Capability

Throughout the plan update process, Carbon County staff consulted with and utilized the technical expertise from a wide variety of resources listed below:

5.11.1 Jurisdiction Technical Expertise

Carbon County and all of the municipalities either employ or contract with planners, emergency managers, building inspectors, housing specialists, and engineers as needed.

5.11.2 Geographic Information Systems (GIS)

For GIS capabilities, Carbon County is supported by an in-house GIS staff (with three dedicated employees), and the State and local partners who are capable of providing important data to this planning process. (GIS capabilities are often found in other departments such as public works or information technology). GIS is most beneficial when data from all departments and planning jurisdictions is inputted for analysis.

5.11.3 GIS Information Sources

Background information and data for this Plan was obtained from the sources listed Appendix H. From these sources, the Planning Consultant extracted relevant information and data. That information and data was subsequently submitted to the Carbon County Working Groups for their consideration and approval for inclusion into the Plan.

5.11.4 Public Safety Communications (PSC)

Public safety communications networks assure emergency communications through radio, microwave, telephone, satellite, internet, e-mail, fax, and amateur radio. One of the most beneficial capabilities of PSC is providing cross-communication between equipment and frequencies. PSC coordinates dissemination of emergency information to the media, the public, and emergency personnel; activates internal information systems; acts as a liaison to elected officials; assists in the provision of emergency information and documents the impact.

5.11.5 Public Works

Public works departments generally provide engineering, transportation, GIS, water, wastewater, sanitation (and in some cases electric power) expertise and capability. As a team, public works personnel identify critical infrastructure and plan and prepare for emergency mitigation.

5.11.6 Utah Division of Emergency Management (Utah DEM)

Utah DEM assists Carbon County in providing information on preparing for, responding to, and recovering from emergencies. DEM serves as the liaison between local, state and federal emergency assistance. DEM also educates the public about earthquakes, hazardous materials, floods, communications, leadership, information technology, funding, coordination and supplies.

5.11.7 Utah State University (USU) Cooperative Extension

The USU Extension Service assisted with family and community data in putting research-based knowledge to work. Many of the programs and informational courses improve pre-disaster mitigation.

5.11.8 University of Utah

The University of Utah was utilized as a technical resource for academic mitigation research and demographic data (particularly through the Kem C. Gardner Institute).

5.12 Fiscal Capability

Carbon County has limited fiscal capabilities to implement mitigation strategies. Carbon County and most of its jurisdictions have provided some level of matching funds for federal grants in the past.

Utah State Code Section 17-50-501 classifies counties into six categories based on population. The State of Utah grants graduated autonomy to counties according to class size.

5.13 Policies + Programs

Connecting local land use management with natural hazard planning is an effective way to mitigate a community's risk. Many communities have plans, ordinances, agreements, maps, training, warning systems, etc. in place that help them to become more disaster resistant. One of the goals of this Plan is for communities to coordinate existing activities so that individual objectives become part of an overall plan of action.

5.14 Land Use Management Tools

5.14.1 Ordinances

- Zoning ordinances designate the use of land and structures for the purpose of protecting the health, safety and welfare of residents and businesses. A zoning ordinance divides all land within a jurisdiction into zones or related uses. The zoning ordinance consists of two parts; the text and maps. Specific zones are usually created for residential, commercial, industrial and government uses. The map defines the boundaries of these zones and the text provides the regulations for uses that are permitted to exist in each of the zones.
- Subdivision ordinances regulate all divisions and improvements of property including the division of land involving the dedications of new or changes of existing streets/roads.
- Design controls regulate building and landscaping. Such controls can be tailored to require that new developments meet the specific needs of the area. For example, requiring flame resistant roofs in urban-rural wildland fire interface zones or requiring that trees and vegetation are planted on steep slopes to help mitigate landslide hazards.
- Floodplain ordinances prevent building in special flood hazard areas and provide flood loss reduction measures to new and existing development. Floodplain management ordinances help to provide insurance to homes and businesses through the National Flood Insurance Program (NFIP). The NFIP's Community Rating System was implemented to encourage cities to manage floodplain activities that exceed the minimum NFIP standards. A community participating in the system will receive reductions in insurance premiums.
- Building codes require certain standards of practice.

5.14.2 Easements

Easements can be a cost effective way to control development in hazard-prone areas. Various land trusts can help secure easements that can then be conserved or preserved.

5.14.3 Planning

- General plans serve as a guide for decision-making on rezoning and other planning proposals and as the goals and policies of municipalities attempting to guide land use in local jurisdictions. Each plan is recommended to include land use, transportation, environment, public service and facilities, rehabilitation, redevelopment, conservation, and economics. Also recommended are implementing recommendations including the use of zoning ordinances, subdivision ordinances, capital improvement plans, and other suitable actions that the municipality deems appropriate. General plans articulate the jurisdiction's vision while land use management codes implement that vision. General plans and land use management codes are being consulted, reviewed, and changed as necessary.
- Emergency Operations Plans (EOPs) identify specific emergency actions undertaken by a jurisdiction to mitigate the loss of lives and property immediately before, during, and following an emergency. The Carbon County Emergency Operations Plan EOP was reviewed as part of this planning process.
- Floodplain Management Plans identify steps and implementation strategies to effectively deal with floodplains. FEMA uses a scoring system that is used to rate communities. Those with higher scores will receive higher discounts (in 5% increments) on flood insurance.

- Stormwater Management Plans identify water policies for an entire watershed. Such policies can include: the preservation of habitats, water quality and supply, open space development, land preservation, pollution prevention, and construction regulations.
- Environmental Reviews explain how development affects the land and its resources.
- Capital Improvement Plans. Cities plan for costs related to infrastructure, public facilities, and public safety. These plans identify projects, prioritize them and identify ways of funding them. Such plans can include disaster reduction costs or mitigation measures in flood-prone areas or retro-fitting buildings for seismic strengthening.

The jurisdictions that make-up this region have incorporated various mitigation measures. The following tables identify, by municipality, existing land use ordinances, management practices and plans currently in place.

Table 5.14.3.1 - Natural Hazard and Environmental Planning, Carbon County

	East Carbon	Helper	Price	Scofield	Wellington	Carbon County
Emergency Ops Plan	Yes	Yes	Yes	No	Yes	Yes
Stormwater Plan	No	No	Yes	No	No	No
Annexation Policy Plan	No	Yes	Yes	No	No	No
General Plan: Land Use	Yes	Yes	Yes	No	Yes	Yes
General Plan: Transportation	Yes	Yes	Yes	No	Yes	No
General Plan: Housing	Yes	Yes	Yes	No	Yes	Yes
Regional Transportation	Yes	Yes	Yes	Yes	Yes	Yes
Wildfire Plan (CWPP)	Yes	Yes	Yes	Yes	Yes	Yes

Table 5.14.3.2 - Natural Hazard & Environmental Quality Ordinances, Carbon County

	East Carbon	Helper	Price	Scofield	Wellington	Carbon County
Avalanches	No	No	No	No	No	No
Earthquakes, Faults, Geologic Hazards	No	No	No	No	No	No
Floodplains	Yes	Yes	Yes	No	Yes	Yes
Foothills & Canyons	No	No	No	No	No	No
Groundwater	No	No	No	No	No	No
Habitat	No	No	No	No	No	No
Lakes, Streams, Riparian	No	No	No	No	No	No

Landslides	No	No	No	No	No	No
Mountains & Forest Zones	No	No	No	No	No	No
Pollution & Air Quality (General Plan)	Yes	Yes	Yes	Yes	Yes	Yes
Prime Agricultural Lands	No	No	No	No	No	No
Ridgelines	No	No	No	No	No	No
Sensitive Lands	No	No	No	No	No	No
Steep Slopes	No	No	No	No	No	Yes
Watersheds	No	No	No	No	No	Yes
Wetlands (Army Corps)	No	No	No	No	No	No
Wildland Fire (WUI)	No	No	No	No	No	Yes

5.14.4 Building Codes

International and national building codes have been adopted by all jurisdictions in the County. These codes are constantly in review for reasonable mitigation for disasters. Locally, building officials lobby for additions or exceptions to international and/or national building codes according to local conditions. Most insurance policies rely on the international and national building code standards for assurance.

The Insurance Services Office, Inc. manages the Building Code Effectiveness Grading Schedule (BCEGS). This program was implemented in 1995 and assesses the building codes in effect in a particular community as well as how well the community enforces its building codes. The BCEGS program assigns each municipality a BCEGS grade of 1 to 10 with 1 showing exemplary commitment to building code enforcement. Insurance Services Inc (ISO) developed advisory rating credits that apply to ranges of BCEGS classifications 1-3, 4-7, 8-9, 10. ISO gives insurers BCEGS classifications, BCEGS advisory credits, and related underwriting information.

Communities with effective, well-enforced building codes should sustain less damage in the event of a natural disaster, and insurance rates can reflect that. The prospect of lessening natural hazard related damage and ultimately lowering insurance costs provides an incentive for communities to enforce their building codes rigorously. FEMA also uses these scores in their competitive grant programs, giving a higher ranking to those projects with lower scores.

All participating jurisdictions have requested an updated report from the BCEGS and that data received will be implemented into the Plan in the future for further assistance with mitigation planning and preparedness activities.

As required by Utah statute (UCA 15A-2) Carbon County and its municipalities have adopted the 2021 International Building Code (IBC) and International Residential Code (IRC). The Price River Water Improvement District follows these codes for its facilities, while the Carbon School District adheres to both these codes and additional state requirements for educational facilities.

5.14.5 Special District Authorities and Resources

The Carbon School District maintains authority over:

- Educational facility construction and maintenance.
- Emergency operations planning for schools.
- Coordination with local emergency services.
- Capital improvement programming.

The Price River Water Improvement District maintains authority over:

- Water treatment and distribution infrastructure.
- Wastewater collection and treatment systems.
- Rate setting and fee collection.
- Infrastructure maintenance and expansion planning.

5.15 Legal Authority

Local governments play an essential role in implementing effective mitigation. Each local government will review all present or potential damages, losses, and related impacts associated with natural hazards to determine the need or requirement for mitigation action and planning. In Carbon County the local executive responsible for carrying out plans and policies are the county commissioners, and for local jurisdictions, it is the city mayors/city managers. Local governments must be prepared to participate in the post-disaster Hazard Mitigation Team process and the pre-mitigation planning as outlined in this document. The cities and counties of Utah have the authority, through policing, to protect the health, welfare, and safety of their residents.

5.16 Political Willpower

Carbon County region public officials have shown support for pre-disaster planning in the following ways:

5.16.1 Community Development Documents

Elected officials have adopted updated community development documents to reduce the risk of emergencies and disasters. The county and most cities have updated Emergency Operation Plans, Land Use Management Codes, International Building Codes, and General Plans that include pre-disaster planning. In addition, there is support from residents.

5.16.2 Emergency Planning Training Courses

County's residents have supported emergency planning training sponsored by Utah DEM and local governments such as: CERT (Community Emergency Response Team), Local Emergency Planning Committees (LEPC), Hazardous Materials (HAZMAT), Site Plans and Ordinances, Real Estate Requirements, and Hazard Mitigation.

5.16.3 Continued Public Involvement

The participating jurisdictions recognize that continued public involvement is essential for successful hazard mitigation. Following plan approval, jurisdictions will implement a comprehensive public engagement strategy that includes:

1. Annual Engagement Activities:
    - Host public open houses to review mitigation progress and gather community input
    - Maintain dedicated hazard mitigation sections on jurisdiction websites with:
        - Current plan documents.
        - Project updates.
        - Upcoming meetings.
        - Comment opportunities.
        - Educational resources.
    - Provide regular updates through jurisdiction newsletters, social media, and local media outlets.
    - Include hazard mitigation information at community events and festivals.
2. Targeted Outreach:
    - Partner with community organizations serving vulnerable populations to ensure inclusive engagement.
    - Conduct outreach in multiple languages based on community demographics.
    - Utilize diverse communication channels including:
        - Print materials.
        - Digital platforms.
        - In-person events.
        - Local media.
        - Community networks.
    - Maintain contact lists of interested parties for direct notification of mitigation activities.
3. Integration with Other Public Processes:
    - Include hazard mitigation discussions in:
        - General plan updates.
        - Capital improvement planning.
        - Development review processes.
        - Emergency preparedness activities.
    - Coordinate public engagement across departments to maximize efficiency and reach.
4. Documentation and Evaluation:
    - Track public participation metrics.
    - Gather feedback on engagement effectiveness.
    - Adjust strategies based on community response.
    - Maintain records of public comments and responses.
    - Document how public input influences mitigation decisions.

5.16.4 Local Adoption Template

RESOLUTION NO.

A RESOLUTION ADOPTING THE CARBON COUNTY 2021 NATURAL HAZARD PRE-DISASTER MITIGATION PLAN UPDATE, AS REQUIRED BY THE FEDERAL DISASTER MITIGATION AND COST REDUCTION ACT OF 2000.

(Name of Jurisdiction)

(Governing Body)

(Address)

WHEREAS, President William J. Clinton signed H.R. 707, the Disaster Mitigation and Cost Reduction Act of 2000, into law on October 30, 2000; and,

WHEREAS, the Disaster Mitigation Act of 2000 requires all jurisdictions to be covered by a Pre-Disaster Hazard Mitigation Plan to be eligible for Federal Emergency Management Agency post-disaster funds; and,

WHEREAS, the *Natural Hazard Pre-Disaster Mitigation Plan* has been prepared in accordance with FEMA requirements at 44 C.F.R. 201.6; and,

WHEREAS, the City is within Carbon County and participated in the update of the multi-jurisdictional Plan, the *Natural Hazard Pre-Disaster Mitigation Plan*; and,

WHEREAS, the County/City is a local unit of government that has afforded its citizens an opportunity to comment and provide input in the Plan and the actions in the Plan; and,

WHEREAS, the City is concerned about mitigating potential losses and has determined that it would be in the best interest of the community to adopt the *Natural Hazard Pre-Disaster Mitigation Plan*;

NOW THEREFORE, BE IT RESOLVED by the City Council that the City adopts the *2021 Carbon County Natural Hazard Pre-Disaster Mitigation Plan Update* as this jurisdiction's Multi-Hazard Mitigation Plan.

ADOPTED this XX day of XX, 2021 at the meeting of the City Council. Signed: (Chief Elected Official)

(City Council)

The following language was provided to local emergency managers. They were asked to convert it into the format of their municipal resolutions. Copies of enacted resolutions were sent back to the PDM planning team.

6.0 Hazard Risks & Profiles

With the exception of the emergency declaration for the COVID-19 pandemic (DR-4525), no other federal disaster declarations have been issued for Carbon County from 2018-2024.

6.1 Geology

Carbon County exhibits a fascinating geological profile shaped by millions of years of geological processes. The County sits at the intersection of the Colorado Plateau and the Basin and Range Province, resulting in diverse geological features. The region is characterized by sedimentary rock formations, including sandstones, shales, and limestone.

One risk associated with the County's geology is the potential for landslides and rockfalls, particularly in mountainous areas, which can pose hazards to residents, businesses, and visitors.

Additionally, the presence of abandoned mines and underground coal seams increases the risk of subsidence, which can affect structures and infrastructure.

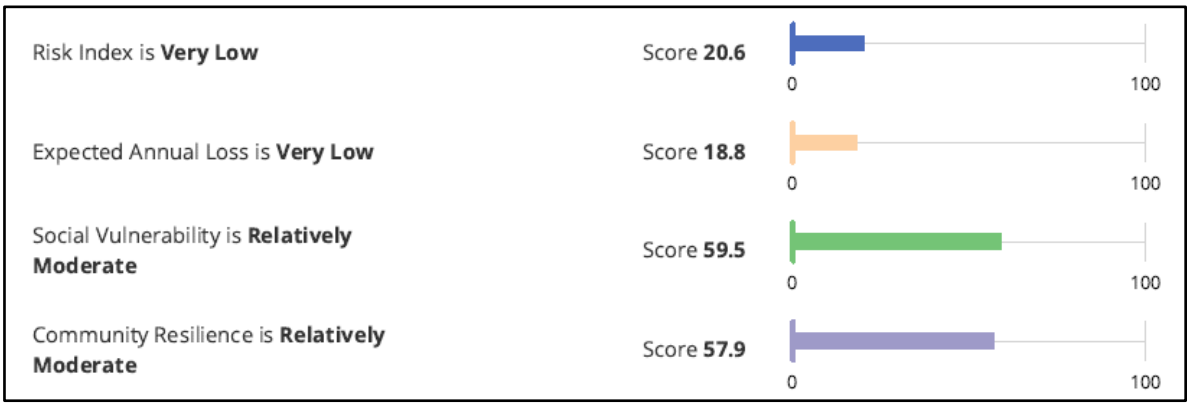
Lastly, the county's geological composition makes it prone to seismic activity, and while earthquakes are relatively infrequent, they can present risks to those in the region.

6.2 Risk Assessment

The FEMA National Risk Index identifies Carbon County, Utah as an area with an overall very low risk index score of 20.6. However, emergency management is a priority to Carbon County because the same matrix identifies Carbon County as having a lower score for “Expected Annual Loss” (18.8).

One of the main reasons for this is because of the population density and building values in Carbon County. Carbon County is a community with a relatively moderate potential for resilience (57.9), but through careful management efforts, this score can be raised.

Table 6.2.1 - Risk Assessment Summary for Carbon County, Utah (FEMA Risk Index 2022)



For more information about the National Risk Index, its data, and how to interpret the information it provides, please visit the National Risk Index website at hazards.fema.gov/nri/learn-more to access supporting documentation and links.

6.2.2 Climate Change Impacts

Carbon County faces increasing risks from climate change impacts. According to the Climate Risk and Resilience Portal (ClimRR), the following changes are projected:

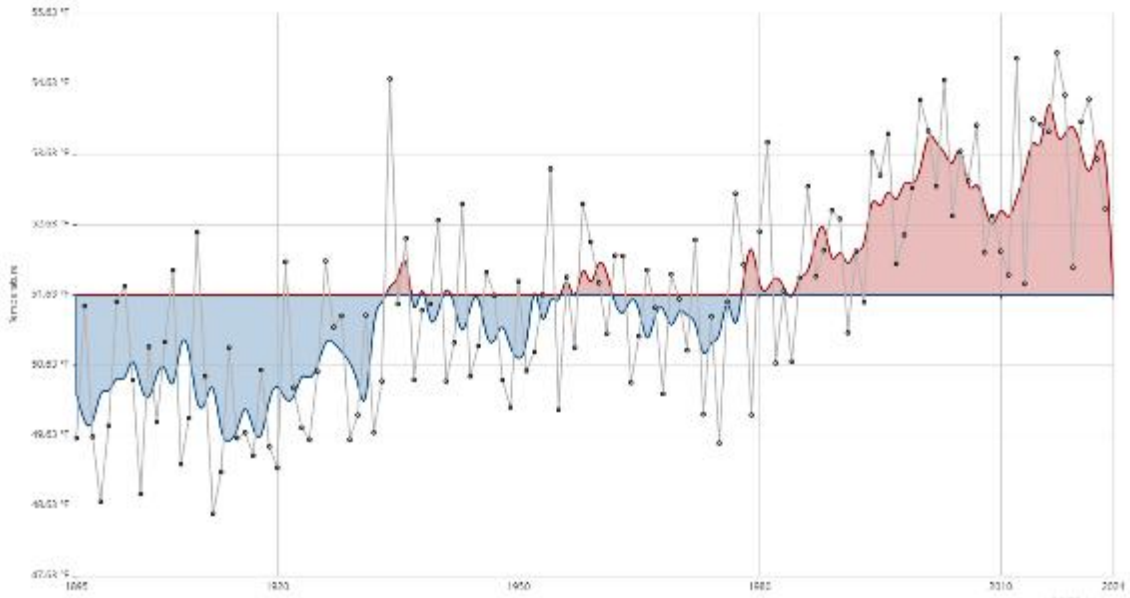
Heat Projections:

- By 2049, Carbon County is expected to experience 7 more days that reach above 95°F (from 5 days to 12 days per year).
- By 2049, Carbon County is expected to have a 3°F increase (from 45°F to 47°F) in average annual temperatures.

Precipitation Projections:

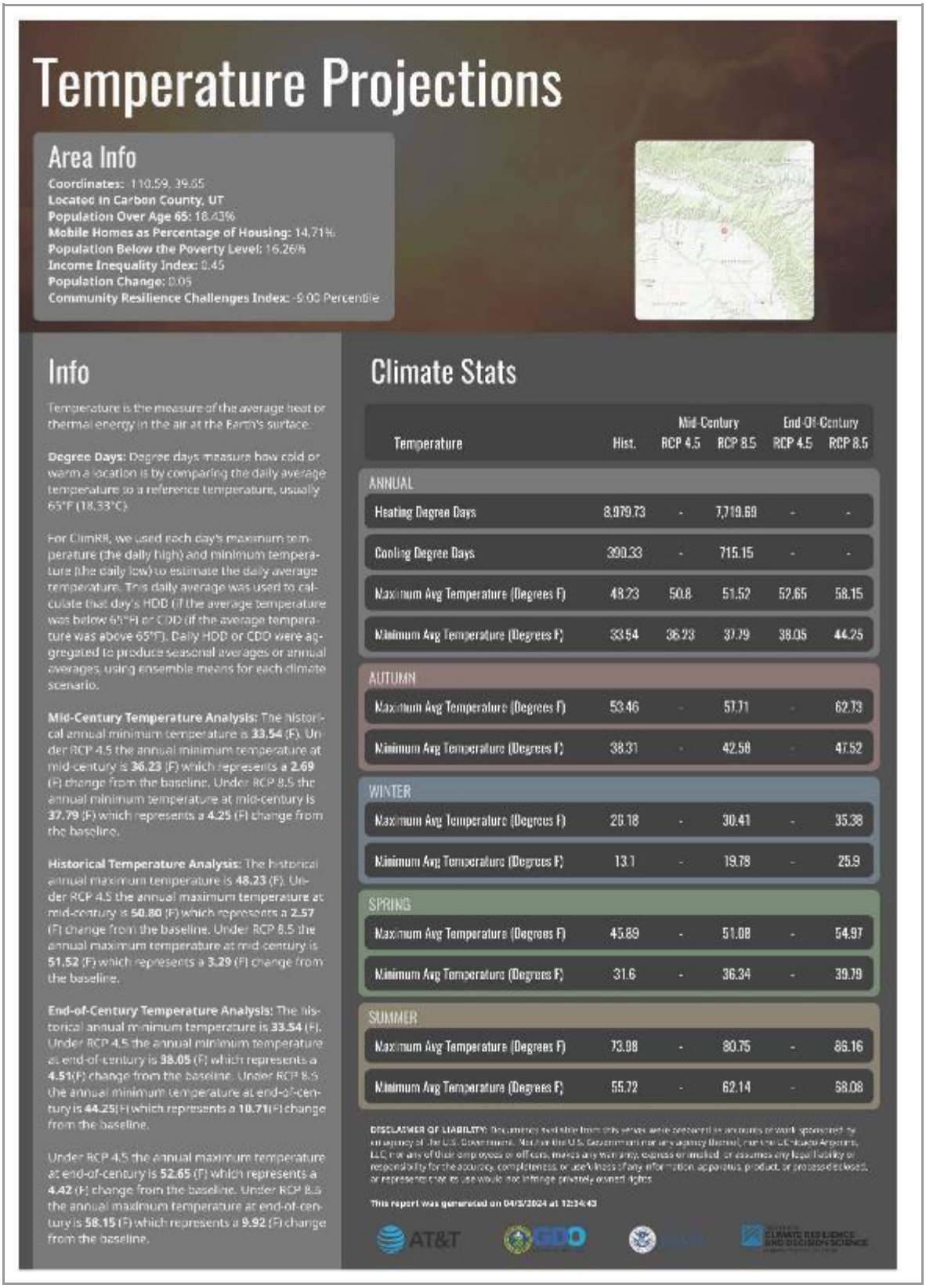
- By 2049, Carbon County is expected to experience 0.2 more days of heavy precipitation per year (from 0.7 days to 0.9 days per year).
- By 2049, Carbon County is expected to have a 0.6″ increase (from 15.5″ to 16.1″) in average annual precipitation.

Figure 6.2.2 - Historic Temperatures (Southeast Region)



Source: Southern Climate Impacts Planning Program

Figure 6.2.3 - Temperature Projections



For more information about the Climate Risk and Resilience Portal (ClimRR), its data, and how to interpret the information it provides, please visit the ClimRR website at https://climrr.anl.gov/.

Figure 6.2.4 - Climate Change Projections

Heat Projections	Precipitation Projections
By 2049, Carbon County is expected to experience 7 more days that reach above 95°F (from 5 days to 12 days per year).	By 2049, Carbon County is expected to experience 0.2 more days of heavy precipitation per year (from 0.7 days to 0.9 days per year).
By 2049, Carbon County is expected to have a 3°F increase (from 45°F to 47°F) in average annual temperatures.	By 2049, Carbon County is expected to have a 0.6″ increase (from 15.5″ to 16.1″) in average annual precipitation.
Source: Headwaters Economics - Neighborhoods at Risk, 2024	

6.2.3 Hazard History

Identifying past hazard events can help in predicting where future events are likely to occur. The following available relevant information such as date, location, and area impacted, and damage costs are identified in the table below in Table 6.2.3.1. Due to the frequency and geographic extent of problem soil and some severe weather events may not have been recorded and are therefore not identified in the table below.

Table 6.2.3.1 - Hazard History

Hazard	Date	Location/Area Impacted	Comments
Flash Flood	August 6, 1901	West of Scofield: Winter Quarters	2 deaths and property damage.
Flood	Fall of 1911	Countywide: Structural damage	None.
Flood	September 18, 1919	Helper City (Lost Creek): Price River flooded the city of Price to the canyon mouth above the city of Helper.	Cloudburst storm. Greatest recorded flood in county history with a discharge greater than 12,000 cfs. 200-year event
Flash Flood	August 16, 1928	Nine Mile Canyon: West of Price City	1 death, property damage
Flash Flood	July 29, 1937	Price City	1 death, 3 injuries, property damage
Drought	1930-1936	County wide: municipal and agricultural water supplies	Resulted in the construction of reservoirs, development of groundwater resources, and improved land management
Flood	September 12, 1939	Wellington City	Infrastructure damage

Hazard	Date	Location/Area Impacted	Comments
Flood	September 13, 1940	Price/Helper	Homes, farmlands and streams flooded. Roads blocked. Soldier Canyon closed due to sliding. Helper accumulated $10,000 in damage due to Heavy cloudburst.
Flood	August 5, 1942	Helper City, Price River	Damage to homes, roads, rail-lines, mines and bridges, $75,000 damage.
Flood/Debris Flow	August 5, 1947	Sunnyside City	1 death, property damages.
Flood	July 17, 1953	Price City, Willow Creek Canyon	Property and road damage
Drought	1953-1965	County wide: Agricultural	10-25-year recurrence interval period
Flood	July 5, 1961	Price City	Property and road damage
Earthquake	August 2, 1968	Hiawatha	Richter magnitude 3.5
Flood	July 28, 1968	Spring Glen/Kenilworth	Property and road damage; Spring Glen water line and main street damage
Flood	September 13, 1970	Price/Helper, Price River and Willow Creek	Property damage, agricultural losses, railroad lines blocked, $10,000 in damage in Helper City
Earthquake	June 11, 1971	Near Scofield	Richter magnitude 3.2
Earthquake	April 14, 1972	South of Sunnyside City	Richter magnitude 3.6
Earthquake	August 10, 1973	West of Sunnyside City	Richter magnitude 3.0
Drought	1974-1978	Countywide: Agriculture	10-25-year recurrence interval period
Flood	Summer of 1983	Countywide-Presidential Declaration	Thistle landslide created severe economic loss of $7 million. Road, property, water, culvert, and sewer line damage.
Flood/Mud and Debris Flow	May 13, 1984	Clear Creek	1 death, property damage
Earthquake	1985-1986	Countywide	minor structural damage, no deaths
Earthquake	August 14, 1988	Epicenter at San Rafael Swell, Emery County	Richter magnitude 5.3; Impacted almost all of Carbon County
Drought	1988- 1993	Statewide, Carbon County	Agriculture and Industry, with residential water restrictions.
Flood	Summer of 1996	Wellington City	Cloudburst storm. Flooded sewer mains and basements. $100,000+
Tornado	July 25, 2001	Carbon County: 10 miles SW of Price	1330 MST, 39 36'N, 110 48'W F0 tornado. http://www.wrh.noaa.gov/slc/climate/tornado.php

Hazard	Date	Location/Area Impacted	Comments
Flood	Summer of 2002	Wellington City. Main Street and 800 East to 1500 East	Cloudburst storm
Severe Weather Wildfire	Summer of 2002	Price Canyon: 3 miles north of Price Canyon	None.
Wildland Fire	Summer of 2003	Horse Canyon Fire: Burned 15 miles southeast of East Carbon,	The Flames threatened two homes with rain and had diminished the fire, 195 acres.
Wildland Fire	Summer of 2003	Finn canyon Fire: Seven miles south of Scofield Town,	No threat of structures caused minor damage, two helicopters assisted with water buckets, 100 acres.
Infestation	May, 2003	Countywide: 1,000+ acres	Grasshoppers. Related to drought.
Flash Flood	July 30, 2006	Consumers Canyon	20 feet deep wall of water, two dead, rescue teams and volunteers search for months. severe thunderstorm along the eastern edge of Wasatch Plateau sending runoff water in to Consumers Canyon inundating sports utility vehicles and off roaders. Family of five washed down stream with loss of a 1-year old (who was not found) and a 3-year old that died of shortly after of complications. Search continued into October for the body.
Hazmat	October 3, 2006	Price City	Incident of severed transmission line after motorist ran it over on 300 East Main; 40 gallons of vehicle fueled spilled
Wildland Fire	July 6, 2007	Mathis Fire: 13 miles from Kenilworth	$22613.50. Fire was in close proximity to Aberdeen Mine with a mile radius of a methane ventilation shaft it was contained; 886 acres with 200-foot flames, ranked top priority, Cordingly Canyon.
Hazmat	February 19, 2008	SR 191 Indian Canyon near Helper; Soil and Price River tributary	Tanker truck rollover; spilling 55,000 pounds of ammonium nitrate prill; diesel fuel spillage from truck; threatened nearby water source.

Hazard	Date	Location/Area Impacted	Comments
Hazmat	July of 2008	Indian Canyon and Price water tributary	Tanker tip over at Mile marker 228 near Emma Park Road; approximately 25,000 gallons of drilling fluid that includes diesel fuel, oil, and mud; Health and EPA continue soil sampling and removed approximately enough soiled to fill a 25' x 75' x 10' hole; cost is over $138,000 and soil will be monitored over the next five years.
Landslide	August 7, 2008	region wide--US6	Massive mudslide demolished a construction site, closure from Billy's Mountain to Mile marker 191. Traffic was routed over Indian Canyon. Flash flood warning in effect throughout Carbon county area and travel if not advised.
Wild Fire	June of 2009	Scofield West Subdivision in danger.	Managed fire started in June became large problem, summer residents and full-time residents were evacuated, two wildfire engines and a helicopter battled the blaze with more fire engines, hand crews and type two helicopter carried fire retardant and water over the blaze.
Severe Weather--Lightening	August 24, 2009	Westwood Residential area--Tree damage	A lightning strike destroyed a tree in front of a Westwood area home near Ranch Road, sending large pieces of wooden debris more than 100 feet away from the blast. Surprisingly the incident, which apparently spooked a number of neighbors, seems to have left the home unscathed.
Tornado	July 26,2010	Wellington	Trailer rolled over, trees uprooted no injuries reported (NOAA)
Thunderstorm Lightning	July 13, 2011	Scofield	Two Struck, One Fatality (NOAA)

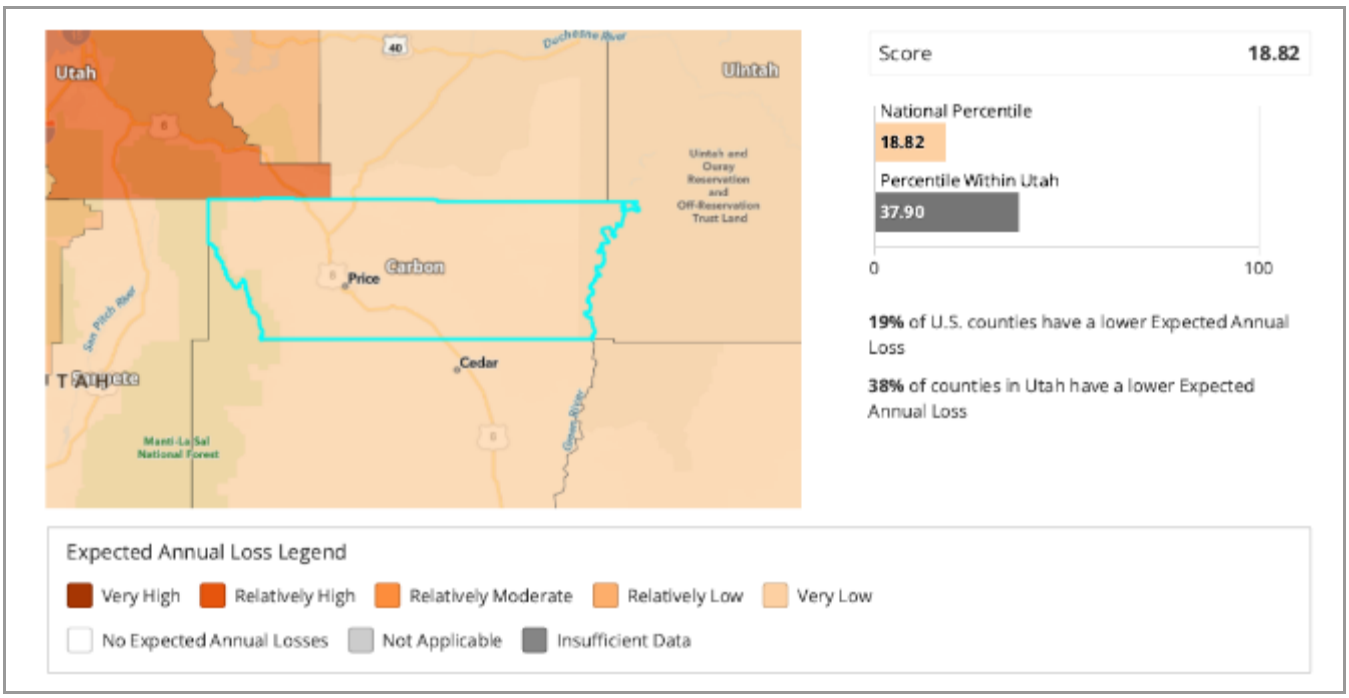
Hazard	Date	Location/Area Impacted	Comments
Hazmat	September 15, 2011	Indian Canyon: Willow Creek--joins Price River	Truck hauling two trailers of crude oil traveling on SR191 near Helper. Driver pronounced dead at scene, estimated 6000 gallons of waxy paraffin crude oil released into river. Enviro Care, EM Sheriff's Department, and Federal EPA officials assess scene and cleanup efforts.
Severe Weather	December 20, 2010	U.S 6 --Price Canyon	Snow and Ice forced closure and restrictions; Four-wheel drive or chains were mandatory after a one- hour closure of the highway.
Severe Weather-Wind	December 6, 2011	Region wide: 60 miles per hour winds	Toppling trees, damaging homes and casing spotty power outages during early morning hours. Price City reported a badly cracked power pole where Rocky Mountain Power replaced within a few days. Local business owner's shop windows were ruined with a cost of $1000. Wind caused snow drifts to form causing local travel on Highway 10
Wildland Fire	March 29, 2012	3 Miles South of Price, 50 acres	Controlled weed burn jumped the canal banks placing Circle K subdivision in damage. Approximately $9000 to battle fire.
Drought	June 14, 2012	region wide	Fire restrictions from Utah Division of Forestry, Fire and State Lands, Bureau of Land management, Forest Service, National Park Service, Bureau of Indian Affairs and the U.S. Fish and Wildlife Service announced orders in prohibiting commonality.

Hazard	Date	Location/Area Impacted	Comments
Wildland Fire	June 26, 2012	Price through Ferron: 15 miles NW of Huntington, Utah,	48,050 acres, Suppression Cost est. $8,500,000. Utilization of Carbon County Emergency Management, Sheriffs personnel, road department, officials, and volunteers. Lightening caused, July 18 became 100% contained, continued hotspots as of August 1, leaving landscape with flash floods, debris flows, road damage, fish kills, hazard trees, damage to recreation sites, rolling logs and boulders, stump holes and unstable soils. Emergency Stabilization Treatment cost est. $1,857,000.
Earthquake	July 3, 2012	Sunnyside area	Micro earthquake at 1:07 AM (MDT) Magnitude 1.1. Four miles ESE of local.
Earthquake	July 3, 2012	Sunnyside area	Micro earthquake at 11:47AM (MDT Magnitude 1.5. Six miles N of Sunnyside.
Flash Flood	September 9, 2013	Wellington	24 Homes flooded (NOAA)
Earthquake	September 21,2013	2 miles from Clear Creek	2.1 no damage or injuries reported
Earthquake (2)	April 16, 2014	14 miles from Clear Creek	2.1 & 2.2 no damages or injuries
Earthquake	April 24,2014	14 miles from Clear Creek	2.3 no damage or injuries reported
Flash Flood	August 5, 2014	Helper	100 Homes flooded, $500,000 damage to public infrastructure (NOAA)
Flash Flood	September 27, 2014	Price	24 Homes flooded in Pilling's Trailer Court (NOAA)
Earthquake	June 2, 2015	8 miles from Helper	2.3 no damage or injuries reported
Flash Flood	September 22, 2016	Price, Wellington, Sunnyside	80 Homes evacuated from Pilling's Trailer Court; $1.6 Million damage to public infrastructure (NOAA)
Drought	February 2018	County Wide	Severe Drought, Drought Declaration

6.3 Expected Annual Loss

The FEMA Natural Disaster Expected Annual Loss (EAL) is a metric used to estimate the expected economic losses associated with natural disasters over a one-year period. It takes into account various factors including the probability of occurrence of different types of natural disasters, the vulnerability of the affected area, and the value of exposed assets. Carbon County's expected loss each year due to natural hazards is very low (18.8) when compared to the rest of the U.S.

Figure 6.3.1. Expected Annual Loss for Carbon County, Utah (FEMA National Risk Index for Carbon County, Utah, March 4, 2024)



6.4 Vulnerability Analysis

6.4.1 Overview

Using the findings from the risk assessment and the capabilities assessment as a guide, several mitigation strategies and implementing actions were identified that would benefit each jurisdiction. Each action has been formalized and placed into this Plan in each of the County mitigation sections. These actions were identified in the planning group meetings which included input from the core planning team, local planning team, state and local agencies, County government, City and County residents, and other stakeholders. Goals and objectives were developed in a working session between the above-mentioned groups with a period provided for comment and revision.

Each of the jurisdictions identified mitigation actions based on the identified goals and objectives. These actions are included in each County section of this Plan. The mitigation actions identify the responsible agency, the funding source, timeline, background, and their priority. Actions were selected using the information obtained from the capabilities assessment, which identified existing programs and shortfalls related to mitigation activities.

The actions were prioritized based on the Social, Technical, Administrative, Political, Legal, Economic, Environmental (STAPLEE) method identified in the FEMA How-To Guides. The STAPLEE method of prioritization emphasizes the effectiveness of the actions with respect to their cost, as well as their social, technical, administrative, political, legal, environmental, and economic effects. Each action is judged and ranked against these criteria and assigned the priority of High, Medium, or Low.

6.4.2 Asset Identification

The vulnerability analysis combines the data from each of the hazard profiles and merges it with community asset information to analyze and quantify potential damages from future hazard events. The asset inventory identifies buildings, roads, and critical facilities that can be damaged or affected by the hazard events. Critical facilities are of particular concern because of the essential products and services to the general public they provide. These critical facilities can also fulfill important public safety, emergency response, and/or disaster recovery functions. The critical facilities identified in this plan include hospitals, police and fire stations, schools, communication facilities, utility companies, water and wastewater treatment plants. In order to assess where and to what extent the identified hazards will affect the assets of each County, the locations of assets were identified and overlaid with the mapped hazards using GIS software.

6.4.3 Potential Loss Estimates

Potential dollar loss estimates were identified using this same method; therefore estimates were completed for existing infrastructure only. When data permitted, structure, content, and function of the identified vulnerable infrastructure was incorporated into the vulnerability assessments. Describing the vulnerability in terms of dollar losses provides the community and the state with a common framework in which to measure the effects of hazards on assets. Future planned development was not analyzed due to the lack of data available in GIS format.

6.5 Hazard Identification

The first step in risk assessment is identifying the hazards that could affect Carbon County. Hazard identification addresses the geographic extent, the intensity/magnitude of a hazard and the probability of its occurrence.

Hazard identification was initiated through an extensive process that utilized the following:

- Core Planning Team
- Local Working Group
- Subject Matter Experts
- Community and Public individuals
- Elected Officials
- City and County Agencies
- Utah Division of Emergency Management
- Utah Geological Survey
- Utah Automated Geographic Reference Center

6.5.1 Hazard Selection and Prioritization

This plan addresses natural hazards that potentially threaten Carbon County and its participating jurisdictions. The hazards selected for inclusion were determined through a comprehensive review process that included:

1. Analysis of historical occurrences and impacts within the planning area;
2. Review of state and federal disaster declarations affecting the county;
3. Evaluation of existing plans and reports;

4. Consultation with local officials and subject matter experts; and

5. Input from stakeholders and community members.

The planning team identified the primary natural hazards that pose significant risk to Carbon County: Flooding, Earthquake, Landslide, Wildfire, Problem Soils, Drought, Dam Failure, Severe Weather (including Lightning, Heat Wave, Cold Wave, Ice Storm, Tornado, Hail, and Strong Wind), and Infestation. Climate change factors are addressed within each relevant hazard profile rather than as a separate hazard, as its primary impacts manifest through intensification of existing hazards.

Hazard Type	Risk Index Rating	Risk Index Score	County Rank
Landslide	Relatively Moderate	85.1	1
Lightning	Relatively Moderate	80.5	2
Heat Wave	Relatively Moderate	79.5	3
Flooding	Relatively Low	68.7	4
Wildland Fire	Relatively Low	68.4	5
Earthquake	Very Low	55.5	6
Winter Weather	Relatively Low	38.4	7
Cold Wave	Very Low	27.7	8
Avalanche	Very Low	26.9	9
Drought	Very Low	26.3	10
Ice Storm	Very Low	24.7	11
Tornado	Very Low	12.7	12
Hail	Very Low	4.8	13
Strong Wind	Very Low	4.3	14
Problem Soils*	Likely	Limited	15
Infestation*	Possible	Negligible	16
Dam Failure*	Possible	Negligible	17
Climate Change^	unknown	unknown	18

(Hazard Type Risk Index for Carbon County (FEMA National Risk Index for Carbon County, Utah, March 4, 2024))

*FEMA National Risk Index did not rate problem soils, infestation, Dam Failure, or Climate Change. These hazards were identified with the use of FEMA How to Guidance documents, FEMA 386- 1,2,3,7 FEMA Post Disaster Hazard Mitigation Planning Guidance DAP-12, Disaster Mitigation Act of 2000, 44 CFR Parts 201 and 206, Interim Final Rule, and FEMA Region VIII Crosswalk. The risk assessment process also utilized assistance from local County GIS using the best available data.

^ Risk Index for Climate Change is unknown at this time. This table will be updated when the information becomes available.

Note: The severe weather category in this plan consistently includes the following sub-hazards: Lightning, Heat Wave, Cold Wave, Winter Weather, Ice Storm, Tornado, Hail, Strong Wind, and Avalanche. These are sometimes individually listed in risk tables due to data availability from the National Risk Index, but are collectively addressed in the Severe Weather hazard profile and mitigation strategies. While Table 6.5.1 presents the individual risk scores for various weather-related hazards as calculated by the FEMA National Risk Index, Table 6.5.2 consolidates these phenomena under "Severe Weather" for planning purposes. This consolidation reflects the practical approach taken by participating jurisdictions, which typically address these related hazards through integrated emergency management systems rather than as separate phenomena.

The top 14 risks were calculated by the National Risk Index. This index is a dataset and online tool to help illustrate the United States communities most at risk for 18 natural hazards: Avalanche, Coastal Flooding, Cold Wave, Drought, Earthquake, Hail, Heat Wave, Hurricane, Ice Storm, Landslide, Lightning, Riverine Flooding, Strong Wind, Tornado, Tsunami, Volcanic Activity, Wildfire, and Winter Weather.

The National Risk Index leverages available source data for Expected Annual Loss due to these 18 hazard types, Social Vulnerability, and Community Resilience to develop a baseline relative risk measurement for each United States county and Census tract. These measurements are calculated using average past conditions, but they cannot be used to predict future outcomes for a community. The National Risk Index is intended to fill gaps in available data and analysis to better inform federal, state, local, tribal, and territorial decision makers as they develop risk reduction strategies.

Explore the National Risk Index Map at hazards.fema.gov/nri/map or visit the National Risk Index website at hazards.fema.gov/nri/learn-more to access supporting documentation and links.

The probability of the remaining hazards (*) were determined by the calculated risk to the County, as identified by FEMA How to Guidance documents with the assistance from local County GIS using the best available data. The probability or likelihood of an occurrence is categorized into four categories: Highly Likely, Likely, Possible, and Unlikely. The hazards were profiled based on history of occurrence, local input, County emergency operations plans, and County master or general plans, scientific reports, historical evidence, and hazard analysis plans.

The decision as to which hazards to address was made based on input from stakeholders, hazard research, and the risks addressed in the previous plan.

Maps were created using GIS software to identify the location and extent of each identified hazard area. The following risk assessment maps were created for Carbon County:

- Earthquakes
- Geologic hazards
- Liquefaction potential
- Flood history
- Drainage basins
- Landslide susceptibility
- Fire hazard potential
- Dam failure potential

6.5.2 Hazard Prioritization by Jurisdiction

Each participating jurisdiction evaluated the hazards based on their specific geographic conditions, historical experiences, and unique vulnerabilities. Table 6.5.2 displays the priority hazards identified by each jurisdiction.

While some hazards such as Lightning, Heat Wave, Cold Wave, Avalanche, Ice Storm, Tornado, Hail, and Strong Wind were not selected as top priorities by any single jurisdiction, they remain important considerations within the "Severe Weather" category. These hazards were incorporated into the Severe Weather profile because:

1. They share similar preparedness and response mechanisms;
2. They often occur in conjunction with one another;
3. Their individual impacts, while significant during specific events, typically affect smaller geographic areas or cause less widespread damage than the prioritized hazards; and
4. Local emergency management capabilities are structured to address these hazards collectively.

Clarification on Specific Hazard Prioritization:

Lightning and Heat Wave, which ranked 2 and 3 respectively in apparent problems (Table 6.5.1), were not individually identified as priority hazards by jurisdictions in Table 6.5.2 because these phenomena are addressed within jurisdictions' broader severe weather preparedness strategies. Additionally, while these hazards occur frequently, participating jurisdictions determined that their current mitigation capabilities for these specific hazards are adequate relative to other prioritized hazards that require additional mitigation focus.

Technical Terms:

Alluvial Fan: An alluvial fan is a fan-shaped deposit of sediment created when a stream flows from a steep gradient onto a flatter plain. In Carbon County, alluvial fans present hazards because they can be susceptible to flash flooding, debris flows, and shifting stream channels during heavy precipitation events. Development on alluvial fans requires special consideration due to these potential hazards.

Hazard Type	County	East Carbon	Helper	Price	Scofield	Wellington	Carbon School	Price River Water
Earthquake	Y	Y	Y	Y	Y		Y	Y
Flooding	Y	Y	Y	Y	Y	Y	Y	Y
Landslide	Y	Y	Y		Y			
Wildland Fire	Y	Y	Y	Y	Y	Y	Y	
Problem Soils*	Y							
Dam Failure*	Y	Y		Y	Y			
Drought	Y	Y	Y	Y	Y	Y	Y	Y
Severe Weather	Y	Y	Y	Y	Y	Y	Y	
Lightning*								
Heat Wave*								
Winter Weather								
Cold Wave								
Ice Storm								
Tornado								

Hail								
Strong Wind								
Avalanche								
Infestation	**Y**							

** Lightning and Heat Wave, which ranked 2 and 3 respectively in apparent problems (Table 6.5.1), were not individually identified as priority hazards by jurisdictions in Table 6.5.2 because these phenomena are addressed within jurisdictions' broader severe weather preparedness strategies. Additionally, while these hazards occur frequently, participating jurisdictions determined that their current mitigation capabilities for these specific hazards are adequate relative to other prioritized hazards that require additional mitigation focus.*

While some hazards such as Lightning, Heat Wave, Cold Wave, Avalanche, Ice Storm, Tornado, Hail, and Strong Wind were not selected as top priorities by any single jurisdiction, they remain important considerations within the "Severe Weather" category. These hazards were incorporated into the Severe Weather profile because:

1. They share similar preparedness and response mechanisms;
2. They often occur in conjunction with one another;
3. Their individual impacts, while significant during specific events, typically affect smaller geographic areas or cause less widespread damage than the prioritized hazards; and
4. Local emergency management capabilities are structured to address these hazards collectively.

6.5.2.1 Jurisdiction Hazard Omission Rationales

Each jurisdiction has carefully evaluated the range of potential hazards affecting Carbon County and prioritized those posing the most significant risk to their specific communities. Below are the rationales for hazards not prioritized by each jurisdiction:

Carbon County: While all identified hazards pose some level of risk across the county, Carbon County has prioritized those with the highest historical occurrence rates, greatest potential impact, and most direct threat to population centers. Hazards not marked as priorities are still monitored but are addressed through general emergency management protocols rather than specific mitigation actions.

East Carbon/Sunnyside:

- **Problem Soils:** Limited development pressures and existing construction practices adequately address the moderate soil challenges in this area.
- **Infestation:** Historically has had a minimal impact on critical infrastructure and community health.

Helper City:

- **Problem Soils:** The city's development patterns and geological composition present minimal risk from problem soils compared to other hazards requiring immediate attention.
- **Infestation:** Historical data indicates low vulnerability to significant infestations affecting public safety or infrastructure.

- **Dam Failure:** Helper City has not prioritized dam failure as a hazard requiring specific mitigation actions because the city's geographic location and elevation provide substantial protection from dam inundation. While Helper is downstream from several dams, detailed inundation modeling demonstrates that potential failure scenarios would not directly impact city infrastructure or populated areas due to Helper's elevated position relative to the Price River channel and natural topographic features that would contain and redirect flows. Critical facilities including the fire station, city hall, and water treatment plant are located outside any potential inundation zones identified in dam failure analyses. The city maintains coordination with dam owners and emergency management agencies for early warning during dam safety incidents, but the geographic protection from inundation allows resources to be prioritized toward hazards with direct vulnerability to city assets and populations.

Price City:

- **Landslide:** Geological studies indicate limited risk to developed areas within city boundaries, with potential hazard areas already restricted from development.
- **Problem Soils:** Existing building codes and development review processes effectively mitigate the moderate soil issues present.
- **Infestation:** Historical patterns show minimal infrastructure or public health impacts from infestations.

Scofield Town:

- **Problem Soils:** Limited development activity and existing construction practices adequately address the minimal soil challenges in this area.
- **Infestation:** Historically has had a minimal impact on critical community functions.

Wellington City:

- **Earthquake:** The city's building stock and geological setting present lower vulnerability than other jurisdictions, with critical facilities constructed to appropriate standards.
- **Landslide:** Minimal topographical variation within city boundaries significantly reduces landslide risk.
- **Problem Soils:** Existing building codes and construction practices effectively address the limited soil issues present.
- **Infestation:** Historical patterns indicate minimal impacts to infrastructure or public health.
- **Dam Failure:** Wellington's geographic location and elevation place it outside of primary dam failure inundation zones. The community's distance from high-hazard dams and elevated topography provide natural protection from dam failure impacts. Current emergency management protocols provide adequate response capabilities for this hazard without requiring specific mitigation actions.

Carbon School District:

- **Landslide:** School facilities are not located in areas with significant landslide risk.
- **Problem Soils:** Facilities are constructed following robust engineering standards that address potential soil issues.
- **Infestation:** Buildings are maintained under protocols that effectively prevent significant infestations affecting educational operations.
- **Dam Failure:** School facilities are not located in primary dam inundation zones that require specific mitigation actions beyond standard evacuation protocols.

Price River Water Improvement District:

- **Landslide:** Critical water infrastructure has been designed to account for potential slope instability in vulnerable areas.
- **Wildfire:** Water treatment and distribution facilities incorporate fire-resistant design elements and defensible space.
- **Problem Soils:** Infrastructure design and construction standards address soil challenges throughout the service area.
- **Infestation:** Operational procedures include regular monitoring and maintenance to prevent infestations affecting water quality or infrastructure.
- **Dam Failure:** The District's critical water infrastructure, including treatment facilities and primary transmission lines, is located outside of dam failure inundation zones. Water infrastructure vulnerable to flooding is addressed through the District's flood hazard mitigation strategies. System redundancy and elevated facility design provide protection from potential dam failure impacts, with no assets requiring dam-failure-specific mitigation actions beyond existing flood protection measures.
- **Severe Weather (non-priority sub-hazards):** While severe weather components like lightning and wind can affect operations, these are managed through operational protocols and emergency response procedures rather than dedicated mitigation projects.

6.5.3 Hazard Mitigation Action Alignment

Each jurisdiction identified in Table 6.5.2 has developed specific mitigation actions to address their priority hazards. As detailed in Section 7, every jurisdiction has at least one mitigation action for each of their identified hazards. These jurisdiction-specific mitigation strategies are comprehensive and tailored to address the unique vulnerabilities, capabilities, and priorities of each community. Cross-referencing Table 6.5.2 with the mitigation strategies in Section 7 confirms that all identified hazards have corresponding mitigation actions for each jurisdiction.

The following table demonstrates that each jurisdiction in the plan has at least one mitigation action addressing each of their identified hazards of concern. For complete details on each action, refer to the jurisdiction-specific sections in Part 7.

Jurisdiction	Identified Hazard	Corresponding Mitigation Action
Carbon County	Earthquake	• Structural assessment of county buildings and critical facilities with seismic retrofits for vulnerable structures
Carbon County	Flooding	• Storm drainage improvements in flood-prone areas • Implementation of flood control measures along Price River
Carbon County	Wildfire	• Defensible space program for WUI areas • Fuel reduction in high-risk zones
Carbon County	Drought	• Water conservation plan implementation • Secondary water source development
Carbon County	Landslide	• Slope stability assessment and stabilization of high-risk areas
Carbon County	Severe Weather	• Generator installation for critical facilities • Winter storm preparation program

Carbon County	Dam Failure	• Dam safety coordination with state agencies • Early warning system enhancement
Carbon County	Problem Soils	• Soil hazard mapping update • Building code enforcement for soil hazards
Carbon County	Infestation	• Integrated pest management plan • Noxious weed control program
Price City	Earthquake	• Seismic retrofits for city-owned historic buildings • Public awareness program
Price City	Flooding	• Stormwater system upgrades • Flood-prone property acquisition
Price City	Wildfire	• Urban interface code enforcement • Vegetation management adjacent to city limits
Price City	Drought	• Xeriscaping of public properties • Water conservation ordinance updates
Price City	Severe Weather	• Critical facility hardening • Snow removal equipment upgrades
Price City	Dam Failure	• Comprehensive response plan • Public education campaign
Helper City	Earthquake	• Historic building assessment and retrofit program • Emergency operations plan update
Helper City	Flooding	• Channel improvements along Price River • Floodplain management ordinance update
Helper City	Wildfire	• Fuel reduction projects in surrounding canyons • Public education program
Helper City	Drought	• Water supply vulnerability assessment • Conservation program implementation
Helper City	Landslide	• Hillside development restrictions • Monitoring system for high-risk slopes
Helper City	Severe Weather	• Snow load assessment for public buildings • Road resilience improvements
Wellington	Earthquake	• Critical facility assessment • Unreinforced masonry education program
Wellington	Flooding	• Culvert and drainage system upgrades • Flood hazard mapping update
Wellington	Wildfire	• Defensible space creation around public facilities • Evacuation route improvements
Wellington	Drought	• Water system interconnection study • Conservation program implementation
Wellington	Severe Weather	• Emergency power supplies for critical facilities

		• Winter weather response plan
East Carbon - Sunnyside	Earthquake	• Building vulnerability assessment • Emergency response plan update
East Carbon - Sunnyside	Flooding	• Stormwater management improvements • Culvert maintenance program
East Carbon - Sunnyside	Wildfire	• Vegetation management program • Fire break establishment
East Carbon - Sunnyside	Landslide	• High-risk area identification and monitoring • Land use regulation updates
East Carbon - Sunnyside	Severe Weather	• Road maintenance for emergency access • Community shelter improvements
Scofield	Flooding	• Drainage improvements • Culvert maintenance program
Scofield	Wildfire	• Defensible space program • Evacuation plan development
Scofield	Severe Weather	• Emergency access route maintenance • Winter storm preparation
Scofield	Dam Failure	• Emergency evacuation route maintenance and improvements • Warning system upgrade
Carbon School District	Flooding	• School site drainage improvements • Facility protection measures
Carbon School District	Wildfire	• Vegetation management around school properties • Emergency response planning
Carbon School District	Earthquake	• Unreinforced masonry building retrofit program • Earthquake preparedness training
Carbon School District	Severe Weather	• Facility hardening measures • Emergency closure procedures update
Price River Water District	Earthquake	• Infrastructure resilience assessment • Pipeline retrofit program
Price River Water District	Flooding	• Protection of vulnerable infrastructure • System redundancy improvements
Price River Water District	Drought	• Source water protection plan • Water conservation implementation
Price River Water District	Severe Weather	• Critical facility protection • Backup power installation

6.5.4 Jurisdictional Risk Variations

While certain hazards affect the entire planning area, the risk profiles vary significantly between jurisdictions based on geographic location, development patterns, infrastructure characteristics, and community resources. Table 6.5.2 identifies each jurisdiction's priority hazards, which were determined through jurisdiction-specific vulnerability analyses rather than applying a uniform risk assessment across all participants.

For example:

- Helper City faces unique landslide risks due to its steep canyon walls and historic mining activities, which is reflected in both its hazard prioritization and mitigation strategies.
- East Carbon/Sunnyside's position downstream from Grassy Trail Reservoir creates specific dam failure vulnerabilities, though these are addressed through water management protocols rather than specific mitigation actions.
- Price City, as the county seat and population center, faces heightened concerns about critical facility protection during severe weather events due to its regional service role.
- Scofield Town's remote location and winter access challenges create distinct vulnerability patterns for severe weather and wildfire.

The Carbon School District has prioritized earthquake risk due to their multiple facilities with unreinforced masonry construction, as reflected in their mitigation actions in Section 7.7.8 which include specific earthquake mitigation projects including "Implement a phased seismic retrofit program for Unreinforced Masonry Buildings (URMs) identified in the State K-12 URM study."

The Price River Water Improvement District faces potential service disruptions where water transmission lines cross landslide-prone areas, particularly in Price Canyon.

Section 7 provides detailed jurisdiction-specific information on both priority and non-priority hazards, including rationales for hazard designations and specific vulnerability assessments.

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6.5.4.1 Jurisdiction Hazard Omission Rationales

Each jurisdiction has carefully evaluated the range of potential hazards affecting Carbon County and prioritized those posing the most significant risk to their specific communities. Below are the rationales for hazards not prioritized by each jurisdiction:

Carbon County:

- While all identified hazards pose some level of risk across the county, Carbon County has prioritized those with the highest historical occurrence rates, greatest potential impact, and most direct threat to population centers.
- Hazards not marked as priorities are still monitored but are addressed through general emergency management protocols rather than specific mitigation actions.

East Carbon/Sunnyside:

- Earthquake: While the community acknowledges regional seismic risk, geological assessments indicate lower site-specific vulnerability compared to other jurisdictions in the county, with historical data showing minimal impacts to this area from previous seismic events.
- Problem Soils: Limited development pressures and existing construction practices adequately address the moderate soil challenges in this area.

- Infestation: Historically has had a minimal impact on critical infrastructure and community health.
- Dam Failure: While Grassy Trail Reservoir poses potential risk, it is addressed through separate water management protocols and emergency action plans.

Helper City:

- Problem Soils: The city's development patterns and geological composition present minimal risk from problem soils compared to other hazards requiring immediate attention.
- Infestation: Historical data indicates low vulnerability to significant infestations affecting public safety or infrastructure.
- Dam Failure: The Helper City emergency operations plan addresses dam inundation risks through general flood response protocols.

Price City:

- Landslide: Geological studies indicate limited risk to developed areas within city boundaries, with potential hazard areas already restricted from development.
- Problem Soils: Existing building codes and development review processes effectively mitigate the moderate soil issues present.
- Infestation: Historical patterns show minimal infrastructure or public health impacts from infestations.

Scofield Town:

- Landslide: While landslide depositions exist south of town, most affect uninhabited areas and pose minimal risk to the town's infrastructure.
- Problem Soils: Limited development activity and existing construction practices adequately address the minimal soil challenges in this area.
- Infestation: Historically has had a minimal impact on critical community functions.

Wellington City:

- Earthquake: The city's building stock and geological setting present lower vulnerability than other jurisdictions, with critical facilities constructed to appropriate standards.
- Landslide: Minimal topographical variation within city boundaries significantly reduces landslide risk.
- Problem Soils: Existing building codes and construction practices effectively address the limited soil issues present.
- Infestation: Historical patterns indicate minimal impacts to infrastructure or public health.

Carbon School District:

- Landslide: School facilities are not located in areas with significant landslide risk.
- Problem Soils: Facilities are constructed following robust engineering standards that address potential soil issues.
- Infestation: Buildings are maintained under protocols that effectively prevent significant infestations affecting educational operations.
- Dam Failure: School facilities are not located in primary dam inundation zones that require specific mitigation actions beyond standard evacuation protocols.

Price River Water Improvement District:

- Landslide: Critical water infrastructure has been designed to account for potential slope instability in vulnerable areas.
- Wildfire: Water treatment and distribution facilities incorporate fire-resistant design elements and defensible space.
- Problem Soils: Infrastructure design and construction standards address soil challenges throughout the service area.
- Infestation: Operational procedures include regular monitoring and maintenance to prevent infestations affecting water quality or infrastructure.
- Dam Failure: While dam failure could affect water supplies, this is addressed through the district's emergency response plan rather than specific mitigation actions.

6.5.5: Hazard Probability Categories and Definitions

Probability Category	Quantitative Definition
Highly Likely	90-100% probability of occurrence in the next year, or at least one event occurring per year
Likely	50-89% probability of occurrence in the next year, or at least one event occurring within the next 3 years
Possible	10-49% probability of occurrence in the next year, or at least one event occurring within the next 5 years
Unlikely	Less than 10% probability of occurrence in the next year, or less than one event occurring within the next 10 years

6.5.6 Jurisdiction-Specific Vulnerability Information

While Section 6 provides hazard profiles and county-wide vulnerability assessments, detailed information about how each hazard affects individual jurisdictions—including specific assets at risk, changes since the 2018 plan, and development trends in hazard-prone areas—is provided in Section 7. Where data is available, each jurisdiction's subsection in Section 7 contains:

1. Geographic and demographic context
2. Jurisdiction-specific hazard vulnerabilities
3. Changes since the 2018 plan that affect vulnerability
4. Current development patterns in relation to hazard areas
5. Future development considerations and their potential impact on vulnerability
6. Mitigation strategies tailored to the jurisdiction's unique situation

For comprehensive understanding of jurisdiction-specific risks and vulnerabilities, readers should reference the relevant subsections in Section 7 in conjunction with the hazard profiles in Section 6.

6.6 Earthquake (E)

Note: This plan update includes hazard events through October 2024. No federal or state disaster declarations specific to earthquakes have been issued for Carbon County since the last plan update in 2018

6.6.1 Location & Extent

Carbon County has several earthquake fault lines identified in the sparsely populated western side of the county and the county has historically experienced minor earthquakes countywide.

The magnitude of an earthquake is essentially a relative estimate of the total amount of seismic energy released and may be expressed using the familiar "Richter scale" or using the "moment magnitude scale" now favored by most technical authorities. On either scale, significant damage can be expected from earthquakes with a magnitude of about 5.0 or higher. What determines the amount of damage that might occur in any given location, however, is not the magnitude of the earthquake but the intensity at that particular place. Earthquake intensity decreases with distance from the earthquake's "epicenter" (its focal point) but also depends on local geological features, such as depth of sediment and bedrock layers.

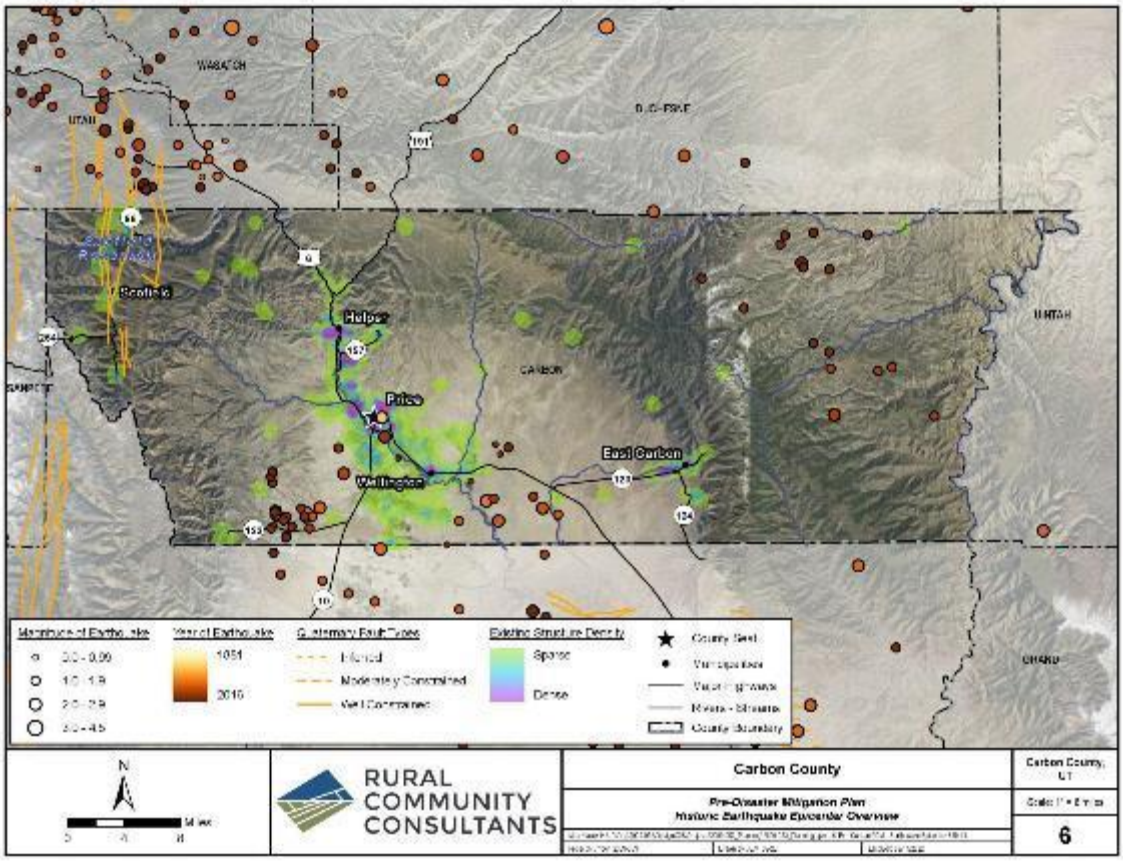
The following table correlates the MMI intensity with the Richter scale and effects of ground shaking:

Table 6.6.1.1 Description of Mercalli and Richter Scales

Mercalli Intensity	Richter Magnitude	Tremor	Qualitative Description	PGA (g)
I	< 3.5	Instrumental	People do not feel any earth movement.	-
II	3.5	Lightest	A few people might notice movement if they are at rest and/or on the upper floors of tall buildings.	-
III	4.2	Light	Many people indoors feel movement. Hanging objects swing back and forth. People outdoors might not realize that an earthquake is occurring.	-
IV	4.5	Mediocre	Most people indoors feel movement. Hanging objects swing. Dishes, windows, and doors rattle. The earthquake feels like a heavy truck hitting the walls. A few people outdoors may feel movement. Parked cars rock.	0.03 and below
V	4.8	Strongly	Almost everyone feels movement. Sleeping people are awakened. Doors swing open or close. Dishes are broken. Pictures on the wall move. Small objects move or are turned over. Trees might shake. Liquids might spill out of open containers.	0.03-0.08
VI	5.4	Much Fort	Everyone feels movement. People have trouble walking. Objects fall from shelves. Pictures fall off walls. Furniture moves. Plaster in walls might crack. Trees and bushes shake. Damage is slight in poorly built buildings. No structural damage.	0.08-0.15
VII	6.1	Strong	People have difficulty standing. Drivers feel their cars shaking. Some furniture breaks. Loose bricks fall from buildings. Damage is slight to moderate in well-built buildings; considerable in poorly built buildings.	0.15-0.25
VIII	6.5	Violent	Drivers have trouble steering. Houses that are not bolted down might shift on their foundations. Tall structures such as towers and chimneys might twist and fall. Well-built buildings suffer slight damage. Poorly built structures suffer severe damage. Tree branches break. Hillsides might crack if the ground is wet. Water levels in wells might change.	0.25-0.45
IX	6.9	Disastrous	Well-built buildings suffer considerable damage. Houses that are not bolted down move off their foundations. Some underground pipes are broken. The ground cracks. Reservoirs suffer serious damage.	0.45-0.6
X	7.3	Most Disastrous	Most buildings and their foundations are destroyed. Some bridges are destroyed. Dams are seriously damaged. Large landslides occur. Water is thrown on the banks of canals, rivers, lakes. The ground cracks in large areas. Railroad tracks are bent slightly.	0.6-0.8
XI	8.1	Catastrophic	Most buildings collapse. Some bridges are destroyed. Large cracks appear in the ground. Underground pipelines are destroyed. Railroad tracks are badly bent.	0.8-0.9
XII	> 8.1	Great Catastrophe	Almost everything is destroyed. Objects are thrown into the air. The ground moves in waves or ripples. Large amounts of rock may move.	0.9 and abo

Table that explains the extent of different earthquake impacts. (Source: ResearchGate.net)

Table 6.6.1.2 Historic Earthquake Locations and Extent



Map illustrating historic earthquake epicenters in Carbon County (click here for original).

Table 6.6.1.3 Recent Earthquakes (+3.0 Richter)

DATE	MAGNITUDE (RICHTER)	DEPTH	LOCATION
3/7/2000	4.3 mag	1.8mi	4 mi from Helper
2/5/1998	3.6 mag	1.3mi	4 mi from Helper
2/6/1991	3.5 mag	4.3mi	11 mi from Clear Creek
9/21/1981	3.5 mag	7.0mi	3 mi from Sunnyside
2/2/1996	3.5 mag	1.5mi	13 mi from Clear Creek
9/10/1992	3.4 mag	0.9mi	10 mi from Kenilworth
1/21/1993	3.4 mag	1.3mi	10 mi from Kenilworth
12/6/1996	3.4 mag	3.1mi	9 mi from Kenilworth
10/14/2020	3.3 mag	-3.4mi	6 mi from Kenilworth
11/12/2011	3.2 mag	15.5mi	21 mi from East Carbon
9/27/1990	3.2 mag	15.1mi	12 mi from Clear Creek

12/24/1990	3.1 mag	10.2mi	12 mi from Clear Creek
12/18/1992	3.1 mag	1.2mi	3 mi from Helper
7/13/1989	3.1 mag	1.1mi	4 mi from Kenilworth
2/25/1993	3.1 mag	8.8mi	6 mi from Scofield
3/22/1983	3.1 mag	7.0mi	1 mi from East Carbon
11/21/1990	3.0 mag	3.4mi	11 mi from Clear Creek
5/4/2006	3.0 mag	1.6mi	5 mi from Kenilworth
2/3/1989	3.0 mag	0.4mi	4 mi from Helper
8/4/1989	3.0 mag	3.2mi	3 mi from Kenilworth
1/23/1993	3.0 mag	1.0mi	12 mi from Kenilworth
9/22/1981	3.0 mag	7.0mi	3 mi from Sunnyside
5/4/1990	3.0 mag	1.3mi	9 mi from Clear Creek
11/15/1990	3.0 mag	1.4mi	9 mi from Clear Creek

Historic earthquake activity in Carbon County (source: USGS).

6.6.2 Overview & Profile

An earthquake, as defined by the Utah Geologic Survey, occurs due to the sudden breakage of rocks unable to withstand the deep-seated stresses beneath the Earth's surface. This results in abrupt shaking or motion along faults or zones of weakness, transmitting seismic waves outward and causing ground shaking or vibrations. The Richter scale measures earthquake magnitude on a seismograph, with each incremental increase representing a significant difference in power. Utah averages approximately 700 earthquakes annually, with about six reaching a magnitude of 3.0 or higher. A magnitude 5.5 or greater earthquake occurs approximately once every decade, with such events necessary to cause significant damage. Damage severity depends on various factors including soil and rock type, groundwater depth, topography, construction type, and population density.

6.6.3 Slopes & Faults

Carbon County, Utah, is characterized by a complex geology that includes slopes and faults. The region is nestled within the dynamic tectonic setting of the Basin and Range Province. The slopes in Carbon County are primarily a result of the rugged mountainous terrain, with steep inclines and cliffs found throughout the area. These slopes contribute to the scenic beauty of the county but can also present challenges for development.

In terms of faults, Carbon County is intersected by several active and inactive fault lines. These faults are evidence of past and ongoing tectonic activity in the region. While seismic events are relatively infrequent, the presence of faults increases the potential for earthquakes, which can impact the built environment and infrastructure.

EARTHQUAKE (E): Earthquakes may strike at any time in this region or regions that are geographically close to the county; therefore, it is vital to educate the public on how to prepare for such an event.

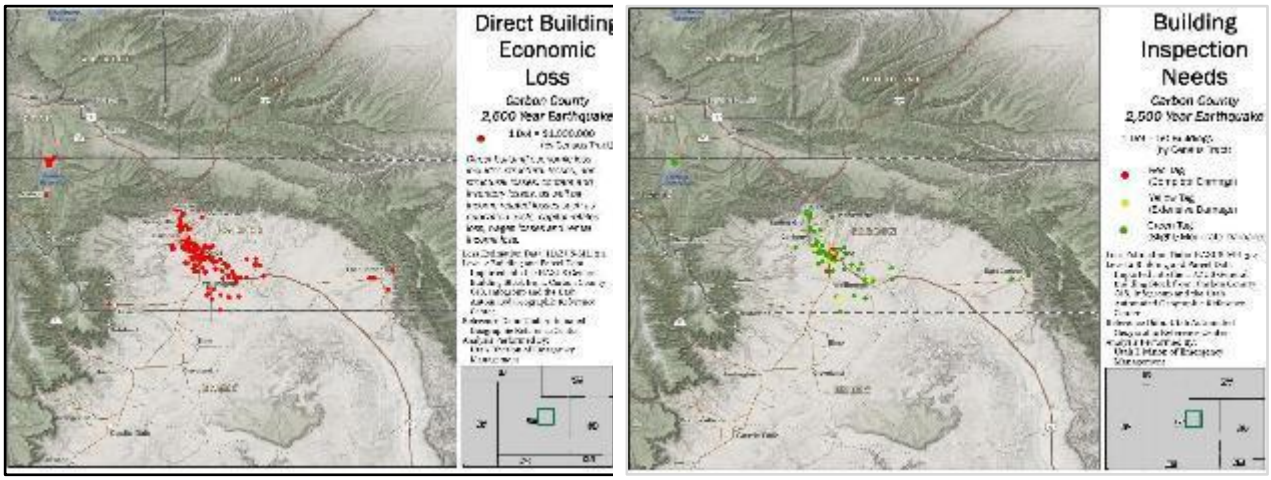
Table 6.6.3.1- Earthquake Hazard Summary Profile

Potential Magnitude		Negligible	Less than 10%
		Limited	10-15%
	X	Critical	25-50%
		Catastrophic	More than 50%
Probability		Highly Likely	
		Likely	
	X	Possible: *Based on historical occurrences and seismic activity along the Wasatch Fault and other local fault systems, Carbon County has a "Possible" probability of experiencing a significant earthquake event (magnitude 5.0 or greater) within the next 5 years. This corresponds to a 10-49% annual probability.*	
		Unlikely	
Location	Countywide		
Seasonal Patterns	Earthquakes may occur at any time		
Conditions	Historic movement along faults, primarily the Intermountain Seismic Zone.		
Duration	Event may be short, recovery may be days or months.		
Secondary Hazards	Fire, landslide, rock falls, avalanche, flooding.		
Climate Change	Climate change is not expected to impact earthquake risk directly, but it could exacerbate hazards Utah already experiences.		
Analysis Used	Review of hazard analysis plans and other information provided by the University of Utah Seismograph Station, UGS, USGS, DEM, AGRC.		

6.6.4 Vulnerability Analysis

Based on the Hazus Earthquake Global Risk Report from April 2018, a 6.5 magnitude earthquake could result in 1,759 damaged buildings, including 133 beyond repair, displacing 148 households and necessitating public sheltering for 99 individuals. Economic losses are estimated at $271.70 million. Vulnerability analysis, conducted using Hazards United States – Multihazards (HAZUS-MH) modeling, incorporates a probabilistic 2500-year event with a Richter magnitude of 7.1 and a hypothetical 5.9 magnitude event near populated areas.

This analysis was conducted by the GIS department at the Utah Division of Emergency Management in 2018. The GIS Department does not currently have any recently updated HAZUS maps or data as our GIS program has only recently filled out positions responsible for this. Maps and tables will again be updated as new information becomes available.



Source: HAZUS Analyst Division of Emergency Management, April 2018

6.6.4.1 Jurisdictional Vulnerability - Earthquake

Earthquake vulnerability varies across participating jurisdictions based on building stock, infrastructure, and proximity to fault lines. The potential impacts include:

- Damage to critical infrastructure and essential services.
- Structural failure of older buildings, particularly unreinforced masonry.
- Injuries and potential casualties, especially in densely populated areas.
- Economic losses from business disruption and reconstruction costs.
- Isolation of remote communities due to transportation infrastructure damage.
- Interruption of utility services including water, sewer, and power.
- Disruption of educational and government operations.

More detailed jurisdiction-specific earthquake vulnerability assessments are provided in Section 7.

6.6.5 Critical Facilities Protection

Protecting critical facilities are vital as the facilities play an important role in coordinating response and recovery following an earthquake. For this reason, listed below are vital facilities and facilities with the potential of causing a secondary disaster if destroyed.

- Facilities or locations vital to earthquake response efforts
- Emergency operations centers
- Police and fire stations
- Hospitals

- Highway garages
- Selected roads and bridges
- Evacuation routes

Facilities and locations, which if destroyed would create a secondary disaster:

- Facilities housing hazardous materials
- Wastewater treatment plants
- Schools
- Nursing homes

Table 6.6.5.1 - Building Damage Counts and Estimated Losses

Note: Data based on HAZUS mapping of the M7.0-Joes Valley fault zone v3 predefined scenario. Analysis conducted on Jul 12, 2024. Data will be updated as the Utah Division of Emergency Management completes a complete analysis.

	Estimated Losses from predefined scenario	
	Joes Valley Fault M7.0	2500-yr M7.1
Residential	$1,506,911,000	
Commercial	$642,900,000	
Industrial	$178,615,000	
Agriculture	$5,878,000	
Religion	$55,885,000	
Government	$122,878,000	
Education	$236,891,000	
Totals	**$2,749,958,000**	

Source: HAZUS-MH, July 2024

Table 6.6.5.2 - Damage to Transportation and Utilities

Note: Data based on HAZUS mapping of the M7.0-Joes Valley fault zone v3 predefined scenario. Analysis conducted on Jul 12, 2024. Data will be updated as the Utah Division of Emergency Management completes a complete analysis.

	Estimated Losses from predefined scenario	
	Joes Valley Fault M7.0	2500-yr M7.1

Wastewater Facilities		
Wastewater Pipelines		
Potable Water Pipelines		
Natural Gas Pipelines		
Electrical Power Facilities		
Communication Facilities		
Highway Bridges	$101,860,000	
Highway Segments	$401,559,000	
Railway Bridges	$300,900,000	
Railway Segments	$178,773,000	
Railway Facilities	$2,663,000	
Airport Facilities	$5,300,000	
Runway	$17,049,000	
Totals		
Source: HAZUS-MH, July 2024		

6.6.6 Natural Resource Protection

This section will be completed as data becomes available. For county policies regarding natural resources, please refer to the Carbon County Resource Management *Plan.*

6.6.7 Secondary Hazards

Associated earthquake hazards include ground shaking, surface fault rupture, tectonic subsidence, soil liquefaction, flooding, avalanches, fire, slope failure, sensitive clays, and subsidence.

6.6.7.1 Ground Shaking

Ground shaking is caused by the passage of seismic waves generated by an earthquake. Shaking can vary in intensity but is the greatest secondary hazard because it affects large areas and stimulates many of the other hazards associated with earthquakes. The waves move the earth's surface laterally and horizontally and vary in frequency and amplitude. High frequency, small amplitude waves cause more damage to short, stiff buildings.

Low frequency, large amplitude waves have a greater effect on high-rise buildings. The intensity depends on geologic features such as bedrock and rock type, topography, and the location and magnitude of the earthquake. Other significant factors include groundwater depth, basin shape, thickness of sediment, and the degree of sediment consolidation. Moderate to large earthquake events generally produce trembling for about 10 to 30 seconds. Aftershocks can occur erratically for weeks or even months after the main earthquake event. (DEM 2008)

6.6.7.2 Surface Fault Rupture and Tectonic Subsidence

Surface fault rupture or down dropping and tilting associated with tectonic subsidence can rupture the ground surface and in Utah the result is the formation of scarps or steep breaks in the slope. The 1934 Hansel Valley earthquake resulted in a surface displacement of approximately 1.6 feet. The highest potential for surface faulting exists in the central segments of the Wasatch fault.

Also, earthquakes having a magnitude of 6.5 or greater could result in surface faulting of 16 to 20 feet high and 12 to 44-mile-long break segments. Surface displacement generally occurs over a zone of hundreds of feet wide called the zone of deformation. Tectonic subsidence generally depends on the amount of surface fault displacement. The greatest amount of subsidence will be in the fault zone and will gradually diminish out into the valley .

6.6.7.3 Soil Liquefaction

Sudden decreases in the shear strength of sandy soils during earthquakes can lead to liquefaction, causing soil collapse and increased pore-water pressure. Liquefaction is common in water-saturated sandy or silty sediments and can result in soil flow even on gentle slopes. Liquefaction can occur during earthquakes of magnitude 5.0 or greater. (DEM 2008)

6.6.7.4 Lateral Spreading

Lateral spreading involves the movement of surface soil layers independently over liquefied layers, causing ground cracking, settlement, or tipping of buildings, and the formation of sand boils. This phenomenon can occur during earthquakes of magnitude 5.0 or greater.

6.6.7.5 Slope Failure

Ground shaking can trigger rockfalls and landslides in mountainous or canyon areas, occurring up to 50 miles away from the earthquake source, with landslides particularly likely within 25 miles of a 6.0 magnitude earthquake. (DEM 2008)

6.6.7.6 Flooding

Flooding can happen due to tectonic subsidence and tilting, dam failure, seiches (waves generated in standing bodies of water) in lakes and reservoirs, surface-water diversion or disruption, and increased ground-water discharge. (DEM 2008)

6.6.7.7 Avalanches

Ground movement associated with earthquakes can trigger avalanches, particularly in steep terrain with high precipitation, earthquake potential, and population density, posing risks along the Wasatch Front during winter or spring months.

6.6.7.8 Sensitive Clays

Sensitive clays are a soil type that lose strength when disturbed and result in liquefaction or collapse. The resulting type of ground failure is similar to liquefaction .

6.6.7.9 Subsidence

Subsidence refers to the settling or sinking of the Earth's crust, primarily in loose granular materials lacking clay content.

6.6.7.10 Climate Change

While earthquakes themselves are not directly influenced by climate change, secondary effects may be exacerbated. Climate change-induced variations in precipitation patterns could increase soil moisture in certain areas, potentially amplifying ground shaking effects during seismic events. Additionally, if prolonged drought leads to groundwater depletion, slight land subsidence might occur, potentially affecting fault stress in some areas. These interactions are complex, however, and the direct correlation between climate change and seismic activity in Carbon County remains an area requiring further scientific study.

6.7 Flood (F)

The following state disaster declarations have affected Carbon County since the last plan update in 2018:

- Sept. 9, 2021: Executive Order 2021-14 Declaring a State of Emergency Due to Flooding.
- Aug. 23, 2022: Executive Order 2022-05 Declaring a State of Emergency Due to Southern Utah Flooding.
- April 18, 2023: Executive Order 2023-05 – Declaring a State of Emergency Due to Flooding.

No federal disaster declarations specific to flooding have been issued for Carbon County during this period.

6.7.1 Overview & Profile

Flooding is a natural occurrence for rivers and streams, typically defined as the overflow of water onto land that is normally dry. This phenomenon can be triggered by an excess of snowmelt, rainfall, or the failure of natural or engineered impoundments, affecting the banks and adjacent floodplains. Floodplains, which are lowland areas near rivers, lakes, reservoirs, and urban areas with low terrain, are particularly susceptible to recurring floods. The occurrence of flooding is often associated with a peak discharge, or rate of flow in cubic feet per second, surpassing the capacity of the river channel or storm sewer system within urban areas. The peak discharge is typically associated with a probability of occurrence, expressed in terms of recurrence intervals or return periods. For instance, a 10 percent probability of occurrence implies a flood expected once in 10 years or 10 times in a 100-year span.

Flooding results in various forms of damage, including land and property saturation, erosion, deposition of mud and debris, and the fast-flowing waters themselves. Injuries and fatalities often stem from the swift movement of floodwaters, while property damage mainly results from inundation by sediment-filled water. Flash flood conditions, characterized by intense rainfall over a short duration, pose significant risks .

The greatest flood risk within Carbon County has been associated with cloudburst storms that generally result in flash flooding in localized areas. Heavy rain and rapid snowpack melt can also result in unusually heavy water, and/or mud and debris flows.

These streams have flooded in the past and also pose a future flood threat, many of which are mapped through the NFIP (when available). Many channels within the County can pose a threat due to channel constrictions from debris and could result in residential flooding. All of the alluvial fans in the County have been developed or are being developed, and therefore, residential and commercial flooding is probable. Floods can also pose a threat to the agricultural lands that are in the lower portions of the alluvial fans.

6.7.2 Location and Extent

The entire county is susceptible to flooding, particularly in low-lying areas. The Price River and its tributaries, including Cardinal Wash, Meads Wash, Spring Glen Wash, Spring Canyon Wash, Soldier Creek, Coal Creek, Hayes Wash, Deadman Creek, Drunkard Wash, Pinnacle Canyon Wash, Gordon Creek, Garley Canyon Wash, Consumers Wash, and Willow Creek, present a risk of overflow. The Price River, the primary drainage system flowing southwest through Carbon County, is prone to overflow during spring snowmelt and summer and fall cloudburst storms. The Flood Insurance Study # 49007CV000A for Carbon County, Utah, and incorporated areas, effective May 2, 2012, is accessible from the Carbon County Building and Planning Department.

Additionally, several canals pose threats to Carbon County, including the Carbon, Price-Wellington, and North Carbon Group canals. The Carbon Canal, constructed from earthen materials, poses a threat to the south half of Price, including access to hospitals on Westwood Boulevard and US6. Frequent floods could potentially affect the west side of Price, including Westwood and Robertson subdivisions. The Price-Wellington earthen canal could similarly threaten the south half of Price and Wellington, while the piped North Carbon Group Canal could pose risks to Spring Glen, Helper City, and North Carbonville areas.

The Price River floodplain between Price City and Helper City experiences the highest degree of development. While the recurrence interval represents the long-term average period between floods of a specific magnitude, rare floods could occur at shorter intervals. Price Canyon serves as the primary route for culinary water transmission pipelines operated by Price City, Price River Water Improvement District (PRWID), and Helper City. Water treatment plants operated by Price and PRWID are located at the mouth of Price Canyon at the Castlegate Narrows. Transportation crossroads are situated at US6/SR191 at the confluence of Price River and Willow Creek, with the UDOT weigh station located just downstream (less than 1 mile) from this junction.

6.7.2.1 Flood Extent

Flooding in Carbon County varies in extent from minor nuisance flooding affecting isolated roads and properties to major events impacting multiple communities and critical infrastructure. The extent of flooding is measured using the following classifications:

1. **Minor Flooding**: Minimal or no property damage, but possibly some public inconvenience.
   - Water levels: Generally less than 1 foot above flood stage
   - Impacts: Temporary road closures, water in low-lying areas, minor erosion
2. **Moderate Flooding**: Some inundation of structures and roads near streams.
   - Water levels: 1-3 feet above flood stage
   - Impacts: Evacuation of people and/or transfer of property to higher elevations may be necessary, secondary roads and highways may be closed
3. **Major Flooding**: Extensive inundation of structures and roads.
   - Water levels: More than 3 feet above flood stage
   - Impacts: Significant evacuations of people and/or transfer of property to higher elevations, primary transportation routes may be impacted
4. **Flash Flooding**: Rapid rise of water in a short period of time, often causing significant damage.
   - Water velocity: High, often carrying debris
   - Warning time: Limited, sometimes less than 60 minutes
   - Impacts: Can cause significant damage even in areas outside typical flood zones

The FEMA Flood Insurance Rate Maps (FIRMs) for Carbon County designate Special Flood Hazard Areas (SFHAs) that represent the areas subject to inundation by the 1-percent-annual-chance flood (100-year flood). These maps categorize flood hazard areas as follows:

- Zone A: Areas with a 1% annual chance of flooding, no base flood elevations determined
- Zone AE: Areas with a 1% annual chance of flooding, base flood elevations determined
- Zone AH: Areas with a 1% annual chance of shallow flooding (usually areas of ponding), base flood elevations determined
- Zone X: Areas of minimal flood hazard (outside the 500-year flood zone)

Historical flood events in Carbon County have produced flood depths ranging from several inches to more than four feet in the most severe cases, with floodwaters affecting areas both within and outside the designated flood zones.

FLOODING (F): Flooding continues to be of concern in the County and Cities and Towns within the County. The County can experience flooding year-round. Work to reduce economic and property loss due to flooding by providing public education on buying flood insurance. Thunderstorms produce torrential rains that cause the canal system to overflow.

Table 6.7.2.1 - Flooding Hazard Profile

Potential Magnitude		Negligible	Less than 10%
		Limited	10-15%
	X	Critical	25-50%
		Catastrophic	More than 50%
Probability	X	Highly Likely	
		Likely	
		Possible	
		Unlikely	
Location	Primarily along the area of the Price River Drainage.		
Prior Occurrences	According to NOAA's flood event database, seven flash flooding events have occurred in Carbon County since 2016. Notable events include: - August 23, 2016: Flash flooding affected Wellington and surrounding areas. - July 17, 2018: Flash flooding occurred along Price River. - July 26, 2021: Flash flooding impacted multiple communities within the county. - September 3, 2023: Heavy rainfall caused mud and rockslides in		

	Carbon County, leading to closures on portions of U.S. Route 6 and U.S. Route 191. These events have resulted in road damage, localized property flooding, and temporary disruptions to infrastructure.
Seasonal Pattern or Conditions	Spring and Summer. Thunderstorms, Cloudburst Storms and Heavy Snowfall Runoff.
Duration	Flooding Can Last Anywhere from Hours to Days and Even Months.
Climate Change	The increase in flood risk will occur in two ways. One, warmer temperatures will increase the risk of rain-on-snow events. Two, climate change will increase the incidence of extreme precipitation events and likely lead to an increase in flash flooding
Analysis Used	Review of Flood Insurance Studies (FIS), Flood Insurance Rate Maps (FIRMs), the Army Corp of Engineers Flood Study, Hazard Analysis Plans, and Geographic Information System (GIS) data.

6.7.3 National Flood Insurance Program Participation

Carbon County and its participating jurisdictions demonstrate compliance with NFIP requirements through the following participation activities. Each jurisdiction has adopted local floodplain management regulations that meet or exceed NFIP minimum criteria, appointed designated floodplain administrators, and maintains enforcement procedures to regulate development in Special Flood Hazard Areas (SFHAs).

6.7.3.1 NFIP Implementation Details

Each NFIP participating community implements the program as follows:

Carbon County:

- Floodplain regulations adopted: Ordinance 4.2.22
- Current FIRM adoption: May 2, 2012
- Floodplain Administrator: County Zoning Administrator
- Enforces through Carbon County Flood Plain Overlay Zone
- Substantial damage/improvement provisions: Following flood events, the Zoning Administrator conducts damage assessments of structures in the affected areas. When structures are determined to have sustained damage equal to or exceeding 50% of the structure's pre-damage market value, owners must bring the entire structure into compliance with current floodplain regulations before repairs can be completed. Similar requirements apply when improvements to a structure exceed 50% of its market value.
- Carbon County implements NFIP requirements through regular coordination between the Zoning Administrator and Building Department. The county regulates all development activities within SFHAs

through its permit review process, ensuring new construction meets elevation requirements and other floodplain management standards. The county maintains records of all floodplain development permits and conducts site inspections to verify compliance.

East Carbon/Sunnyside:

- NFIP Status: Clarification needed regarding current participation following municipal merger
- Municipal History: East Carbon City and Sunnyside merged in 2014 to form a single jurisdiction
- Current FIRM: May 2, 2012
- Floodplain Administrator: Mayor
- Historical Context: Prior to the 2014 merger, East Carbon was suspended from the NFIP (effective May 4, 2012), likely due to not adopting the 2012 flood insurance rate maps. Sunnyside maintained active NFIP participation as part of unincorporated Carbon County. Following the merger, the combined municipality implements and enforces local floodplain management regulations to regulate and permit development in SFHAs.
- Substantial damage/improvement provisions: The City Recorder assists the Mayor in documenting damage assessments after flood events. Structures with damage exceeding 50% of market value must comply with current floodplain requirements during repair.

Helper:

- Floodplain regulations: Ordinance 11.5.10
- Current FIRM adoption: May 2, 2012
- Floodplain Administrator: City Council Member
- Enforces through City Flood Plain Overlay Ordinance
- Substantial damage/improvement provisions: After flood events, the City Engineer conducts damage assessments, documenting findings through the City's permit system. Structures with substantial damage or planned substantial improvements must meet current floodplain standards.

Price:

- Floodplain regulations: Ordinance 12.21.11 (1/25/2012)
- Current FIRM adoption: May 2, 2012
- Floodplain Administrator: City Engineer
- Enforces through Floodplain Ordinance
- Substantial damage/improvement provisions: The City Engineer coordinates with building officials to evaluate damaged structures after flooding events. When damage exceeds 50% of market value, permits for repairs require bringing the structure into full compliance with current floodplain regulations.

Scofield:

- NFIP Status: Not participating
- Flood Hazard Designation: Approximate Zone A
- Current FIRM: May 2, 2012
- Floodplain Administrator: Mayor

- Scofield Town has not joined the NFIP. The community is designated as Approximate Zone A, meaning detailed flood studies have not been conducted. While flood insurance rate maps exist for the community (effective May 2, 2012), Scofield has not adopted floodplain management regulations to participate in the NFIP. Without NFIP participation, properties in Scofield are not eligible for federal flood insurance. Scofield has not adopted the required floodplain management ordinance primarily due to limited administrative capacity. As a small community with minimal staff resources, the town has been unable to implement and enforce the regulatory framework necessary for NFIP compliance. However, the town recognizes the value of flood insurance availability for its residents and intends to reevaluate NFIP participation as staffing resources allow.

Wellington:

- Current FIRM adoption: May 2, 2012
- Floodplain Administrator: City Recorder
- Enforces through Land Use Codes
- Substantial damage/improvement provisions: Following flood events, the City Recorder coordinates damage assessments. Owners of substantially damaged properties must submit elevation certificates and meet all current floodplain requirements during the repair process.

Special Districts are not eligible for NFIP participation but coordinate with jurisdictions on floodplain management. For further information, see also:

- Appendix K (Repetitive Loss)
- 5.14Section 6.7.4 (Vulnerability Analysis)

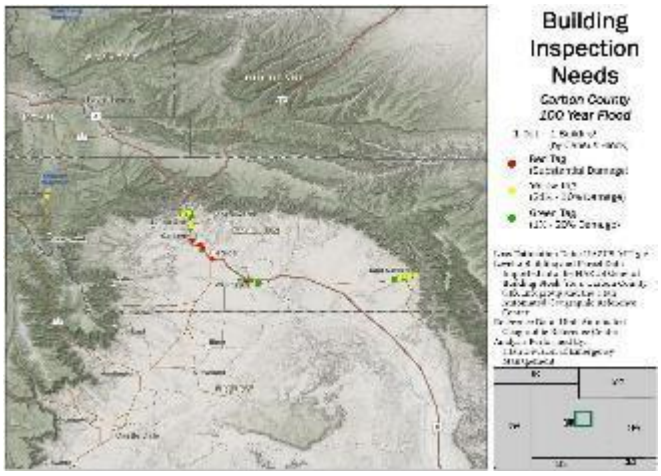
Table 6.7.3.2 - Carbon County National Flood Insurance Policy Information (2022)

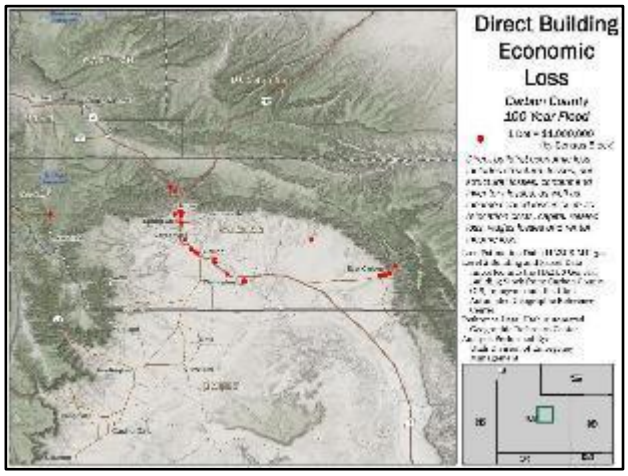
CID	Community Name	Init FHBM Identified	Init FIRM Identified	Curr Eff Map Date	Reg-Emer Date	Tribal
490032#	CARBON COUNTY	06/14/77	11/15/79	05/02/12	11/15/79	No
490034#	HELPER	12/28/1973	03/01/79	05/02/12	03/01/79	No
490036#	PRICE	01/04/74	03/01/79	05/02/12	03/01/79	No
490205#	SUNNYSIDE	04/02/76	09/29/78	05/02/12	09/29/78	No
490037#	WELLINGTON	07/26/74	05/02/12	05/02/12	02/02/84	No
490225#	EAST CARBON	10/29/1976	05/01/86	05/02/12	05/04/12(S)	No
490193#	SCOFIELD	unknown	05/02/12	05/02/12	05/02/13	No

Additionally, Carbon County and all participating jurisdictions have no repetitive loss properties and no severe repetitive loss properties as confirmed by the Utah Division of Emergency Management. For further information on repetitive loss properties, see Appendix K. Additionally, detailed information on each jurisdiction's NFIP implementation can be found in Section 5.14.1 (Ordinances) and Section 6.7.4 (Vulnerability Analysis).

6.7.4 Vulnerability Analysis

The impact of a 100-Year flooding event on Carbon County could result in moderate to severe damage to buildings, financial losses, displaced households, and the need for public sheltering (Hazus-MH: Flood Global Risk Report, April 2018).





Source: HAZUS Analyst Division of Emergency Management, April 2018

Assessment of flood risk in Carbon County was conducted using the modeling program Hazards United States – Multihazards (HAZUS-MH), evaluating both 100-year and 500-year flood events. Analysis was based on Flood Insurance Rate Maps (FIRM) or Digital Flood Insurance Rate Maps (DFIRM). Streams with detailed flood cross-section data were evaluated, highlighting potential impacts on structures, agriculture, vehicles, and debris generation (HAZUS Analyst Office of Division of Emergency Management, April 2018).

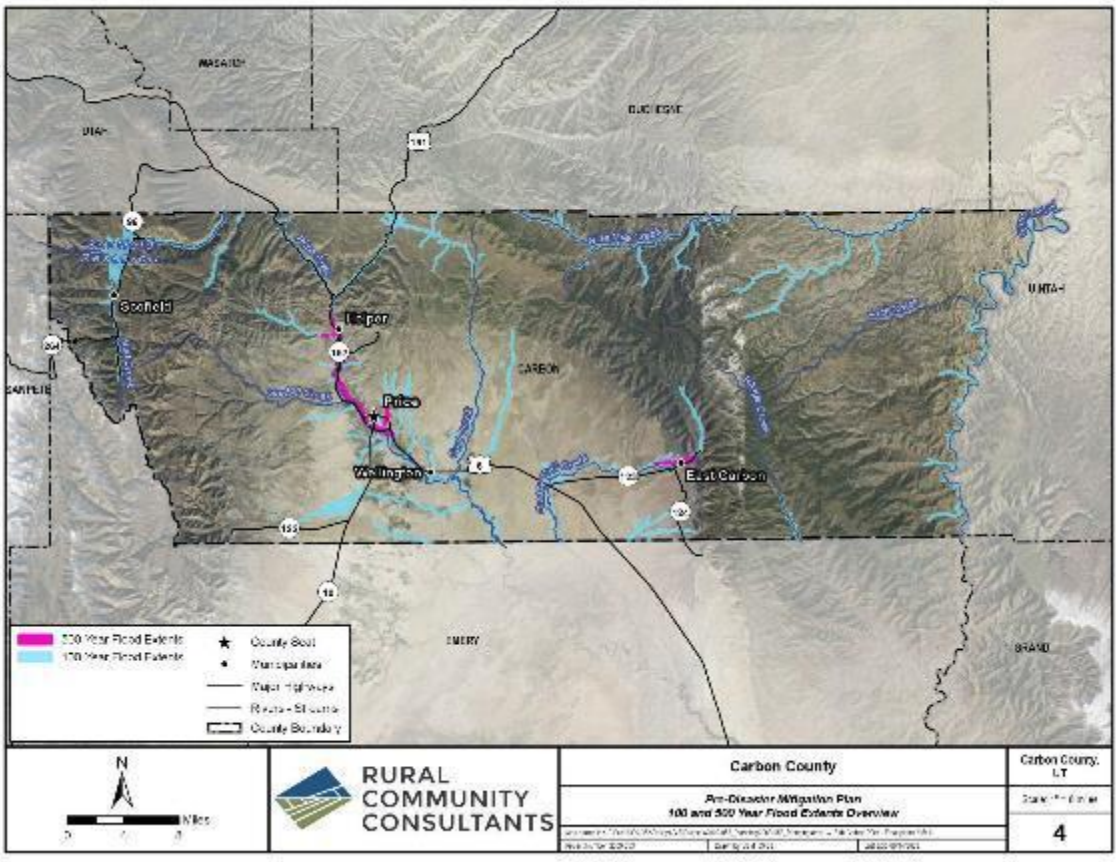
6.7.4.1 - Jurisdictional Vulnerability - Flooding

Each participating jurisdiction in Carbon County faces unique flood vulnerabilities based on its geographic location and development patterns. The potential impacts include:

- Damage to residential and commercial structures.
- Disruption to transportation infrastructure and evacuation routes.
- Economic losses from business closures and property damage.
- Contamination of water supplies.
- Public health and safety hazards.
- Erosion and sedimentation affecting natural systems.
- Costs for emergency response and recovery operations.

Section 7 provides detailed jurisdiction-specific vulnerability assessments and potential impacts.

6.7.5 Secondary Hazards



Map illustrating FEMA flood extents in the Carbon County area (click here for original).

6.7.5.1 Flooding due to Snowmelt

Snowmelt floods occur during April, May, and June, triggered by rapid snowmelt in the mountains. The risk is influenced by snowpack accumulation and weather conditions.

6.7.5.2 Flooding due to Rainfall

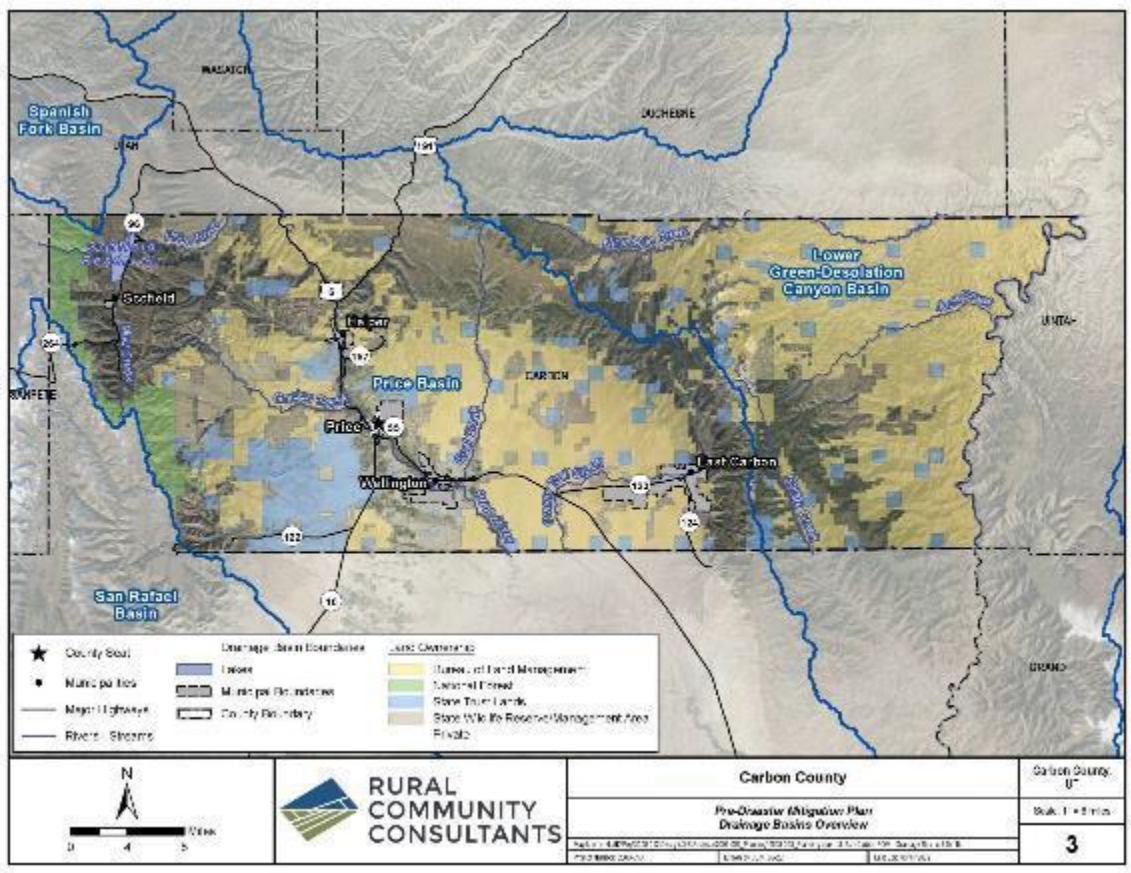
Rainfall floods result from large precipitation amounts, including intense storms like cloudbursts or thunderstorms. Urban areas, lake and reservoir shorelines, and river/creek floodplain areas are particularly vulnerable.

Areas prone to flooding, according to the Utah Natural Hazards Handbook, include lake and reservoir shorelines which may flood when the flow of water into the lakes or reservoirs is greater than the outflow capacity. These types of lakes are subject to considerable variations in water levels because the only outflow is by evaporation. Successive wet or dry periods lasting several years can result in a large change in size of terminal lakes. Development near this type of lake during a dry period is risky and certain to get flooded during wet periods .

River and creek floodplain areas range from narrow zones to extensive lowlands extending great distances from a natural drainage area. Construction in floodplains is also dangerous because of the high flood risk.

Urban areas are also prone to flooding because of the decrease in vegetation of the natural watershed. Houses, driveways, parking lots, buildings, and streets are all replacing the vegetative cover that is so important in lessening the potential for flood. This type of development prevents water infiltration into the soil and greatly

increases the runoff. In some areas undersized piping and channels are used which may cause flooding. Man-made drainage channels can also play a role in flooding. Trash and debris can obstruct passageways .



Map illustrating drainage basins in the Carbon County area (click here for original).

6.7.5.3 Climate Change

Climate change is already altering flood risk patterns in Carbon County and is expected to continue this trend:

- Precipitation is projected to become more variable and intense, with increases in "flashy" storm events that can quickly overwhelm drainage systems.
- Earlier spring snowmelt is changing seasonal flood timing, with peak flows occurring up to 2-3 weeks earlier than historical averages.
- More precipitation falling as rain rather than snow in winter months increases winter and early spring flooding potential.
- Extended drought periods can reduce soil permeability, potentially increasing runoff during subsequent rainfall events.

Local stream gauge data indicates a shift toward earlier peak flows and more extreme discharge variability over the past decade. Flood mitigation planning should account for these changing patterns rather than relying solely on historical flood data. Special attention should be given to smaller tributaries and alluvial fan areas that may be particularly sensitive to intense, localized rainfall events.

6.8 Landslide (L)

Note: This plan update includes hazard events through October 2024. No federal or state disaster declarations specific to landslides have been issued for Carbon County since the last plan update in 2018.

6.8.1 Overview & Profile

The map "Carbon County Landslide Hazard" (in 6.8.3) shows the locations of potentially active landslides and identifies historical landslides and their locations. Landslides are generally located in well- defined, localized areas, but when they occur is usually unpredictable.

The three main contributing factors to slope failure in the region are areas with moderate to steep slopes, conductive geology, and high precipitation. Precipitation events, topography, and vegetation are the main elements that cause slope failure . Landslide distribution in Utah is closely associated with topography and physiographic provinces. The two physiographic regions conducive to landslides in Utah are the Middle Rocky Mountains province and the High Plateaus subdivision of the Colorado Plateau physiographic province. Landslides, also known as slope failure, are classified based on the type of movement and the material involved. The five types of movement include falls, topples, slides, lateral spreads, and flows, while the materials involved can be rocks, debris (coarse-grained soil), and earth (fine-grained soil). Slope failure types include rock falls, rock topples, rock slides, debris flows, debris topples, debris slides, slumps, and earth flows.

LANDSLIDE (L): There is a potential risk to structures located in areas identified Federal and state agencies and depicted in GIS as landslide risk areas.

Table 6.8.1.1 - Landslide Hazard Profile

Potential Magnitude		Negligible	Less than 10%
	X	Limited	10-15%
		Critical	25-50%
		Catastrophic	More than 50%
Probability		Highly Likely	
		Likely	
	X	Possible	
		Unlikely	
Location	See map Figure 6.8.3 Landslides generally occur in canyon mouths and foothill areas.		
Extent	The FEMA NRI models identify the potential impact of landslides to be most significant in the unincorporated county areas of the County		
Seasonal Pattern or Conditions	Spring and summer are usually caused by the stress release of over-weighted soils and or loosening of rock and debris. The Seeley and Mathis fire burn scars have only new vegetation to hold the soils.		
Duration	Landslides generally last hours or days, but some can last weeks, years and decades.		
Secondary Hazards	Flooding (natural dams), traffic accidents.		

Climate Change	Warmer, future winter temperatures will create a scenario where landslides may be more likely. Warmer winter temperatures mean it is less likely that soils are frozen, even if snowpack exists.
Analysis Used	Information and maps provided by Carbon County Emergency Manager, UDOT, NOAA, DEM - 2019 Utah Hazard Mitigation Plan, UGS, FEMA National Risk Index

Figure 6.8.1.2 - Overall National Risk Index Score for Landslides

Census Tract	Communities in Census Tract	FEMA National Risk Index Score	Rating
000100	Wellington, Unincorporated County	78.10	Relatively Moderate
000200	Price City, Unincorporated County	93.00	Relatively Moderate
000300	Price City	79.50	Relatively Moderate
000500	Helper, Scofield, Unincorporated County	99.40	Very High
000600	East Carbon / Sunnyside, Unincorporated County	99.30	Relatively High

Risk Index scores are calculated using an equation that combines scores for Expected Annual Loss due to natural hazards, Social Vulnerability, and Community Resilience (Expected Annual Loss x Social Vulnerability / Community Resilience = Risk Index).
Source: National Risk Index, 2024

6.8.2 Location & Extent

Future landslide areas are usually located in the areas of historical landslides, which are well defined and localized. Landslides have been one of the most recurring hazards within Carbon County along the canyon benches. Homes in these areas have the greatest vulnerability to rock falls, debris flows, landslides, and other types of slope failure.

The map "Carbon County Landslide Hazard" shows the locations of potentially active landslides and identifies historical landslides and their locations. Landslides are generally located in well-defined, localized areas, but their occurrence is usually unpredictable. The impact of a landslide can be countywide.

Several areas in the county pose landslide risks. The largest landslide threat in the county is along the Bookcliff Mountain range, where landslides have historically taken place. Specific areas include the Cave Hollow subdivision, which has development adjacent to steep slopes, and the areas of 100 East St. from 500 North to 800 North in Price. This area could be affected because the backyards of these homes are along the base of Wood Hill.

Price Canyon has the water treatment facility that could be damaged in a landslide or slope failure event. The Wasatch Plateau has also experienced several landslides. Price Canyon has unstable slopes that threaten US6, Price River, plus water and sewer pipelines. Past slide activity occurred at the top of Price Canyon just before Kyune. The area above US 6 and below the Price Recreation Area has unstable "creeping" landslide activity.

Rockfall occurs up and down Price Canyon, posing a continual threat with many events causing rockfall onto the road, endangering motorists. The weight station continuously has problems with rock falling.

A major landslide event took place north and west of the Town of Thistle in Utah County, severely affecting Carbon County's economy. In 1983, the Thistle landslide destroyed the major highway and railroad connecting

Price City with the Wasatch Front. Residents were unable to conduct business effectively in and out of Price City, and freight costs increased dramatically.

Several small-scale rockslides and landslides occur annually in Carbon County, usually due to heavy rain and flash flooding. These rockslides are often classified as debris flows, in which moving water carries mud, rocks, and other debris over the affected areas. The following table from the NOAA Storm Events Database lists the debris flows that triggered rockslides/mudslides between 2000–2024 in the county.

Table 6.8.2.1 - Debris Flow that Triggered Rockslides / Mudslides (2000-2024)

Debris Flow Location	Date	Description
Utah Railway Junction (6W to 5WNW)	09/03/2023	UDOT reported a significant debris flow over U.S. Highway 6 due to heavy rain over the Bear Fire burn scar area in Price Canyon. Due to the debris, the road remained closed into the following morning.
Source: NOAA Storm Events Database (2024)		

6.8.3 Vulnerability Analysis

Losses due to landslide events are generally tied to the repair of roadways or the removal of debris on roadways. These roads are maintained by UDOT. A limited course of mitigation may occur because it is not economically feasible for UDOT to spend tax dollars to rebuild a new road route or remove the large facing walls of rock and soil.

6.8.3.1 Jurisdictional Vulnerability - Landslide

Landslide vulnerability varies significantly across participating jurisdictions based on topography and development patterns. Potential impacts include:

- Damage to or destruction of structures and properties.
- Disruption of transportation networks and access routes.
- Damage to utility infrastructure including water and power lines.
- Economic losses from property damage and business disruption.
- Safety hazards and potential loss of life.
- Costs for debris removal and infrastructure repair.
- Secondary impacts from blocked waterways or damaged drainage systems.
-

Section 7 provides detailed jurisdiction-specific landslide vulnerability assessments and potential impacts.

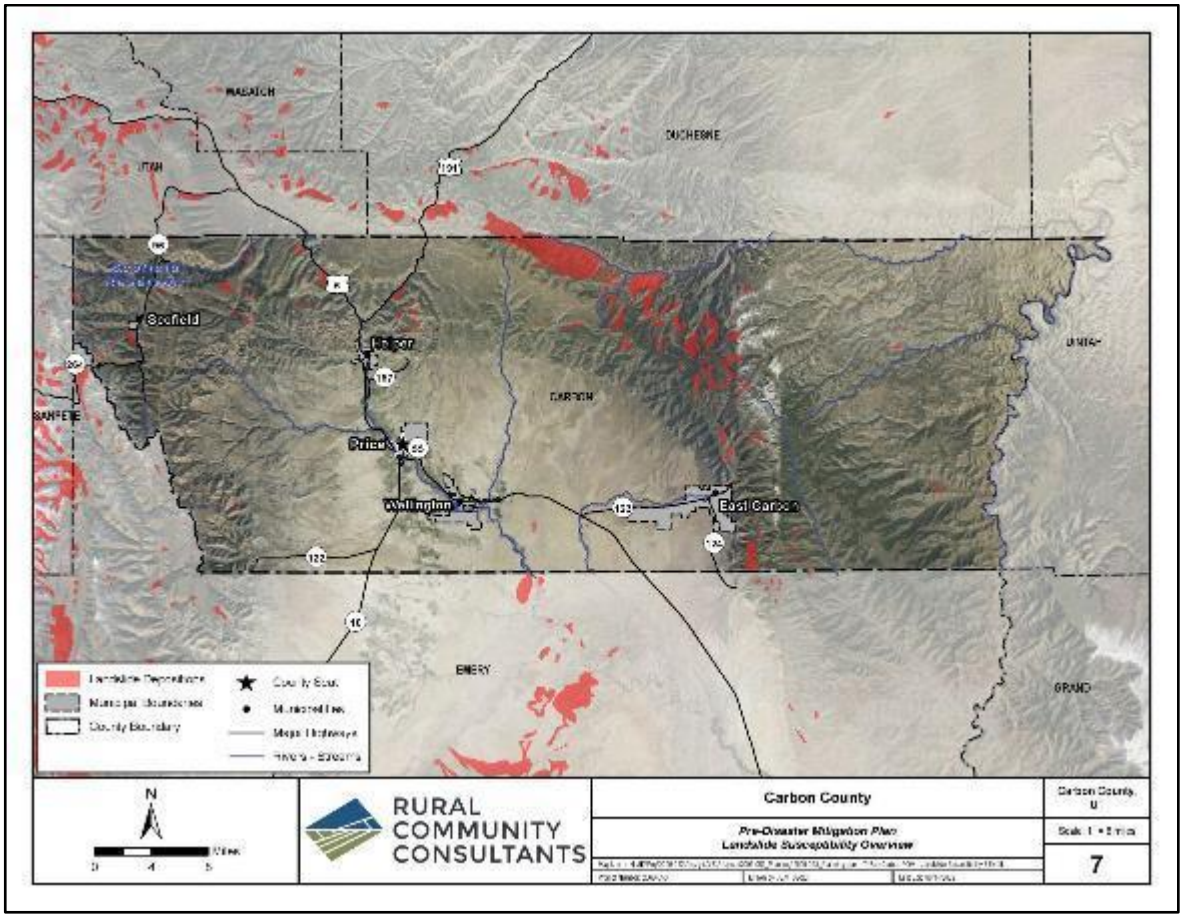
Figure 6.8.3.2 - Expected Annual Loss from Landslides (FEMA NRI)

Census Tract	Communities in Census Tract	Expected Annual Loss - Score	Expected Annual Loss - Amount	Rating

000100	Wellington, Unincorporated County	77.50	$2,000	Relatively Moderate
000200	Price City, Unincorporated County	91.80	$5,300	Relatively High
000300	Price City	72.20	$1,500	Relatively Moderate
000500	Helper, Scofield, Unincorporated County	99.50	$66,000	Very High
000600	East Carbon / Sunnyside, Unincorporated County	99.20	$43,000	Relatively High

Expected Annual Loss scores are calculated using an equation that combines values for exposure, annualized frequency, and historic loss ratios (Expected Annual Loss = Exposure × Annualized Frequency × Historic Loss Ratio).
Source: National Risk Index, 2024

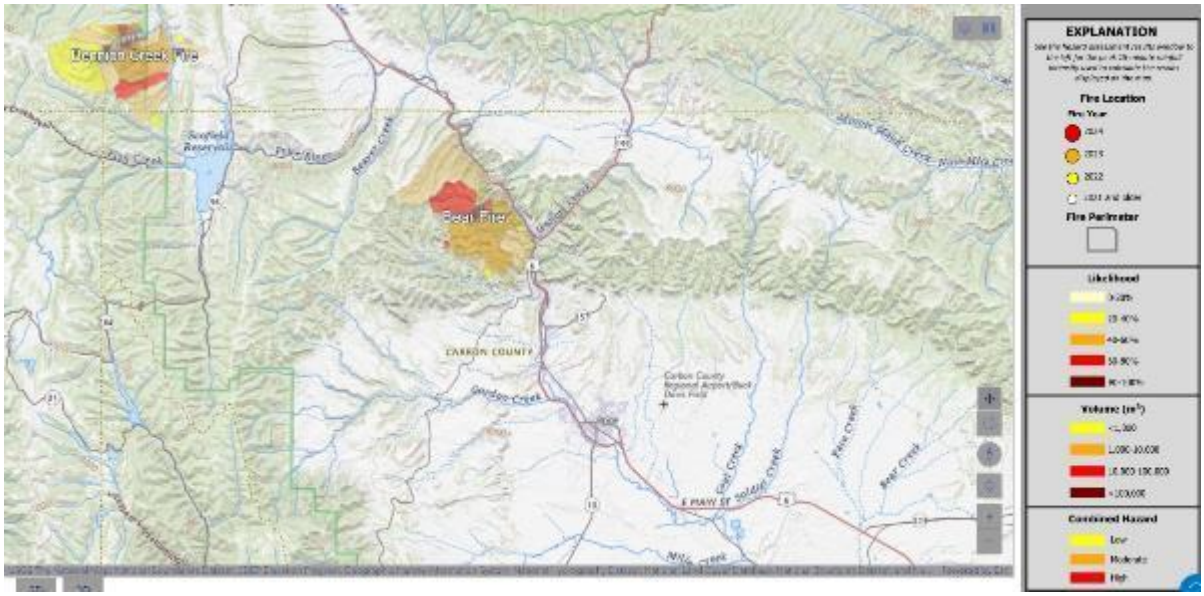
Figure 6.8.3.3 - Map of Landslide Susceptibility



2022 Map illustrating landslide susceptibility in the Carbon County area (click here for original).

Figure 6.8.3.4 - USGS Post-Fire Debris Flow Hazard Assessment

The USGS provides estimates of the probability and volume of debris flows that may be produced by a storm in a recently burned area, using a model with characteristics related to basin shape, burn severity, soil properties, and rainfall. This model showed that there are landslide risks associated with the 2021 Bear Fire. The Bennion Creek Fire also shows risk for land that is just over the County's border.



Map showing post-fire landslide risk in Carbon County. (Source: USGS)

6.8.4 Types of Landslides

Rock Falls and Rock Topples

These occur when loosened blocks or boulders from an area of bedrock move down slope. Rock falls and topples generally occur along steep canyons, cliffs, and steep road cuts. Rock fall damage usually affects roads, railroad tracks, and utilities.

Debris Slides and Debris Flows

Debris slides and flows typically occur in mountainous areas, involving the relatively rapid, viscous flow of coarse-grained soil, rock, and other surficial materials. Debris flows, distinguished by their high water content, are considered a flow rather than a slide, posing greater danger due to their high speeds. They can travel considerable distances, damaging anything in their path including buildings, roads, railroad tracks, utilities, and reservoirs. Carbon County has experienced numerous debris flows over the years, including significant events in 1983 that affected areas like Farmington and Centerville. To mitigate this hazard, several debris basins have been constructed in canyon mouths along the Front..

Slumps

Slumps are common along road embankments and river terraces, characterized by a sliding movement along a curved failure plane away from the upper part of a slope. They leave a scarp, typically not moving very far from the source area.

Earth Flows

Earth flows are similar to slumps but involve the addition of water, resulting in a slumping movement away from the top or upper part of a slope. They can vary in size from small to involving hundreds of tons of material, often causing a bulging toe that can block streams, cause flooding, and damage buildings or other structures.

Natural Processes

Natural processes that can induce slope failure include ground shaking, wind and water weathering and erosion.

Human Causes

Human activities such as lawn watering and irrigation can exacerbate landslide risk by adding excess water to already unstable ground, increasing water weight and pore pressure, thereby reducing shear strength. This can lead to a loss of cohesion in the slope material, resulting in an unstable mixture.

Rock types containing clay, mudstone, shale, or weakly cemented units are particularly susceptible to landsliding due to their susceptibility to weathering and erosion, which can further contribute to slope instability. Human-induced processes like the removal or addition of slope materials during construction can also alter slope stability.

Vegetation plays a critical role in slope stabilization by intercepting rainfall, preventing direct impact on the soil, and aiding in erosion control by retaining water and reducing surface runoff. Root systems serve as stabilizing elements by binding soil particles together or anchoring them to bedrock. Changes in slope gradient, such as placing heavy loads at the top of a slope or removing material from the slope toe, can disrupt equilibrium and contribute to slope failure due to instability.

6.8.5 Critical Facilities Protection

Table 6.8.5.1- Inventories of Properties Vulnerable to Landslides, Carbon County

Use Type	Number	Estimated Value
Commercial Units	Not Impacted	Not Impacted
Residential Units	97	$7,627,789
Population	127	N/A
Total Estimated Loss $7,627,789		

Carbon County Emergency Manager

Table 6.8.5.2 – Infrastructure Affected by Landslides, Carbon County

Item	Length (Miles)	Replacement Cost ($)
Local Roads	1.01	$2,525,000
State Highways	Not impacted	Not impacted
US Highways	9	$45,000,000
Price Waterline (Price Canyon)	13	$15,000,000
Power Lines	1.46	*
Gas Lines	Not Impacted	Not Impacted

Carbon County Emergency Manager

*Power Grid Information is considered confidential and proprietary.

6.8.6 Natural Resource Protection

This section will be completed as data becomes available. For county policies regarding natural resources, please refer to the Carbon County Resource Management Plan.

6.8.7 Secondary Hazards

Landslides can trigger various secondary hazards, including but not limited to:

6.8.7.1 Flooding

Landslides can block rivers and streams, leading to the formation of temporary dams. If these dams fail or breach, they can release large volumes of water downstream, causing flash flooding and inundating surrounding areas.

6.8.7.2 Damaging Infrastructure

Landslides can damage or destroy roads, bridges, utilities, and other critical infrastructure, disrupting transportation networks, communication systems, and access to essential services.

Impact on Water Resources: Landslides can alter the flow of surface water and groundwater, leading to changes in water quality, availability, and distribution. This can affect drinking water supplies, agricultural irrigation, and ecosystem health.

6.8.7.3 Environmental Impacts

Landslides can cause soil erosion, habitat destruction, and loss of biodiversity. They can also introduce sediment and pollutants into water bodies, affecting aquatic ecosystems and downstream water users.

6.8.7.4 Climate Change

Climate change is expected to increase landslide risk in Carbon County through several mechanisms:

- Projected increases in precipitation intensity may saturate slopes more frequently and to greater depths, reducing soil cohesion and stability.
- Extended drought periods followed by intense rainfall events create ideal conditions for debris flows, particularly in areas previously affected by wildfire.
- Increased wildfire activity due to higher temperatures and drought conditions removes stabilizing vegetation, significantly increasing landslide susceptibility in burned areas.
- Winter precipitation shifting from snow to rain in mid-elevation areas may introduce moisture into slopes during typically frozen periods.

Historical data from 2010-2023 shows a 15% increase in reported shallow landslides following intense rainfall events compared to the previous decade, particularly in the eastern portions of the county. Areas with steeper slopes and those affected by recent wildfires should be considered priority zones for enhanced monitoring and mitigation efforts.

6.9 Wildfire (WF)

Note: This plan update includes hazard events through October 2024. No federal or state disaster declarations specific to wildfire have been issued for Carbon County since the last plan update in 2018.

6.9.1 Overview & Profile

Utah faces a significant natural wildfire hazard due to its arid climate, diverse landscape, and vegetation types. The state's hot summers, low humidity, and occasional drought conditions create ideal circumstances for wildfires to ignite and spread rapidly. From desert shrublands to alpine forests, Utah's varied terrain hosts a range of flammable vegetation, including sagebrush, juniper, and pine trees, making it susceptible to intense fires.

The Wildland-Urban Interface (WUI), where residential areas intersect with wildland areas, poses a notable wildfire threat. As communities expand into fire-prone zones, the risk of wildfires threatening lives and property increases. Human activities, such as recreational use and campfires, also contribute to the wildfire hazard. To mitigate this risk, proactive measures like fuels management, prescribed burning, and public education campaigns are essential for safeguarding communities, ecosystems, and infrastructure from the destructive impacts of wildfires.

WILDLAND FIRES (WF): Wildfire can significantly impact identified areas of Carbon County. Urban contiguous fire impacts lives and property in the county.

Table 6.9.1.1 - Wildfire Hazard Profile

Potential Magnitude		Negligible	Less than 10%
		Limited	10-15%
	X	Critical	25-50%
		Catastrophic	More than 50%
Probability	X	Highly Likely: *Based on historical occurrences, fuel conditions, and ignition sources, wildfire events in Carbon County have a "Highly Likely" probability (90-100% chance) of occurring annually, particularly during the summer months when dry conditions prevail.*	
		Likely	
		Possible	
		Unlikely	
Changes since 2016	Potential wildfire hazard within Carbon County is growing as population growth is spreading into wildland areas known as the Wildland-Urban Interface (WUI) where the threat is most severe. Over the past 30 years, suburban development has encroached upon forested foothill areas and wildland areas.		
Location	In zones near the foothills and in forested areas.		
Seasonal Pattern or Conditions	Summer months. Areas affected by drought and/or heavily overgrown and dry brush and debris, lightning and human triggers.		

Duration	Wildfires typically last days but can last months, depending on climate and fuel load as well as resources (financial, manpower) to extinguish the fire. dry brush and debris.
Secondary Hazards	Landslides, debris flows, erosion, traffic accidents, air pollution.
Climate Change	Prolonged increases in temperature will increase the risk of wildfire occurrence in Utah because of the potential for extensive changes to both the length and severity of the fire season.
Analysis Used	Review of plans and data provided by US Forest Service, National Climatic Data Center, FEMA, AGRC, County Hazard Analysis Plans, and DEM.

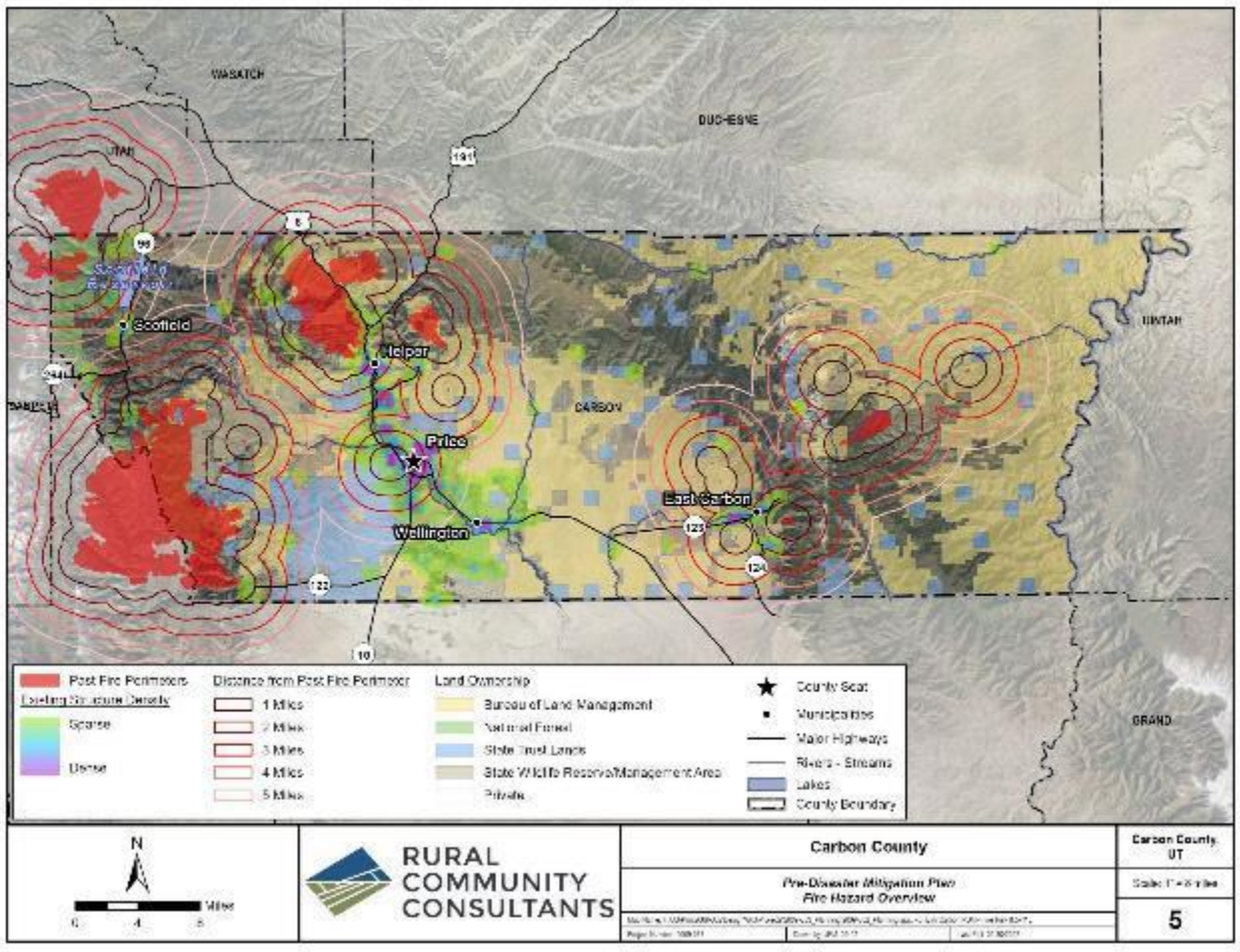
Figure 6.9.1.2 - Overall National Risk Index Score for Wildfire

Census Tract	Communities in Census Tract	FEMA National Risk Index Score	Rating
000100	Wellington, Unincorporated County	81.40	Relatively Low
000200	Price City, Unincorporated County	81.00	Relatively Low
000300	Price City	80.20	Relatively Low
000500	Helper, Scofield, Unincorporated County	90.80	Relatively Moderate
000600	East Carbon / Sunnyside, Unincorporated County	93.80	Relatively Moderate

Risk Index scores are calculated using an equation that combines scores for Expected Annual Loss due to natural hazards, Social Vulnerability, and Community Resilience (Expected Annual Loss x Social Vulnerability / Community Resilience = Risk Index).
Source: National Risk Index, 2024

6.9.2 Location and Extent

Potential wildfire hazard within Carbon County is growing as population growth is spreading into wildland areas where the threat is most severe. Over the past 30 years, urban growth has encroached upon forested foothill areas and wildland areas. The wildfire threat in Carbon County has had a significant effect on watersheds, including landslide, debris flow, and other forms of erosion. Federal, state, and local agencies have worked together to enforce ordinances and other programs such as re-vegetation zones to protect watersheds.



Map illustrating wildfire risk in the Carbon County area (click here for original).

The extent of wildfire hazard in Carbon County is measured using the Fire Threat Index, which combines factors including vegetation types, slope, aspect, and proximity to development to determine potential fire behavior and overall threat levels. As shown in Figure 6.9.3.3, the Fire Threat Index categorizes areas within the county on a scale from Low to Extreme risk.

Fire Threat Index Categories:

1. **Low**: Areas with minimal fuel loads, favorable terrain, and/or limited fire-conducive conditions. These areas may still experience fire but are unlikely to sustain high-intensity or rapidly spreading wildfires.

2. **Moderate**: Areas with moderate fuel loads or terrain features that could support wildfire spread under certain conditions. These areas may experience periodic fire activity but generally with manageable intensity.

3. **High**: Areas with substantial fuel loads, terrain features conducive to fire spread, and/or conditions that could support significant wildfire activity. These areas have the potential for intense, difficult-to-control fires during fire season.

4. **Very High**: Areas with heavy fuel loads, terrain features highly conducive to fire spread, and conditions that frequently support dangerous wildfire behavior. These areas present significant challenges for suppression efforts.

5. **Extreme**: Areas with exceptionally heavy fuel loads, steep or complex terrain, and conditions that can support catastrophic fire behavior. These areas represent the highest priority for mitigation efforts due to the potential for extreme fire behavior, rapid spread rates, and significant threats to life and property.

As depicted in Figure 6.9.3.3, the eastern and southern portions of Carbon County contain extensive areas classified as High, Very High, and Extreme fire threat, particularly in the mountainous and forested regions. The central valley areas generally present Moderate to Low fire threat, though seasonal conditions can elevate risk levels throughout the county.

6.9.3 Vulnerability Analysis

Loss estimates were made by identifying the wildland fire areas of extreme, high, and moderate within the county and then overlaying the infrastructure and the housing databases to identify vulnerable areas. The urban aspect includes homes, schools, storage areas, recreational facilities, transmission lines, and commercial buildings. Wildland refers to unincorporated areas including hills, benches, plateaus, and forests. Homes are built on the benches adjacent to wildland areas. Wildfires remove vegetation which results in slope failure, erosion, water runoff, and depletion of wildlife resources. The three conditions that affect fire behavior are topography, vegetation, and weather.

According to the US Fire Administration, there are 1,400 structures in wildland areas of Carbon County. There are 10,300 structures in the ember zone, and 2,300 structures in the ignition zones. The following table includes the population, number of commercial, and number of residential structures inside extreme, high, and moderate wildfire risk areas within the county are shown in Table below.

Table 6.9.3.1 - Wildfire Risk Area

City Name	Acres of Extreme Risk	Acres of High Risk	Acres of Moderate Risk
Helper	305	188	12
Price	56	637	286
East Carbon/Sunnyside	843	2210	1171
Wellington	0	0	0

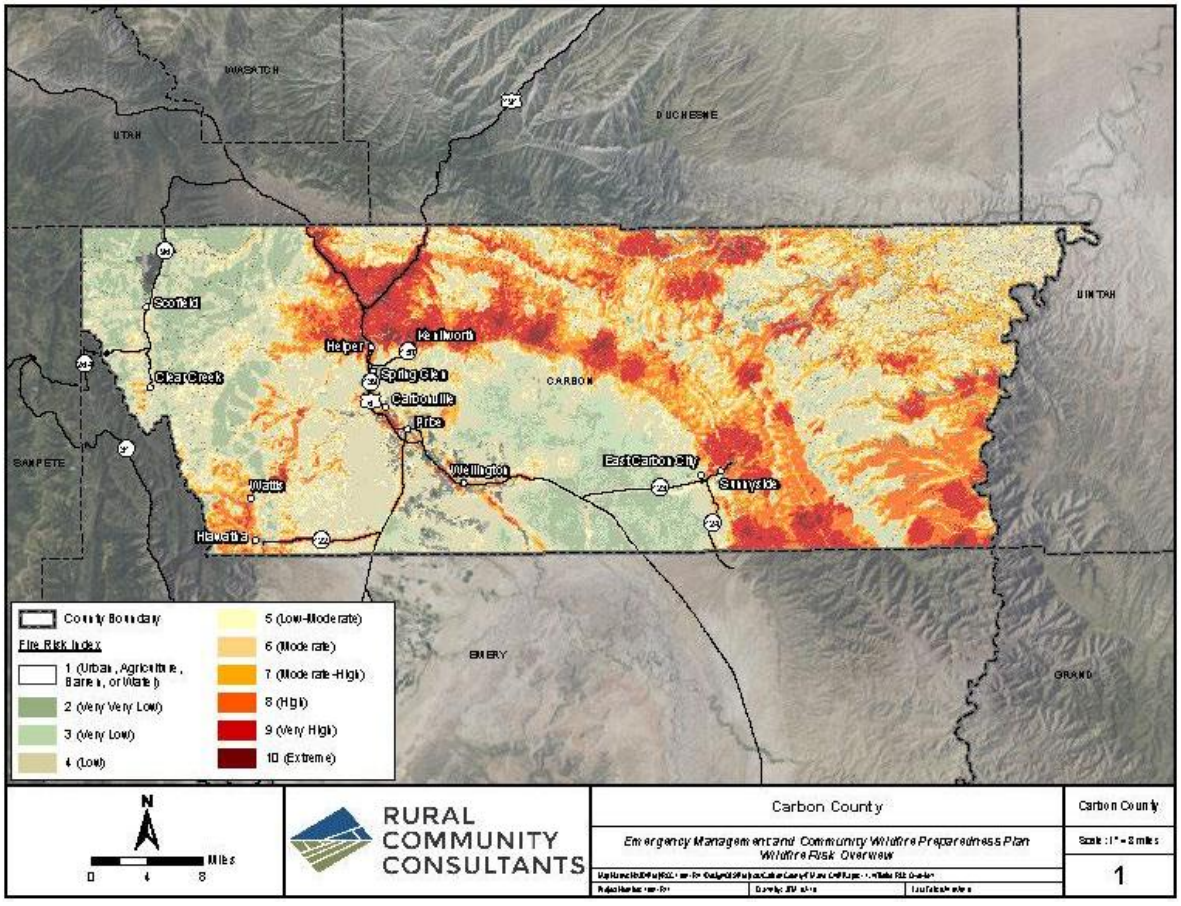
*Table contains the number of acres for each wildfire risk area that is within the municipal boundaries of the larger cities in Carbon County.

Figure 6.9.3.2 - Carbon County Structural Assessment

According to the US fire administration, there are 1,400 structures in wildland areas of Carbon County. There are 10,300 structures in the ember zone, and 2,300 structures in the ignition zones.

Source: US Fire Administration - [WUI Fire Community Awareness Explorer, 2024](#).

Figure 6.9.3.3 - Carbon County Wildfire Hazard Potential



Source: Carbon County GIS 2018 (Click here for original map).

6.9.3.4 Jurisdictional Vulnerability - Wildfire

Wildfire vulnerability varies across participating jurisdictions based on their proximity to wildland areas and vegetation patterns. The potential impacts include:

- Destruction of structures and infrastructure.
- Evacuation requirements and displacement of residents.
- Economic losses from property damage and business disruption.
- Degraded air quality affecting public health.
- Damage to watersheds and water quality.
- Increased risk of post-fire flooding and debris flows.
- Long-term ecological and economic recovery challenges.

Section 7 provides detailed jurisdiction-specific wildfire vulnerability assessments and mitigation strategies.

Figure 6.9.3.54 - Expected Annual Loss from Wildfire (FEMA NRI)

Census Tract	Communities in Census Tract	Expected Annual Loss - Score	Expected Annual Loss - Amount	Rating
000100	Wellington, Unincorporated County	81.30	$5,400	Relatively Low
000200	Price City, Unincorporated County	80.40	$4,400	Relatively Low
000300	Price City	77.80	$2,900	Relatively Low
000500	Helper, Scofield, Unincorporated County	90.80	$41,000	Relatively Moderate
000600	East Carbon / Sunnyside, Unincorporated County	93.40	$79,000	Relatively Moderate

Expected Annual Loss scores are calculated using an equation that combines values for exposure, annualized frequency, and historic loss ratios (Expected Annual Loss = Exposure × Annualized Frequency × Historic Loss Ratio).
Source: National Risk Index, 2024

6.9.4 Critical Facilities Protection

Table 6.9.4.1 - Infrastructure Vulnerable to Wildfire

Use Type	Extreme Risk	High Risk	Moderate Risk
Commercial Units/Annual Sales	16/$10.9 million	77/$102 million	60/$150 million

Residential Units/*Est. Replacement Costs	638/$50,170,406	954/$75,019,698	592/$46,553,104
Population	1,347	2,048	1,491

*Replacement cost does not include contents, which would increase the values list by approximately 50%.

Table 6.9.4.2 - Structures and Population in Wildfire Area

Use Type	Extreme Risk	High Risk	Moderate Risk
Commercial Units/Annual Sales	16/$10.9 million	77/$102 million	60/$150 million
Residential Units/*Est. Replacement Costs	638/$50,170,406	954/$75,019,698	592/$46,553,104
Population	1,347	2,048	1,491

*Replacement cost does not include contents, which would increase the values list by approximately 50%.

Table 6.9.4.3 - Infrastructure Affected by Wildfire

Note that this information will need to be continually updated as projects are completed.

Item	Length *(Miles)*	Replacement Cost (2012)	Replacement Cost (2017)
Local Roads	41.57	$ 83,149,600	$349,188,000
State Highways	46.31	$111,760,738	$389,004,000
US Highways	8.18	$ 19,740,499	$68,712,000
US Interstates	0.25	$ 900,000	$2,100,000
Power Lines	143.93	$6,948,940	*
Gas Lines	0.0	$0	Unavailable

6.9.5 Natural Resource Protection

The wildfire hazard in Utah encompasses both urban and wildland areas, where residential and commercial structures meet forests, hills, and plateaus. Homes built on benches adjacent to wildland areas are particularly vulnerable. Wildfires in these regions not only pose risks to property but also result in slope failure, erosion, water runoff, and wildlife depletion. The behavior of wildfires is influenced by topography, vegetation, and weather conditions. Fire protection in wildland-urban interface areas is challenging, as tactics for wildland fire suppression may not suffice for structure protection. Federal wildland protection agencies typically do not have the responsibility to protect structures, and legal responsibilities for protecting structures on non-federal wildlands vary among state forestry agencies. Population growth into wildland areas has increased the wildfire threat in regions like Carbon County, impacting watersheds and necessitating collaborative efforts among federal, state, and local agencies to enforce ordinances and implement protective measures. Table 6.9.5.1 lists the Wildland Fires Hazard History for Carbon County over the past 16 years.

Table 6.9.5.1 - Wildfire Hazard History (1996-2018)

Start Date	Fire Name	Size (Acres)	Total Fire Cost (est.)
7/25/1996	East Carbon	1200	N/A
5/14/2002	Coal Creek	29	$25,239.48

6/1/2002	Pasture	8	$21,286.50
6/2/2002	Mathis	12.1	$1,050.00
6/11/2002	Mathis	4	$3,649.50
7/5/2002	Range	3	$1,601.50
7/23/2002	Bear	5	$1,222.50
9/6/2002	Deep	42.5	$29,852.00
9/6/2002	Jump Creek	1	$1,524.00
6/13/2003	Consumers	5	$5,808.40
6/28/2003	Fin Canyon	100	$327,836.73
7/27/2003	Springs	3	$7,890.38
7/30/2003	Bartles	6	$20,138.86
8/1/2003	Mathis	5	$33,098.75
8/29/2003	South Ridge	213	$91,800.42
8/30/2003	Sawbelly	0.1	$1,270.00
7/22/2004	Spring	2.5	$35,820.88
7/25/2004	Columbia	0.5	$1,160.00
7/26/2004	Cordingly Canyon	0.1	$1,733.15
8/1/2004	Water Tank	1.3	$5,796.68
7/8/2005	Flat Canyon	4	$1,125.00
8/18/2005	Burnt Cabin	2.5	$1,690.00
6/30/2006	Port	12.2	$5,255.75
7/12/2006	Spring Canyon Flat	27	$1,354.25
7/14/2006	Clearwater	2	$3,529.00
7/19/2006	Rains	0.1	$2,070.40
6/13/2007	Buckskin	41	$3,510.00
7/20/2007	Jump Creek	0.1	$3,952.50
7/27/2007	Soldier Creek	1.5	$1,240.00
8/26/2007	North Springs	0.1	$1,040.00
8/26/2007	Cedar	0.1	$2,348.00
8/26/2007	Pinnacle Gas Well	0.1	$1,152.00
8/28/2007	Royal Rut	0.1	$1,114.00
8/28/2007	Crandall	1	$1,112.00
6/29/2008	Royal Rut	17	$93,331.07
7/20/2008	Harmon	0.3	$8,582.30
7/28/2008	Dugout	2.5	$2,925.00
9/4/2008	Ridge	0.1	$2,934.00
10/26/2008	Jacob	0.2	$2,520.00
8/10/2009	John Day Fire	0.25	$1,459.00
8/27/2009	Bruin Point	2.6	$4,000.00
9/3/2009	Willow Creek	0.5	$3,599.00
9/23/2009	Hunt Oil	1.75	$5,096.00
6/16/2010	Van Duesen	0.1	$1,784.00
7/7/2010	Load Out	0.1	$1,061.00
7/17/2010	Whitmore	0.1	$1,764.00

7/21/2010	Spring Canyon	0.1	$6,061.50
8/1/2010	Star Point	0.1	$1,712.00
8/4/2010	Slash	0.1	$2,108.00
8/13/2010	Jensen Cabin	10.1	11,845.72
6/17/2011	Steer Ridge	0.1	$1,000.00
7/27/2011	Double Down	0.1	$2,465.50
3/25/2012	Kenilworth Trail	.10	$384.18
3/25/2012	State Farm	10.70	$138.68
3/27/2012	Circle K	50.50	$2,220.04
3/29/2012	Trailer Park	.10	$881.30
4/09/2012	Scofield	35.00	$1,760.00
4/30/2012	Prickley Pear	.25	$8,094.00
5/11/2012	Harmon	.25	$4,365.00
6/01/2012	Helper	1.90	$1,380.50
6/02/2012	Pumper	.10	$960.00
6/17/2012	Dead Man	.10	$155.00
6/28/2012	Coal Creek	.10	$7,980.00
6/28/2012	Coop	.30	$4,321.00
6/30/2012	Kenilworth	.10	$132.00
7/07/2014	Airport Road	.10	$132.00
7/10/2012	Harmon Canyon	.10	$954.16
7/10/2012	Harmon Canyon #2	.10	$352.00
7/11/2012	Stone Cabin	.10	$1,524.00

7/13/2012	Eagle	.10	$220.00
7/14/2012	Alrad Canyon	.10	$1,016.00
7/20/2012	Power Plant	.10	$1,320.00
7/31/2012	Fasselin	.10	$2,620.00
8/01/2012	Staker	.10	$683.00
8/07/2012	Grass	.10	$360.00
8/10/2012	Half Dome	.10	$3,680.00
8/10/2012	North Springs	.10	$875.00
8/26/2012	Crandall Canyon	5.00	$4,368.00
9/24/2012	Miller Creek	.10	$400.00
11/20/2012	Dry Canyon	7.00	$10,032.50
4/27/2013	Carbonville	5.00	$950.00
5/15/2013	Wellington Road	.10	$1.046.00
5/18/2013	False Alarm Range Valley Ranch	.00	$1,180.00
6/02/2013	Westwood	4.87	$2,400.00
6/13/2013	Creek	.10	$1,020.00
6/16/2013	Meads Wash	.10	$1,188.00
6/28/2013	Long Canyon	.10	$852.00
6/28/2013	Sheep	.10	$1,000.00
6/28/2013	Straw Canyon	1.00	$1,932.00

6/28/2013	Range Creek	.50	$16,000.00
7/17/2013	Ponderosa Ridge	1.00	$36,898.00
7/30/2013	Bennion	.10	$2,461.00
8/01/2013	Mason	.10	$1,282.00
8/01/2013	Wildcat	.10	$773.00
8/01/2013	Abies	.10	$3,200.00
8/02/2013	N.O. Watis	.00	$900.00
8/09/2013	False Alarm SR 124 MM1	.00	$1,856.00
8/10/2013	Pole Canyon	.10	$1,778.00
8/10/2013	Leaning Tree	.10	$1,078.00
8/12/2013	N.O. Clear Creek	.10	$2,388.00
8/18/2013	Green Canyon	.10	$125.00
8/18/2013	Rock Creek Ranch	.10	$1,410.00
8/20/2013	Dog Spine	.10	$459.00
8/21/2013	Alrad Canyon	.10	$90.00
8/21/2013	Hobe	.10	$1,200.00
9/07/2013	Woodhill	.10	$824.00
1/06/2014	Four Mile	.10	$596.00
2/16/2014	Clay Banks	.10	$596.00

4/24/2014	Railroad Ave.	.10	$296.70
5/28/2014	Stake Farm	2.00	$1,000.00
6/07/2014	Gyro	.10	$300.00
6/11/2014	9 Mile	.10	$1,625.00
6/18/2014	Black Hawk	.10	$625.00
6/20/2014	Hiawatha Junction	.10	$610.00
6/28/2014	Hardscrabble Canyon	.10	$674.50
7/06/2014	Helper	.50	$538.00
7/12/2014	N.O. Kenilworth	.10	$200.00
7/13/2014	False Alarm Coal Creek	.00	$100.00
7/14/2014	Little Horse	.10	$4,496.00
7/21/2014	Bear Creek	8.00	$55,676.00
7/21/2014	Cottonwood Ridge	15.20	$375.00
7/22/2014	Sunnyside	450.00	$8,425.00
7/23/2014	False Alarm Cedar	.00	$200.00
8/10/2014	Geezer Backbone	.10	$240.00
8/10/2014	Pinnacle Peak	.10	$615.00
8/16/2014	Price Canyon	2.50	$852.00
8/17/2014	Tank	.10	$150.00
8/23/2014	Dry Creek	.10	$410.00
8/25/2014	Gun Club	.10	$1,895.00
8/26/2014	Trough	.10	$1,452.50

11/07/2014	False Alarm First Water Canyon	.00	$340.00
11/28/2014	Thanksgiving	.00	$400.00
4/05/2015	Wellington	3.40	$2,637.00
5/03/2015	Gun Club	.10	$44.00
5/23/2015	Koal	.10	$300.00
6/11/2015	C Canyon	.10	$150.00
6/11/2015	Dugout Ridge	.10	$150.00
6/13/2015	Train 1,2,3,5, & 6	2.05	$886.00
6/14/2015	Haley	.10	$484.00
6/21/2015	1000 South	.50	$302.50
6/26/2015	Indian Hills	.10	$394.00
6/29/2015	East Carbon	2.00	$157.50
7/13/2015	Mounds	.10	$596.00
7/15/2015	False Alarm Hiawatha	.00	$555.00
7/18/2015	Dugout Creek	.10	$1,191.00
7/22/2015	Clark Valley	.10	$549.00
8/23/2015	Scofield	.25	$1,439.50

8/30/2015	Black Hawk	.10	$433.50
9/05/2015	Hardscrabble	2.57	$1,189.00
9/24/2015	Gordon Creek	2.00	$2,080.00
5/21/2016	Valley View	2.00	$630.00
6/02/2016	Luke's Trail	.10	$760.00
6/07/2016	Warehouse Canyon	.10	$519.00
6/20/2016	Drunkards	1.00	$3,376.00
6/23/2016	Pinnacle Bench	.10	$152.00
6/23/2016	Third Point	.10	$1,245.00
6/23/2016	Carbonville	.10	$2,257.00
6/25/2016	Gardner	.30	$1,866.00
7/03/2016	Pine Springs	.10	$1,591.00
7/04/2016	Spring	.10	$430.00
7/04/2016	Pinion Ridge	.10	$477.00
7/05/2016	Old Airport	.10	$1,259.50
7/14/2016	False Alarm Fairgrounds	.00	$152.00
7/15/2016	Carbon Canal	.50	$3,881.00
7/18/2016	Big Springs	.10	$760.00
7/18/2016	False Alarm Castle Valley Ridge	.00	$760.50
7/19/2016	False Alarm W Scofield	.00	$506.00
7/22/2016	False Alarm Horse Bench	.00	$708.00
8/07/2016	False Alarm Tower	.00	$822.50

8/09/2016	Cottonwood	.10	$3,244.50
9/11/2016	Range Creek	32.00	$1,281.00
9/14/2016	Wattis	.10	$292.00
10/06/2016	Hiawatha	.10	$532.00
10/16/2016	False Alarm Cat Peak	.00	$650.00
4/08/2017	Gordon Creek	.00	$121.24
5/22/2017	Cutoff	.01	$250.69
5/27/2017	The Box	.01	$151.03
6/05/2017	Sheep Canyon	35.00	$371,308.10
6/08/2017	Cat Canyon	.01	$771.00
6/08/2017	HWY. 123 MM 3	.01	$1,349.81
6/08/2017	Rio	.01	$257.00
7/13/2017	False Alarm	.00	$284.82
7/23/2017	Buckskin	.97	$16,316.00
7/29/2017	North Hollow	7.5	$2371.72
7/30/2017	Meads Draw	.01	$438.00
8/04/2017	Deadman Creek	.01	$160.84
8/07/2017	HWY 6 MM 245	.01	$100.48
8/14/2017	False Alarm	.00	$123.67
8/15/2017	Soldier	.01	$384.33
8/21/2017	Hardscrabble Canyon	3.0	$4,420.74
9/03/2017	Stake Farm	0.1	$37.50
9/03/2017	Scofield	0.1	$461.19
9/08/2017	Marsing	0.1	$396.66
9/08/2017	Carbonville	0.1	$1,229.10

Table 6.9.5.2 - Wildfire Hazard History (2018-2023)

Fire Name	Start Date	Size (Acres)	Total Fire Cost ($)
False Alarm Scofield	1/27/2018	0	$612.24
Stake Farm	3/5/2018	0.99	$66.13
Carbonville	4/16/2018	0.1	$5.41
Clear Creek	5/7/2018	0.51	$1,929.68
Alkali	5/22/2018	2.5	$4,702.70
South Price	6/10/2018	0.1	$23.78
Willow Creek	6/10/2018	0.1	$34.96
Miller Creek	6/11/2018	0.1	$29.27
False Alarm EDCD	6/20/2018	0.01	$40.65
False Alarm Cow Canyon	6/25/2018	0	$1,195.12
False Alarm Scofield	7/4/2018	0	$889.70

Dairy Canyon	7/6/2018	0.1	$65.85
False Alarm Third Point	7/9/2018	0	$237.17
False Alarm Telephone Bench	7/10/2018	0	$1,218.44
False Alarm Mud Spring	7/8/2018	0	$328.67
Mud Water Canyon	7/12/2018	0.4	$5,290.71
Horse Canyon	7/21/2018	19.13	$63,470.20
Number Two Canyon	7/21/2018	0.1	$5,071.94
Range Creek	7/23/2018	7	$376,191.91
Stone Cabin	7/27/2018	0.1	$13,855.19
Indian Springs Mesa	7/27/2018	1	$23,931.55
Antone	7/28/2018	124.42	$113,483.25
West Ridge	7/28/2018	0.1	$8,692.50
False Alarm Whitmore Park	7/31/2018	0	$1,525.20
East Range Creek	7/28/2018	0.1	$2,554.68
Spring Canyon	8/2/2018	68.5	$157,607.11
Clark Valley	8/4/2018	0.1	$467.93
False Alarm Razor	8/13/2018	0	$170.08
Meads Wash	9/5/2018	0.1	$565.41
False Alarm Bear Canyon Mine	9/8/2018	0	$181.46
Price Canal	9/11/2018	0.1	$115.48
Gaging Station	9/13/2018	0.89	$19.74
Ford Creek	11/15/2018	0.1	$837.87
False Alarm Dugout Mine	7/5/2019	0.01	$171.51
Cat Canyon	7/11/2019	0.1	$2,261.90
False Alarm Cardinal Wash	7/12/2019	0.01	$491.37
Winter Quarters	7/13/2019	0.1	$777.61
Price City Assist 1	7/20/2019	0.2	$225.03
False Alarm Ford Ridge	7/25/2019	0.01	$997.71
False Alarm Emma Park	7/26/2019	0.01	$266.90
Star Point	8/4/2019	0.49	$82,254.84
False Alarm Spring Canyon	8/5/2019	0.01	$2,175.00
North Springs	8/9/2019	0.1	$1,412.80
False Alarm Radio Towers	8/8/2019	0.01	$6,610.28
False Alarm Second Water	8/18/2019	0.01	$342.17
Price Canyon	8/20/2019	0.6	$7,329.90
False Alarm Bear Creek	8/29/2019	0.01	$245.14
Grassy Trail	9/5/2019	0.1	$2,947.93
Consumers	9/6/2019	0.1	$337.93
Dugout Canyon	9/6/2019	0.1	$792.45
Soldier Creek	9/6/2019	0.1	$642.40
Horse Canyon	9/7/2019	0.1	$1,510.62

Lower Nine Mile	9/6/2019	0.1	$2,985.81
Water Canyon	9/10/2019	0.1	$4,877.58
Oak Spring	9/16/2019	0.1	$5,388.86
Bull Point	9/16/2019	0.1	$5,311.52
Goose Neck Ridge	10/12/2019	0.1	$207.89
Gordon Creek	11/10/2019	1.6	$124.33
False Alarm Serviceberry	2/26/2020	0.01	$140.59
Carbon Canal	4/4/2020	0.1	$487.61
2020 MLF Severity	5/22/2020	0.01	$1,010.57
False Alarm Consumers Wash	6/22/2020	0.01	$1,165.72
2020 MLF ABCD MISC	6/28/2020	0.01	$773.72
Pine Spring	7/1/2020	7	$268,577.99
South Fork	7/3/2020	1.72	$8,491.82
Carbonville	7/4/2020	1.4	$2,041.49
2020 Green River District Severity	7/1/2020	0.01	$1,054.12
North Springs	7/29/2020	0.1	$16,027.27
Water Canyon	8/2/2020	106.55	$373,040.50
Icelander	8/11/2020	3.3	$4,650.42
Raven	8/22/2020	2.05	$2,999.90
Swisher	8/25/2020	3.03	$6,444.36
Airport	8/28/2020	0.1	$407.10
False Alarm Castle Gate	9/28/2020	0.01	$77.44
False Alarm Viking Park	10/6/2020	0.01	$1,447.74
Scofield	11/12/2020	0.1	$398.31
2021 MLF Support	2/16/2021	0.01	$1,444.75
Soldier Creek Rd	3/7/2021	0.1	$1,126.17
Westwood	4/8/2021	48.99	$19,203.16
Farnham	6/7/2021	1.29	$3,620.92
Bear	6/8/2021	12164.58	$8,157,552.47
Castle Gate	6/13/2021	0.1	$591.77
East Carbon	6/14/2021	2	$2,244.43
Dry Canyon	6/19/2021	1.04	$47,141.89
Mead	6/20/2021	3	$24,591.50
Martin	6/20/2021	0.1	$57.49
Telephone Bench	7/2/2021	13.15	$23,970.95
1350 East	7/6/2021	0.1	$109.51
False Alarm Star Point	7/8/2021	0.01	$171.21
Gordon Creek	7/14/2021	0.1	$1,188.10
Wildcat	7/26/2021	0.1	$1,642.84
West Ridge	7/31/2021	0.25	$2,315.42
False Alarm Warehouse Canyon	7/31/2021	0.01	$12,221.37

Hillcrest	8/6/2021	0.1	$598.56
Cold Springs	8/9/2021	17.29	$250,916.63
Twin Springs	8/16/2021	1	$43,210.62
Pace Canyon	8/26/2021	0.1	$14,665.43
HWY6 MM253.5	9/5/2021	0.1	$664.95
False Alarm Consumers	9/9/2021	0.01	$123.36
Wattis	9/10/2021	0.1	$5,419.19
Fan	9/11/2021	0.1	$3,005.64
Avalanche	9/11/2021	0.1	$521.73
Kenilworth	9/11/2021	0.1	$827.07
False Alarm Porphyry	9/13/2021	0.01	$1,021.04
Haley Canyon	9/16/2021	0.1	$2,181.84
False Alarm Dugout	10/6/2021	0.01	$213.52
Kenilworth Coal Seam	10/19/2021	0.1	$242.01
False AlarmTrough Piles	10/31/2021	1	$243.73
Gate	5/2/2022	0.1	$1,556.16
False Alarm The Cove	6/14/2022	0.01	$623.92
False Alarm Nine Mile Canyon	6/18/2022	0.01	$2,454.79
C Canyon	6/24/2022	0.1	$4,206.46
Trail Creek	6/25/2022	0.1	$1,239.49
B Canyon	6/25/2022	2.1	$2,944.85
Golf Course Road	6/25/2022	0.1	$482.83
Garley	6/29/2022	0.1	$408.24
Dry Canyon	6/29/2022	0.1	$15,335.12
Pace Creek	6/30/2022	0.1	$11,398.82
Dump Road	7/2/2022	0.1	$1,222.42
Clear Creek	7/6/2022	0.1	$846.28
C Plateau	7/17/2022	0.19	$4,243.96
Live Wire	7/27/2022	0.1	$1,157.55
Airport Road	7/27/2022	0.1	$637.79
Lola	7/27/2022	0.1	$9,339.45
FA000441 Scofield	7/27/2022	0.01	$539.91
Hayden Lane	8/1/2022	0.1	$163.63
Ranch	8/1/2022	0.1	$2,105.06
False Alarm Horse Canyon	8/2/2022	0.01	$124.70
Cliff	8/6/2022	0.1	$1,093.58
False Alarm Whitmore	8/11/2022	0.01	$194.11
Tramway	8/17/2022	0.78	$57,165.05
Beaver Creek	8/20/2022	0.1	$1,384.97
Sunnyside	8/20/2022	0.1	$1,240.19
Coke oven	8/20/2022	0.1	$114.83

Sulphur Canyon	8/21/2022	0.1	$11,414.07
Haley Canyon	8/27/2022	0.1	$1,491.51
Canyon Road	9/1/2022	0.1	$65.74
False Alarm Woodhill	10/8/2022	0.01	$134.25
False Alarm Aberdeen	5/24/2023	0.01	$62.65
HWY6 MM260	5/29/2023	0.1	$258.28
HWY6 MM255	6/27/2023	0.92	$803.71
HWY6 MM256	6/27/2023	0.89	$873.95
Clarks	6/27/2023	0.01	$305.56
Wildcat Canyon	7/3/2023	0.1	$12,628.42
Bear Canyon	7/21/2023	1	$102,411.03
False Alarm Alkali Creek	7/26/2023	0.01	$182.55
Pinnacle Bench	7/26/2023	0.1	$10,049.10
Cardinal Wash	7/29/2023	0.1	$166.03
Harmon	7/31/2023	0.01	$809.08
Range	8/16/2023	128.75	$310,667.42
Kenilworth	9/22/2023	0.1	$1,232.36
Peerless Mine	9/25/2023	0.01	$291.87

6.9.6 Secondary Hazards

Wildfires can trigger various secondary hazards, including but not limited to:

6.9.6.1 Smoke Inhalation

Wildfires can degrade air quality over large areas, leading to increased levels of pollutants such as carbon monoxide, nitrogen oxides, and volatile organic compounds. Poor air quality can impact public health, especially for vulnerable populations, and may necessitate evacuation or sheltering in place.

6.9.6.2 Air Quality Degradation

Wildfires can degrade air quality over large areas, leading to increased levels of pollutants such as carbon monoxide, nitrogen oxides, and volatile organic compounds. Poor air quality can impact public health, especially for vulnerable populations, and may necessitate evacuation or sheltering in place.

6.9.6.3 Erosion and Flooding

Wildfires can remove vegetation and alter soil properties, increasing the risk of erosion and flash flooding during rainfall events. The loss of vegetation cover reduces soil stability and infiltration capacity, leading to accelerated runoff and sedimentation in waterways.

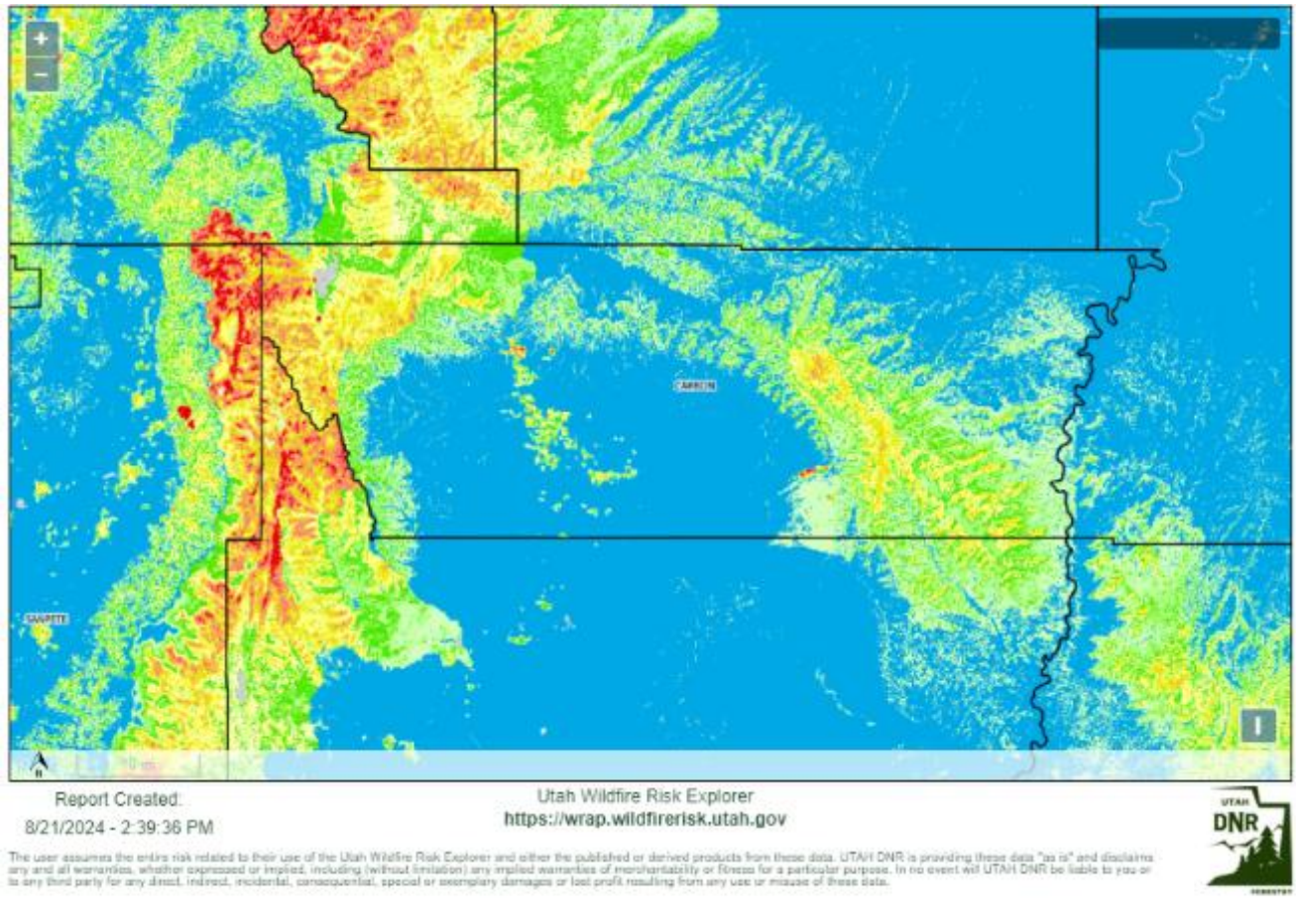
6.9.6.4 Landslides and Debris Flows

Wildfires can destabilize slopes and increase the likelihood of landslides and debris flows, especially in areas with steep terrain and shallow soils. Burned vegetation and soil become more susceptible to erosion, which can result in hazardous mass movements during intense rainfall.

6.9.6.5 Water Quality Impacts

Wildfires can contaminate surface water and groundwater with ash, sediment, and chemical residues from burned materials. This can affect drinking water sources, aquatic ecosystems, and downstream water users, posing risks to human health and the environment.

Figure 6.9.6.6 - Risk to Drinking Watersheds and Population



Source: Utah Wildfire Risk Assessment Portal, 2024

6.9.7 Climate Change

Climate change is significantly altering wildfire risk in Carbon County through several mechanisms:

- Rising temperatures are extending the fire season by 2-3 weeks compared to historical averages, with earlier spring snowmelt and later autumn precipitation.
- Increased drought frequency and severity are creating drier fuel conditions, with dead fuel moisture content decreasing by approximately 15% during summer months over the past decade.
- Changes in precipitation patterns with longer dry periods followed by intense rainfall events promote rapid vegetation growth followed by drying, creating abundant fine fuels.
- Higher temperatures and drier conditions may increase lightning strike frequency while reducing fuel moisture recovery during nighttime hours.
- Stressed vegetation from changing climate conditions is more susceptible to insect infestation and disease, increasing dead fuels across the landscape.

The combination of these factors is projected to increase both wildfire frequency and intensity throughout the county, with particular concern for the wildland-urban interface areas surrounding Price, Helper, and other communities. Mitigation strategies should focus on defensible space, fuel reduction projects, and enhanced warning systems to address this evolving threat.

6.10 Problem Soils (PS)

Note: This plan update includes hazard events through October 2024. No federal or state disaster declarations specific to problem soils have been issued for Carbon County since the last plan update in 2018.

6.10.1 Overview & Profile

Soil-related risks and hazards often conceal potential dangers that may not be immediately evident. Establishing facilities in areas with soil-related hazards can significantly increase the risk of loss of life, health, and property. These hazards may include soil instability, susceptibility to erosion, contamination, or other soil-related risks. Identifying and understanding these soil-related issues are crucial for mitigating potential threats and ensuring the safety and sustainability of infrastructure projects.

PROBLEM SOILS (PS): Problem soils are a risk to property and life due to its instability.

Table 6.10.1.1 - Problem Soils Hazard Profile

Potential Magnitude		Negligible	Less than 10%
	X	Limited	10-15%
		Critical	25-50%
		Catastrophic	More than 50%
Probability	X	Highly Likely: *Problem soils present a "Highly Likely" probability of causing issues within Carbon County annually, representing a 90-100% chance of at least one incident occurring each year. This assessment is based on the widespread presence of expansive soils and historical damage to infrastructure.*	

		Likely
		Possible
		Unlikely
Changes since 2016	New developments in the area increase expansion onto less desirable soils.	
Location	See map: Carbon County Problem Soils	
Seasonal Pattern or Conditions	Dependent on the geology of the county.	
Duration	Constant problem.	
Analysis Used	Reviewed information and maps provided by County soil classification books, USGS, Utah Division of Emergency Management (DEM), AGRC, and local input.	

6.10.2 Location & Extent

When assessing the location and extent of problem soils, it is essential to consider various factors that could impact construction, utility trenching, agriculture, and overall land stability. Carbon County contains notable quantities of compacted Mancos shale and soils with high alkali content, which can pose challenges to infrastructure development (Mulvey, 1992). Expansive soils, prone to swelling or shrinking with changes in moisture content, present particular hazards to structures built upon them. Despite efforts to prevent construction on such soils, their common occurrence throughout the county makes avoidance nearly impossible.

Engineering practices such as load distribution, water management, and site preparation are addressed in Carbon County Building Codes to mitigate the risks associated with expansive soils. Additionally, limestone karst structures, prone to erosion and potential collapse, pose significant risks to structures built directly over them. Groundwater contamination is also a concern, particularly in areas with peat bogs, which are susceptible to subsidence and methane production (Mulvey, 1992). While many of these problem soil areas are located in remote regions of Carbon County, their presence underscores the importance of thorough soil investigations and proactive mitigation measures in infrastructure planning and development.

6.10.2.1 Hazard History - Problem Soils

Carbon County has experienced ongoing issues with problem soils, though no formal disaster declarations have been made specific to this hazard. Documented incidents include:

- Structural foundation issues in older buildings throughout Price and Helper.
- Road surface deterioration along County Road 290 in 2019 due to expansive soils.
- Multiple small-scale settlement issues reported by the County Engineering Department between 2018-2023.

6.10.3 Vulnerability Analysis

Widespread problem soils were found not to affect any population or infrastructure in Carbon County. Therefore, no significant vulnerability exists.

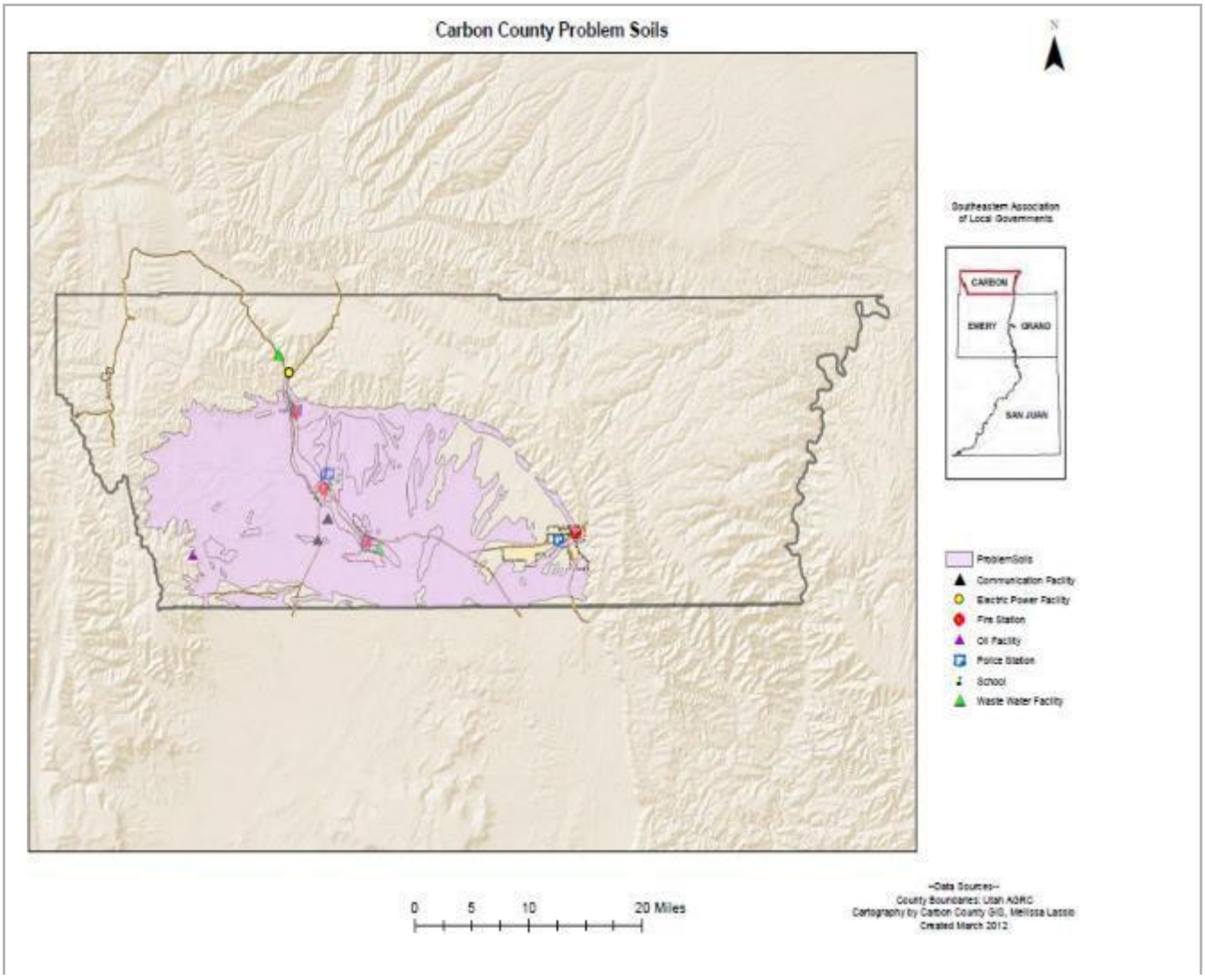
6.10.3.1 - Jurisdictional Vulnerability - Problem Soils

Problem soils present varying degrees of risk across participating jurisdictions. The potential impacts include:

- Structural damage to buildings and foundations.
- Infrastructure deterioration including roads and utilities.
- Increased maintenance and repair costs.
- Limitations on future development potential.
- Water management challenges including drainage issues.
- Economic impacts from property devaluation.
- Public safety concerns from sudden subsidence or collapse.

More detailed jurisdiction-specific impacts are addressed in Section 7.

Figure 6.10.3.1 - Carbon County Problem Soils



6.10.4 Critical Facilities Protection

Note that This section will be completed as data becomes available. For county policies regarding natural resources, please refer to the Carbon County Resource Management Plan.

6.10.5 Natural Resource Protection

Note that This section will be completed as data becomes available. For county policies regarding natural resources, please refer to the Carbon County Resource Management Plan.

6.10.6 Secondary Hazards

Problem soils can encompass a range of issues such as expansive soils, collapsible soils, liquefaction-prone soils, and soils prone to erosion or landslides. These soil conditions can pose various secondary hazards, including:

6.10.6.1 Structural Damage

Expansive soils, which swell and shrink with changes in moisture content, can cause structural damage to buildings and infrastructure over time. This can result in foundation settlement, cracking, and other forms of structural distress.

6.10.6.2 Slope Instability

Soils prone to erosion or landslides can lead to slope instability, increasing the risk of mass movements and property damage in areas with steep terrain or poor soil conditions.

6.10.6.3 Infrastructure Failure

Problem soils can compromise the integrity of roads, bridges, utilities, and other critical infrastructure, impacting transportation networks, water supply systems, and communication services.

6.10.6.4 Water Management Challenges

Problem soils may affect drainage patterns, surface water runoff, and groundwater recharge rates, leading to localized flooding, soil erosion, and water quality issues.

6.10.6.5 Environmental Degradation

Soil-related hazards can contribute to environmental degradation, including habitat loss, sedimentation in waterways, and contamination of soil and water resources.

6.10.6.6 Climate Change

Climate change is expected to exacerbate problem soil impacts in Carbon County through increased variability in precipitation patterns. More intense wet periods followed by extended dry periods can cause expansive soils to undergo more extreme cycles of swelling and shrinking. This cycle may accelerate damage to foundations, roads, and underground utilities. Additionally, areas with gypsum or salt-bearing soils may experience increased dissolution during heavier rainfall events, potentially leading to more frequent subsidence issues. Local planning efforts should anticipate these amplified effects, particularly for critical infrastructure located in areas with documented problem soils.

6.11 Dam Failure (DF)

Note: This plan update includes hazard events through October 2024. No federal or state disaster declarations specific to dam failures have been issued for Carbon County since the last plan update in 2018.

6.11.1 Overview & Profile

There are numerous dams throughout the County, the Utah Division of Water Rights identifies 11 dams that are federally inspected by the Bureau of Reclamation or inspected for general, flood control and industrial purposes. Table 6.11.1.2 lists 11 dams with the hazard rating (High, Moderate, and Low). There are two dams that are given a 'High' hazard rating. High hazard is defined as a possibility of life being lost due to dam failure. Three dams are listed as having a moderate hazard rating, meaning there is a significant likelihood of downstream property loss if the dam were to fail. The remaining six dams have a low hazard rating; meaning if they were to fail there would be insignificant property loss.

DAM FAILURE (DF): National statistics show that overtopping due to inadequate spillway design, debris blockage of spillways, or settlement of the dam crest account for 34% of all dam failures. Foundation defects, including settlement and slope instability, account for 30% of all failures. Piping and seepage cause 20% of national dam failures. This includes internal erosion caused by seepage, seepage and erosion along hydraulic structures, leakage through animal burrows, and cracks in the dam. The remaining 16% of failures are caused by other means.

Table 6.11.1.1 - Dam Failure Hazard Profile

Potential Magnitude	X	Negligible	Less than 10%
		Limited	10-15%
		Critical	25-50%
		Catastrophic	More than 50%
Probability		Highly Likely	
		Likely	
	X	Possible: *Based on dam safety records, inspection protocols, and the structural condition of the six low-hazard dams in Carbon County, dam failure events have an "Possible to Unlikely" probability (less than 10% chance) of occurring in any given year.*	
		Unlikely	
Location	Scofield Dam is in the Northwestern area of the County while Grassy Trail Dam is in the Northeastern area of the County.		
Seasonal Pattern or Conditions	Rainy Day Failure happens mainly during heavy precipitation events and may have some warning time. Sunny Day Failure happens with no warning at all and can happen at any time.		
Duration	Hours, Days. Depends on spillway type and area, maximum cubic feet per second (cfs) discharge, overflow or breach type, dam type. Refer to Dam Inventory for more information.		
Secondary Hazards	Flooding, raw sewage/health risk, electrical fires, gas spills.		
Climate Change	Changes in weather patterns and incidence of extreme precipitation will increase the risk of dam failure in Utah.		
Analysis Used	Review of Bureau of Reclamation (BOR) inundation maps and plans, Flood Insurance Studies (FIS), and Water Rights information. Carbon County GIS Department preparation/dissemination of inundation maps and Division of Emergency Management preparation of Hazard Risk Analysis for Critical Facilities in Carbon County.		

Table 6.11.1.2 - Dam Hazard Rating for Carbon County

	Dam Name	Hazard Rating
1	Scofield Reservoir	High
2	Grassy Trail Reservoir	High
3	Sunnyside Co-Generation Reservoir	Moderate
4	Price StormWater DB (Cove Basin Park)	Moderate
5	Wellington City Debris Basin	Moderate
6	Anderson East	Low
7	US Steel Corp Tailing Upper	Low

8	US Steel Corp Storage (Clear Water)	Low
9	US Steel Corp Tailings (Lower)	Low
10	Mud Springs Reservoir	Low
11	Miller Creek	Low
Source: Utah Division of Water Rights		

All dams, regardless of rating, should be monitored. It should be noted; dam safety hazard classifications are in the event of dam failure and are based upon the consequences of dam failure. Therefore, the classification of a high hazard dam does not mean that the dam has a high probability of failure.

In the following narratives, downstream towns have been identified; these could be potentially affected if any of the identified reservoirs were to breach.

Flood threats have occurred along the surrounding foothills, Meads Wash, Cardinal Wash, the Price-Wellington Canal and the Price River. Canals are impacted by storm water that flows into them throughout the county. The reservoir storage at spillway crest is 12-acre feet. The first downstream town is Price located just 0.1 miles away. The dam hazard rating is moderate, with outlet diameter of 15 inches and length at 137 feet. (Utah Division of Water Rights)

6.11.2 Vulnerability Assessment

Participating jurisdictions face different levels of dam failure risk based on their proximity to Scofield Dam and Grassy Trail Dam. The potential impacts include:

- Catastrophic flooding of developed areas.
- Damage to or destruction of buildings and critical infrastructure.
- Potential loss of life, especially in areas with limited warning time.
- Disruption of transportation networks and evacuation routes.
- Economic losses from property damage and business interruption.
- Environmental damage from flood debris and contaminants.
- Long-term recovery costs for affected communities.

Section 7 details jurisdiction-specific vulnerability assessments and potential impacts.

6.11.2.1 Hazard History

No dam failures have occurred within Carbon County during the reporting period (2018-2024). The six low-hazard dams identified in the county have maintained proper function during this period with no reported incidents. Regular inspections conducted by the State Engineer's Office have identified no critical concerns requiring emergency action.

6.11.2.2 Dam Failures on Rainy Days

Rainy day failures occur when floodwaters overstress the dam, spillway, and outlet capacities. The flood water flows over the top of the dam and eventually erodes the structure from the top down. At this point the floodwater meets with the floodwaters from the rainstorm and a very destructive, powerful flood is created.

6.11.2.3 Dam Failures on Sunny Days

Sunny day dam failures are the most dangerous because they happen without warning. Downstream residents or inhabitants have little or no time to prepare or even evacuate the area; the results may be catastrophic. Sunny day failures occur from seepage or erosion inside the dam. This erosion removes fine materials creating a large void that can cause the dam to collapse, or overtop and wash away.

Earthquake ground shaking or liquefaction can also create structure problems. Ground shaking will cause the dam to start piping, slumping, settling, or experience a slope failure similar to a landslide. The dam then fails internally or overtops and washes away.

Other sunny day failures occur when vegetation or rodents get into a dam and leave holes or tunnels that can lead to failure. Not all dam failures are catastrophic; sometimes a dam can fail and be drained and repaired without a damaging flow of floodwaters.

"Hazard ratings are determined by downstream uses, size, height, volume and incremental risk/damage assessments. The hazard ratings are: Low- insignificant property loss; Moderate- significant property loss; and High- possible loss of life" . Over two hundred Utah dams are rated as high-hazard.

6.11.2.4 Dam Failure Location

Carbon County has numerous water impoundment structures of varying sizes and hazard classifications. Figure 6.11.2.5 displays the locations of all documented dams within Carbon County, including both state and federally regulated structures.

While the map shows all known dams in the county, it's important to clarify that only six dams are classified as having a "Low Hazard" potential according to the Utah Division of Water Rights Dam Safety Program. These six low-hazard dams are:

1. Anderson (E.)
2. Miller Creek
3. Mud Springs Reservoir
4. Pacificorp - Hunter Raw Water
5. Sunnyside Cogeneration Dragerton Reservoir
6. US Steel Corp Storage and Tailings

The additional dams shown on the map but not specifically addressed in the narrative fall into the following categories:

1. Very small impoundment structures that do not meet regulatory thresholds for hazard classification;
2. Private agricultural ponds with minimal downstream impact potential;
3. Historical structures that are no longer actively maintained as water impoundments; and/or
4. Structures that are regulated under different authorities (such as mine tailings impoundments).

These additional structures are included on the comprehensive map for completeness but do not represent significant hazards to life or property based on their size, condition, or location. The six identified low-hazard dams remain the focus of this hazard profile due to their greater potential impact on surrounding communities.

Figure 6.11.2.5 - Carbon County Dam Locations and Hazard Ratings

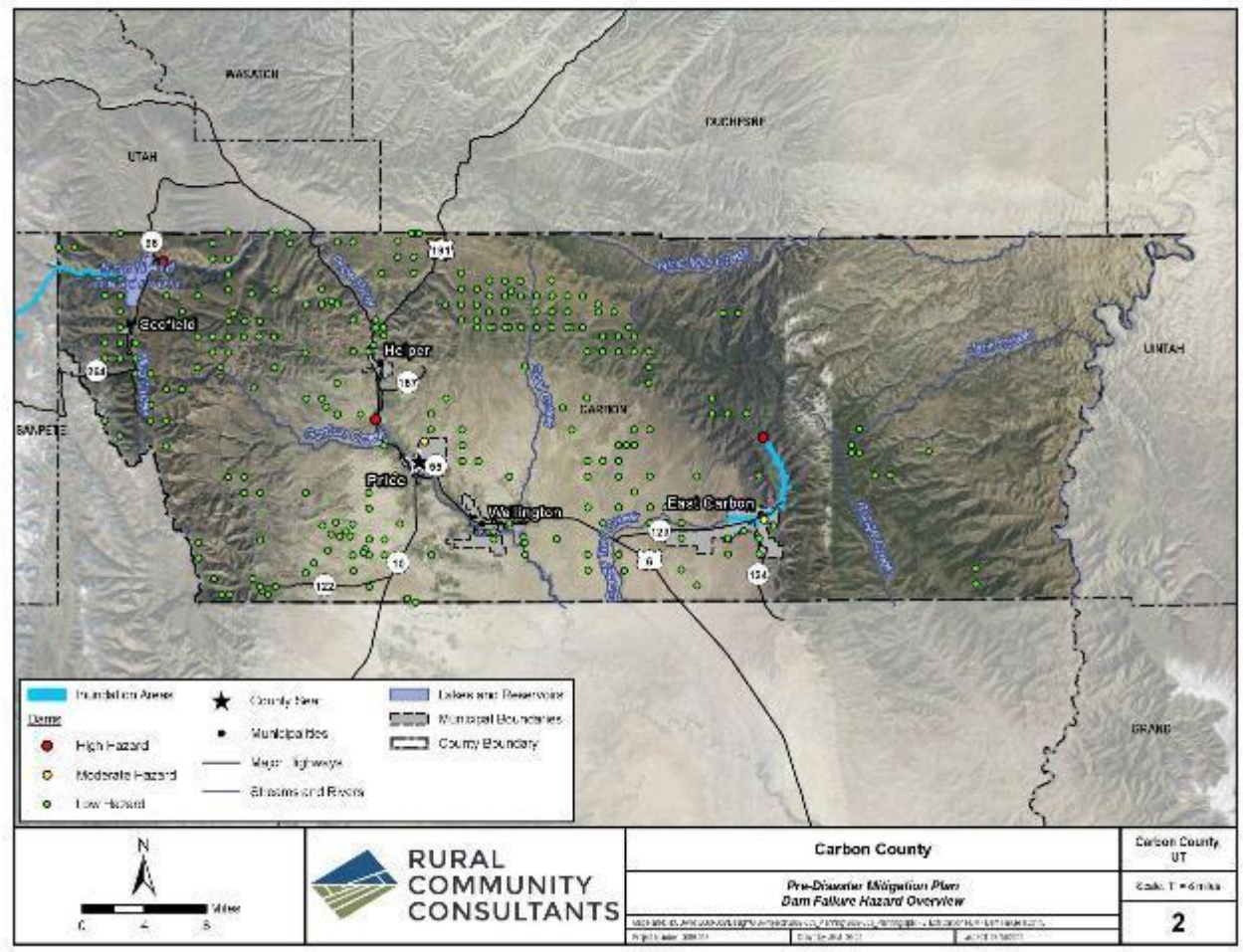
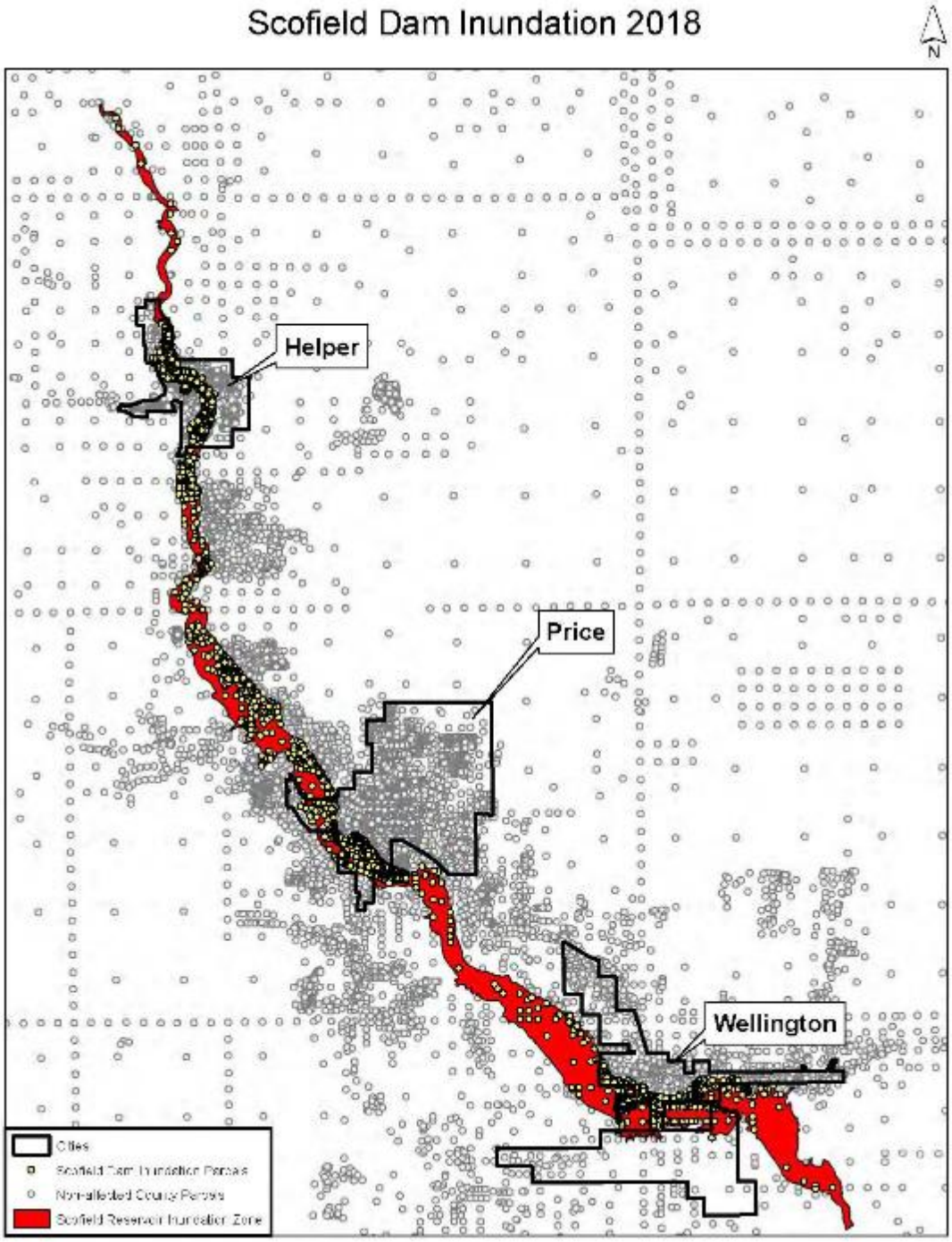


Figure 6.11.2.3: Dam Locations in Carbon County. Note: This map displays all known water impoundment structures in the county. The six dams classified as "Low-hazard" by the Utah Division of Water Rights and discussed in the narrative are highlighted in green dots. Additional structures shown include small private impoundments, agricultural ponds, and historical structures that do not meet regulatory thresholds for hazard classification. (click here for original).

Figure 6.11.2.6 - Scofield Dam Inundation 2018 Map

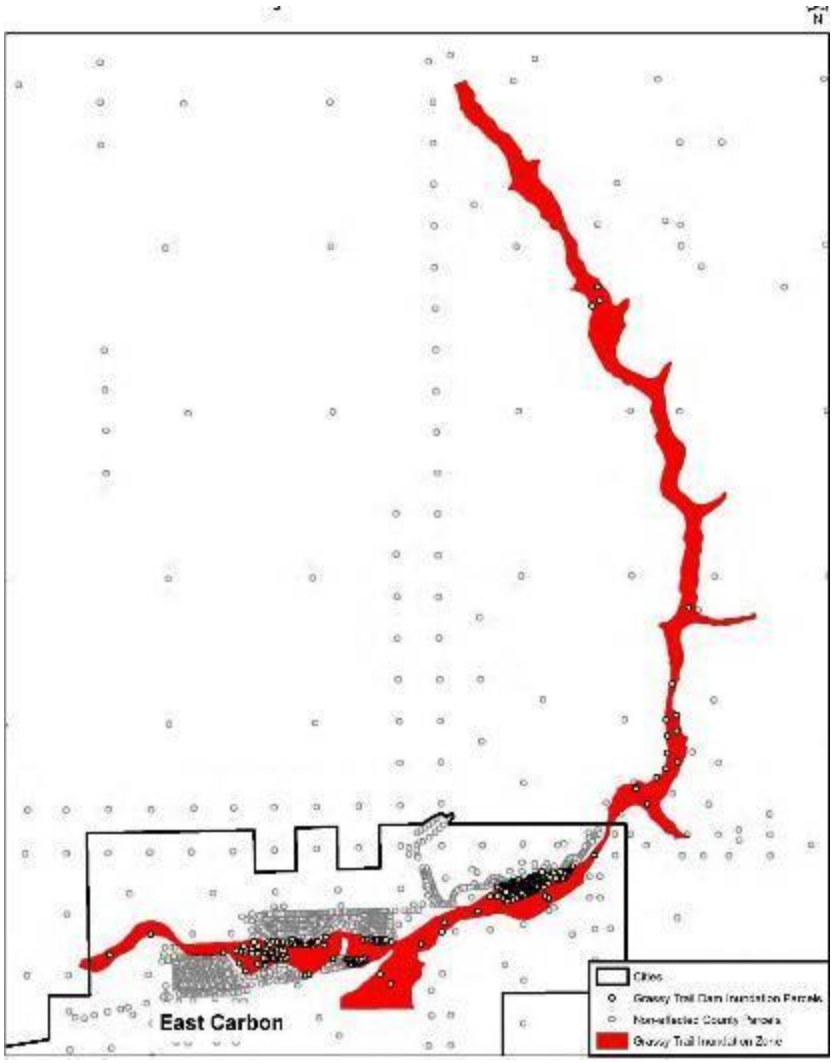
There are 2,401 parcels that intersect the inundation zone.



Source: Carbon County GIS Office

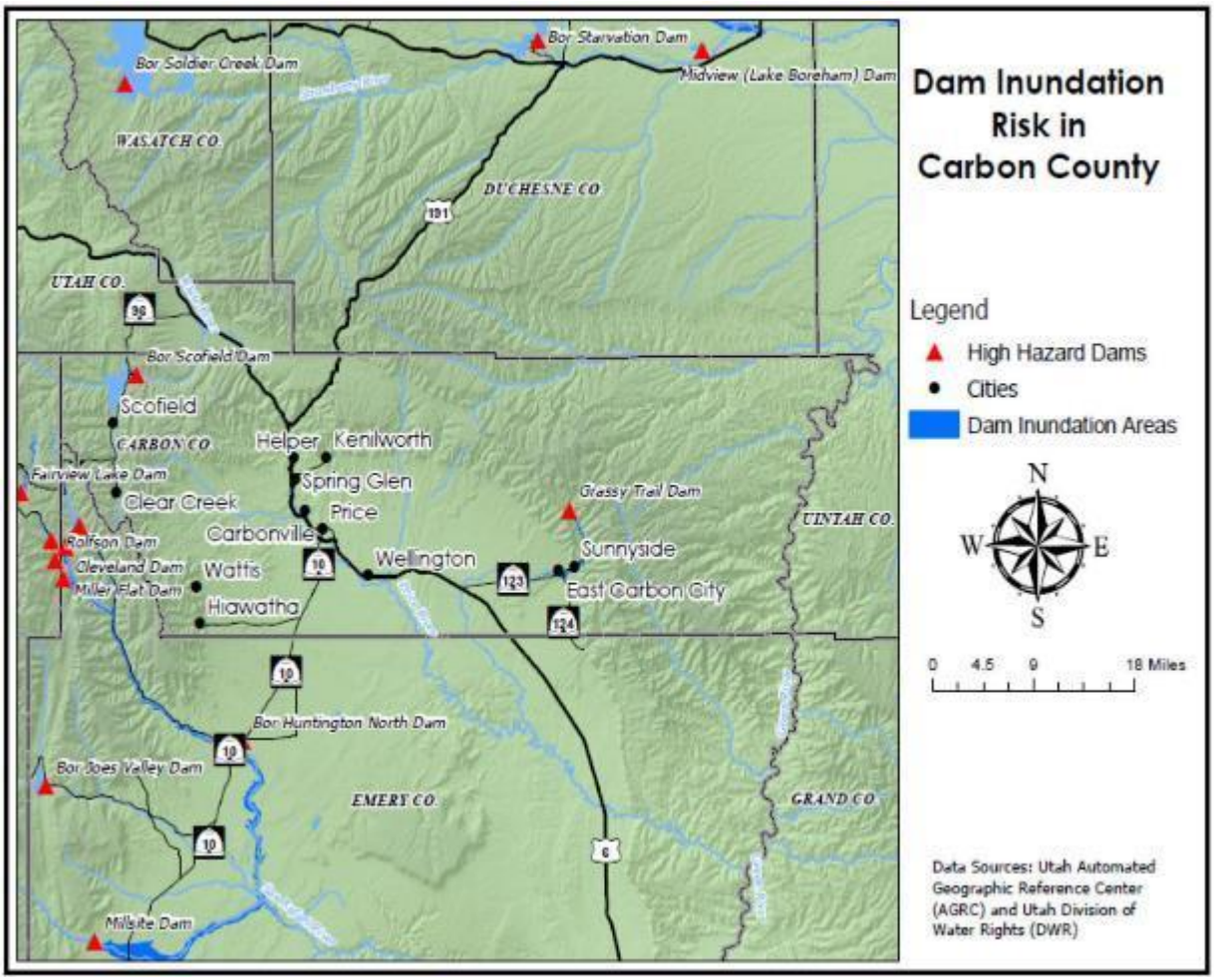
Figure 6.11.2.7 - Grassy Trail Dam Inundation 2018

There are 252 parcels that intersect the inundation zone.



Source: Carbon County GIS Office

Figure 6.11.2.8 - Carbon County Dam Inundation Risk



completedmit

6.11.3 Critical Facilities Protection

Note that This section will be completed as data becomes available. For county policies regarding natural resources, please refer to the Carbon County Resource Management Plan.

6.11.4 Natural Resource Protection

Note that This section will be completed as data becomes available. For county policies regarding natural resources, please refer to the Carbon County Resource Management Plan.

6.11.5 Secondary Hazards

Dam failures can trigger various secondary hazards, including but not limited to the following:

6.11.5.1 Flooding

Dam failures can release large volumes of water downstream, resulting in rapid and potentially catastrophic flooding. This flooding can inundate communities, infrastructure, and agricultural land, causing extensive property damage and posing risks to human life.

6.11.5.2 Sedimentation

The release of sediment trapped behind a dam during a failure event can contribute to sedimentation in rivers, streams, and reservoirs downstream. Excessive sedimentation can degrade water quality, impact aquatic habitats, and impede navigation and water supply infrastructure.

6.11.5.3 Debris and Blockages

Dam failures can mobilize debris, such as rocks, trees, and other debris, downstream, leading to blockages in waterways, bridges, and culverts. These blockages can exacerbate flooding and hamper emergency response efforts.

6.11.5.4 Water Contamination

Dam failures can introduce contaminants, such as oil, chemicals, and hazardous materials stored behind the dam, into downstream water bodies. This can contaminate drinking water supplies, threaten public health, and damage aquatic ecosystems.

6.11.5.5 Infrastructure Damage

Floodwaters resulting from dam failures can damage roads, bridges, utilities, and other critical infrastructure located downstream. This can disrupt transportation networks, communication systems, and access to essential services, further complicating emergency response and recovery efforts.

6.11.5.6 Climate Change Considerations

While dam failure probability remains low, climate change introduces several factors that warrant monitoring and adaptive management:

- More intense precipitation events could increase the frequency and magnitude of high inflow events, potentially exceeding historical design standards.
- Prolonged drought followed by heavy rainfall can create rapid inflow conditions that challenge reservoir management protocols.
- Increased temperature extremes and freeze-thaw cycles may accelerate deterioration of concrete and earthen dam components over time.
- Changes in watershed vegetation due to wildfire, drought, or invasive species can alter runoff patterns and sediment loads entering reservoirs.
- Older dam infrastructure designed using historical hydrological data may not adequately account for changing precipitation patterns and extremes.

Although Carbon County's dams are currently rated as low-hazard, regular reassessment of hydrological conditions, inspection protocols, and emergency action plans is necessary to maintain this status as climate conditions continue to change. Particular attention should be paid to updating inflow design flood calculations to reflect current and projected climate conditions rather than purely historical data.

6.12 Drought (D)

The following state disaster declarations have affected Carbon County since the last plan update in 2018:

- May 13, 2021: Declaring a State of Emergency Due to Drought Conditions.
- March 17, 2021: Declaring a State of Emergency Due to Drought Conditions.
- April 23, 2025: Executive Order 2025-04 Declaring a State of Emergency in Certain Counties Due to Drought Conditions.

No federal disaster declarations specific to drought have been issued for Carbon County during this period.

6.12.1 Overview & Profile

Drought, as defined by the National Drought Mitigation Center (NDMC), arises from a shortage of precipitation over an extended period, typically spanning a season or more. This deficiency leads to a water shortage impacting various activities, groups, or environmental sectors. The concept of drought is relative to long-term average conditions of precipitation and evapotranspiration within a specific area (NDMC 2006). It is a recurrent feature of weather and climate, occurring in almost all climatic zones with varying characteristics. Drought manifests as a dry progression through winter, spring, and summer months, potentially lasting for a year or more. The severity of droughts corresponds with their impact, with shorter droughts primarily affecting agriculture, while longer-lasting ones may significantly impact culinary water supplies in local areas and communities.

DROUGHT (D): Cyclical periods of drought place a strain on community culinary water resources.

Table 6.12.1.1 - Drought Hazard Profile

Potential Magnitude		Negligible	Less than 10%
		Limited	10-15%
	X	Critical	25-50%
		Catastrophic	More than 50%
Probability		Highly Likely	
	X	Likely: *Based on historical trends and climate projections, drought conditions in Carbon County have a "Likely" probability (50-89% chance) of occurring in any given year, with multi-year drought periods becoming increasingly common.*	
		Possible	
		Unlikely	
Changes since 2016	The recent drought conditions have increased awareness of the potential impact of drought in the County. Much of the new subdivision development in the County has led to the conversion of agricultural land to suburban. The majority of irrigated acres in those converted areas were done via flood irrigation. County planners have utilized the new compilation of water-related land use data (https://dwre-utahdnr.opendata.arcgis.com/pages/wrlu).		
Location	County wide		
Seasonal Pattern or Conditions	Winter: reduction of snowpack and water supplies Spring: reduction of crop production and/or increased crop water demand Summer: increased water demand, impeded crop production Fall: reduction in soil moisture could reduce snowmelt runoff		
Prior Occurrences	The USDA and NOAA report that the County has experienced drought conditions at different levels almost continually since 2016.		
Duration	Can be a month, several months, to years		
Climate Change	Climate change will increase the incidence of extreme precipitation events and change weather patterns. Extreme, or heavy snowfall events will increase the risk of avalanches. Also, changes in climate will likely cause an increase in drought hazard in Utah (which is one of the driest states in the US).		
Analysis Used	National Integrated Drought Information System, Utah State University Utah Climate Information, Utah Division of Water Resources, Newspapers, Local input.		

Figure 6.12.1.2 - Overall National Risk Index Score for Drought

Census Tract	Communities in Census Tract	FEMA National Risk Index Score	Rating
000100	Wellington, Unincorporated County	81.50	Relatively Low
000200	Price City, Unincorporated County	75.20	Very Low

000300	Price City	75.30	Very Low
000500	Helper, Scofield, Unincorporated County	77.40	Very Low
000600	East Carbon / Sunnyside, Unincorporated County	85.70	Relatively Low

Risk Index scores are calculated using an equation that combines scores for Expected Annual Loss due to natural hazards, Social Vulnerability, and Community Resilience (Expected Annual Loss x Social Vulnerability / Community Resilience = Risk Index). Source: National Risk Index, 2024

6.12.2 Location and Extent

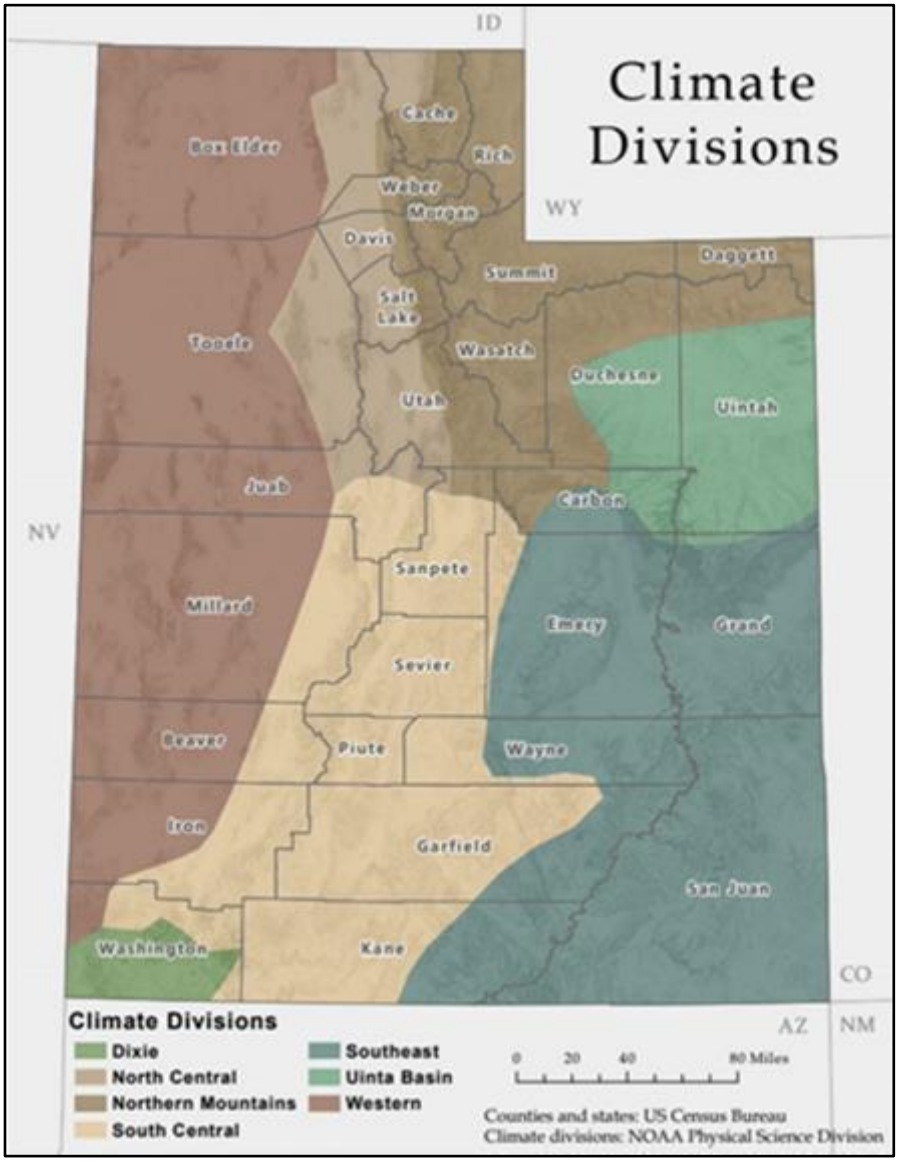
Carbon County has faced several major water issues that impact its communities and economy. One significant challenge is the arid climate and limited water resources, which puts strain on water availability for residential, agricultural, and industrial needs.

The county has experienced periods of drought throughout its history, with notable instances including severe droughts in the 1930s and the early 2000s. These droughts have had detrimental effects on the local economy, particularly on agriculture, which heavily relies on water for irrigation.

Local efforts to manage water resources and mitigate the impacts of drought include water conservation measures, improved water management practices, and diversification of the local economy.

Drought events affect Carbon County, incorporated cities, and unincorporated communities alike, impacting culinary water, irrigation water, and stock ponds. A Drought Disaster document was signed by Carbon County in April 2018, reflecting the cumulative effects of prolonged drought on the county's economic, social, and environmental fabric.

Figure 6.12.2.1 - Climate Division Map



6.12.3 Vulnerability Assessment

Carbon County, located in the high desert of Eastern Utah, is susceptible to drought events, influenced by three different climate divisions: the Northern Mountains, the Southeast, and the Uinta. This susceptibility is depicted in the climatic divisions map of Utah.

Carbon County experiences a semi-arid climate with distinct seasonal variations. The county generally has hot, dry summers and cold winters. Average summer temperatures range from the 80s to low 90s Fahrenheit (around 27-33 degrees Celsius), while winter temperatures can drop below freezing, with average highs in the 30s to 40s Fahrenheit (around 0-5 degrees Celsius).

Precipitation is relatively low throughout the year, with most occurring as winter snowfall. Climate trends suggest that Carbon County has been experiencing slightly warmer temperatures and changes in precipitation patterns, including drier conditions in recent years.

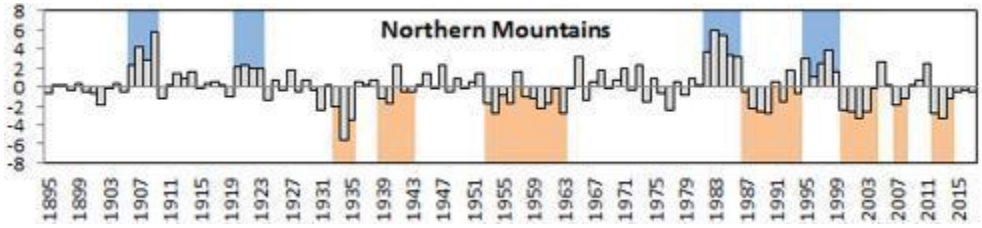
The following Bar Graph displays the Palmer Drought Severity Index (PDSI) values from 1895 – 2017 for the Southeast Climate Division of Utah. Data from: https://www.ncdc.noaa.gov/temp-and-precip/drought/historical-palmers/

Definition of Drought based on 2007 "Drought in Utah" report:

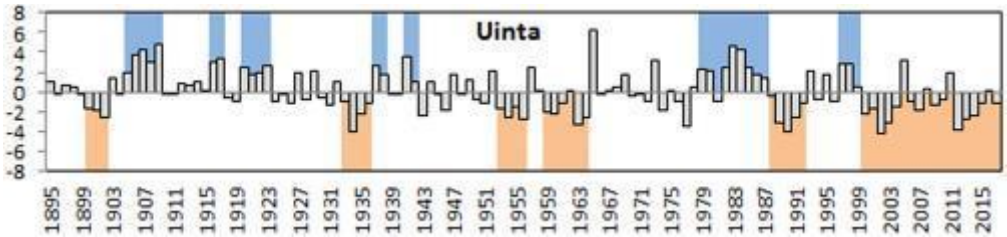
1. A drought was considered to have started with two consecutive years of annual average PDSI values less than or equal to -1.0.
2. A drought was terminated with two consecutive years of near to above normal conditions (annual average PDSI greater than -0.5).

PDSI value	PDSI category
Above 4.00	Extreme wet spell
3.00–3.99	Severe wet spell
2.00–2.99	Moderate wet spell
1.00–1.99	Mild wet spell
0.50–0.99	Incipient wet spell
0.49 to −0.49	Normal
−0.50 to −0.99	Incipient drought
−1.00 to −1.99	Mild drought
−2.00 to −2.99	Moderate drought
−3.00 to −3.99	Severe drought
Below −4.00	Extreme drought

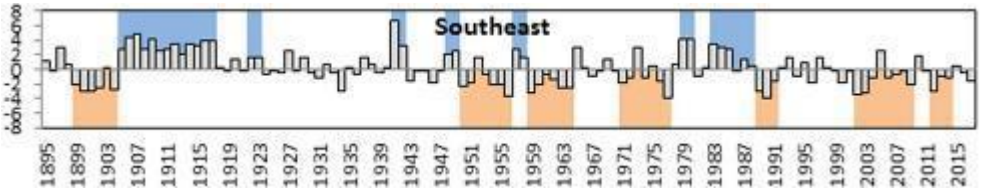
The orange areas indicate drought years. The blue areas indicate exceptional wet periods.



Northern Mountains Climate Division from 1895-2017 - 7 major drought events. The average PDSI value for the total 123-year record is 0.12.



Southeast Climate Division from 1895 - 2017 - 7 major drought events (8 if you include the current one into 2018). The average PDSI value for the total 123-year record is 0.21.



Uinta Basin Climate Division from 1895 - 2017 - 6 major drought events. This region has been in a major drought since 2000. The average PDSI value for the total 123-year record is 0.08.

6.12.3.1 Drought Extent - Surface Water Supply Index

The extent of drought conditions in Carbon County can be measured using several drought indices, with the Surface Water Supply Index (SWSI) being particularly relevant for this region. The SWSI is designed specifically for water supply forecasting and considers reservoir storage, streamflow, snowpack, and precipitation to provide a comprehensive assessment of water resources.

The SWSI scale ranges from -4.0 (extreme drought) to +4.0 (abundant supply), with values categorized as follows:

Table 6.12.3.2 Drought Intensity Categories Based on SWSI Values

SWSI Value	Drought Category	Description
-4.0 to -3.0	Extreme Drought	Exceptional and widespread crop/pasture losses; exceptional fire risk; shortages of water in reservoirs, streams, and wells creating water emergencies
-2.9 to -2.0	Severe Drought	Likely crop or pasture losses; high fire risk; water shortages common; water restrictions imposed
-1.9 to -1.0	Moderate Drought	Some damage to crops/pastures; moderate fire danger; low reservoir levels
-0.9 to +0.9	Near Normal	Average conditions for the region
+1.0 to +1.9	Slightly Wet	Above average moisture conditions
+2.0 to +2.9	Moderately Wet	Well above average moisture conditions
+3.0 to +4.0	Extremely Wet	Exceptional moisture conditions

Based on current data from the Utah Division of Water Resources, Carbon County has experienced SWSI values ranging from -3.6 during the most severe drought periods to +2.1 during exceptionally wet years. The county is susceptible to multi-year drought cycles that can progressively deplete water resources and increase vulnerability to other hazards such as wildfire.

Other drought indices used to assess drought conditions in Carbon County include:

1. Palmer Drought Severity Index (PDSI): Measures the departure of moisture supply from demand.

2. Standardized Precipitation Index (SPI): Measures precipitation anomalies at different time scales.
3. U.S. Drought Monitor: Produces weekly drought maps combining multiple indices and impacts.

These indices collectively provide a comprehensive picture of drought conditions, their extent, and their impacts on water resources, agriculture, and wildfire risk throughout Carbon County.

6.12.3.3 Standardized Precipitation Index (SPI):

The SPI, developed in 1993, quantifies precipitation deficits for various time scales and climates. It assigns a single numeric value to precipitation, allowing comparison across regions. Ranging from extremely wet to extremely dry, SPI values provide early warning of drought and assess drought severity.

6.12.3.4 Localized Drought Analysis:

An analysis of 33 gauging stations' data in Utah revealed localized drought occurrences annually since 1924. Drought duration is longer in basins reliant on snowmelt runoff, with greater frequency in areas like the Wasatch Range. Given Utah's reliance on surface water supplies, drought significantly affects both population and industry statewide.

6.12.3.5 Palmer Drought Severity Index (PDSI):

The PDSI, developed in 1965, is a soil moisture algorithm calibrated for relatively homogeneous regions. Although less suitable for mountainous terrain or areas with frequent climatic extremes, it serves as the oldest index for measuring drought. Calculated based on precipitation, temperature data, and local soil water content, the PDSI provides monthly values to determine long-term drought. With values ranging from -4 to 4, negative values denote dry spells and positive values indicate wet spells. The PDSI effectively categorizes drought severity, from incipient to extreme levels (NDMC 2006).

Table 6.12.3.6 - Palmer Drought Severity Index

High-Hazard Dams	Moderate-Hazard Dams
4.0 or more	Extremely wet
3.0 to 3.99	Very wet
2.0 to 2.99	Moderately wet
1.0 to 1.99	Slightly wet
0.5 to 0.99	Incipient wet spell
0.49 to -0.49	Near normal
-0.5 to -0.99	Incipient dry spell
-1.0 to -1.99	Mild drought

-2.0 to -2.99	Moderate drought
-3.0 to -3.99	Severe drought
-4.0 or less	Extreme drought
Source: NDMC 2006	

6.12.3.7 Jurisdictional Vulnerability - Drought

Drought impacts all participating jurisdictions in Carbon County with varying degrees of severity. The potential impacts include:

- Water supply shortages affecting residential and commercial users.
- Increased costs and challenges for water treatment and distribution.
- Agricultural losses affecting local economy and food security.
- Heightened wildfire risk with associated public safety concerns.
- Stress on natural ecosystems and wildlife habitats.
- Economic impacts from reduced tourism and recreation.
- Conflicts over competing water needs during shortage periods.

Each jurisdiction has developed specific drought response protocols as detailed in Section 7, including conservation measures, water use restrictions, and public education initiatives.

Figure 6.12.3.8 - Expected Annual Loss from Drought (FEMA NRI)

Census Tract	Communities in Census Tract	Expected Annual Loss - Score	Expected Annual Loss - Amount	Rating
000100	Wellington, Unincorporated County	81.70	$457	Relatively Low
000200	Price City, Unincorporated County	75.00	$53	Very Low
000300	Price City	74.60	$43	Very Low
000500	Helper, Scofield, Unincorporated County	77.50	$130	Very Low
000600	East Carbon / Sunnyside, Unincorporated County	85.40	$1,400	Relatively Low

Expected Annual Loss scores are calculated using an equation that combines values for exposure, annualized frequency, and historic loss ratios (Expected Annual Loss = Exposure × Annualized Frequency × Historic Loss Ratio).
Source: National Risk Index, 2024

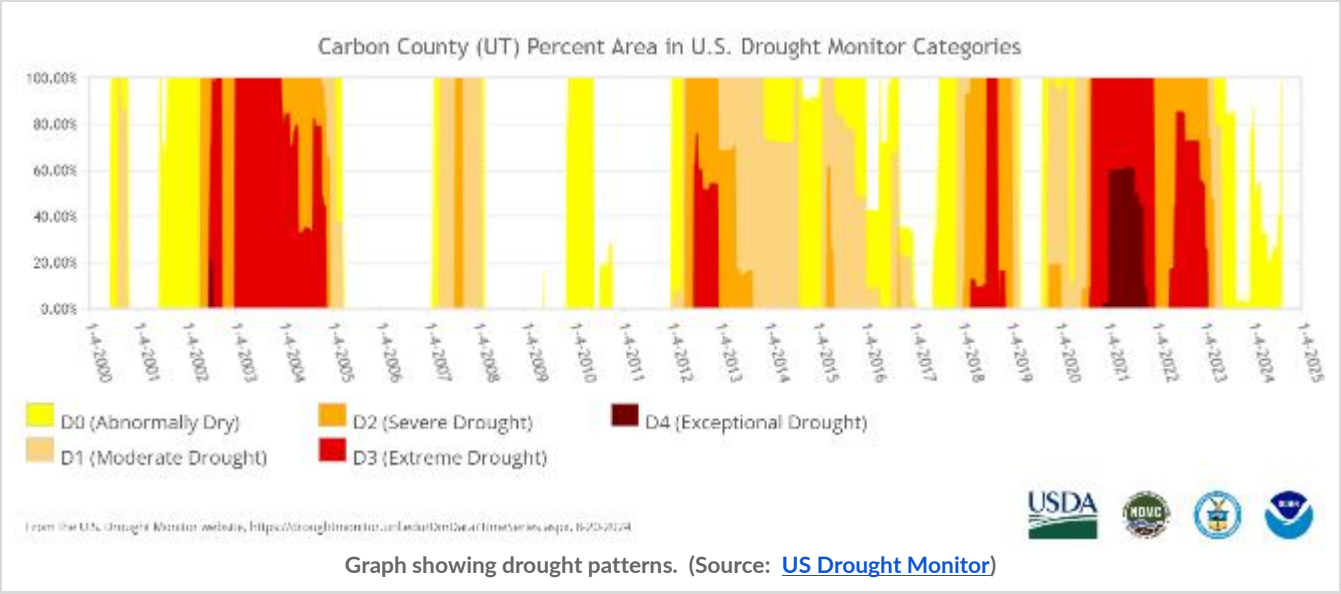
6.12.4 Critical Facilities Protection

At the time of drafting this plan, there were no known risks related to drought that would directly affect critical facilities.

6.12.5 Natural Resource Protection

Note that This section will be completed as data becomes available. For county policies regarding natural resources, please refer to the Carbon County Resource Management Plan.

Figure 6.12.5.1 - Historic Drought Trends - Carbon County



Graph showing drought patterns. (Source: US Drought Monitor)

6.12.7 Secondary Hazards

Drought can trigger various secondary hazards, including but not limited to:

6.12.7.1 Wildfires

Drought conditions can increase the risk and severity of wildfires by drying out vegetation and making it more susceptible to ignition. Wildfires can result in property damage, loss of life, air quality degradation, and impacts on critical infrastructure.

6.12.7.2 Water Shortages

Drought can lead to reduced water availability for agriculture, industry, municipal water supplies, and ecosystem health. Water shortages can impact food production, economic activities, and public health, leading to conflicts over water resources and the need for water rationing measures.

6.12.7.3 Crop Failures

Drought conditions can adversely affect crop yields, livestock productivity, and agricultural income. Crop failures can result in food shortages, price volatility, and economic losses for farmers and rural communities, as well as disruptions to food supply chains.

6.12.7.4 Economic Impacts

Drought can have significant economic impacts on various sectors, including agriculture, tourism, energy production, and manufacturing. Reduced water availability and increased costs of water management can lead to job losses, business closures, and declines in economic growth and prosperity.

6.12.7.5 Ecological Degradation

Drought can cause ecological stress, habitat loss, and biodiversity decline in terrestrial and aquatic ecosystems. Reduced water levels in rivers, lakes, and wetlands can affect aquatic habitats, fish populations, and migratory bird species, as well as exacerbate water quality issues and harmful algal blooms.

6.12.7.6 Climate Change Considerations

Climate change is expected to intensify drought conditions in Carbon County through several interrelated factors:

- Average annual temperatures are projected to increase 2-5°F by mid-century, accelerating evaporation rates from soil, vegetation, and water bodies.
- Precipitation patterns are becoming more variable, with longer dry periods between rainfall events even if total annual precipitation remains similar.
- Earlier snowmelt and reduced snowpack is altering the timing of water availability, with peak runoff occurring 2-3 weeks earlier than historical patterns.
- Higher temperatures increase evapotranspiration rates, reducing soil moisture and stressing vegetation even during periods of normal precipitation.
- The Palmer Drought Severity Index for the region shows an increasing trend toward more severe drought conditions over the past two decades.

These changes have significant implications for water supply planning, agricultural production, and wildfire risk management throughout the county. Water conservation measures, improved monitoring systems, and diversified water supplies are critical adaptation strategies for maintaining resilience to these changing drought patterns.

6.13 Severe Weather (SW)

Note: This plan update includes hazard events through October 2024. No federal or state disaster declarations specific to severe weather have been issued for Carbon County since the last plan update in 2018.

6.13.1 Overview & Profile

Severe storms encompass various meteorological phenomena including Lightning, Heat Wave, Cold Wave, Winter Weather (including heavy snow), Ice Storm, Tornado, Hail, Strong Wind, and Avalanche. These events

are typically associated with high precipitation during summer and winter months and can occur anywhere in the region. They can cause extensive damage, particularly to agriculture, farming, transportation systems, and may disrupt business operations due to power outages. SEVERE WEATHER (SW): Snowstorms, summer thunderstorms, hail, and high winds over eastern Utah have a dramatic effect on regional commerce, transportation, and daily activity and are a major forecast challenge for local meteorologists.

Table 6.13.1.1 - Severe Weather Hazard Profile

Potential Magnitude		Negligible	Less than 10%
		Limited	10-15%
	X	Critical	25-50%
		Catastrophic	More than 50%
Probability	X	Highly Likely: *Severe weather events including lightning, heat waves, cold waves, ice storms, tornadoes, hail, winter weather, avalanche, and strong winds collectively have a "Highly Likely" probability of occurring in Carbon County each year (90-100% annual probability). While some individual components (such as tornadoes) may be less frequent, at least one form of severe weather impacts the county annually.*	
		Likely	
		Possible	
		Unlikely	
Changes since 2016	In recent years, winds in excess of 100 mph toppled thousands of trees and tore roofs and siding off of hundreds of buildings. Significant winter storms have also continued to draw attention to the need to prepare for potential hazard events.		
Location	Countywide. Carbon County has the potential to experience a number of severe weather events. The most likely are heavy winter storms and canyon winds.		
Prior Occurrences	NOAA has recorded 25 different major storms in the County since 2016. None of them resulted in reported deaths or injuries.		
Seasonal Pattern or Conditions	The occurrence of severe weather is generally snow, hail, and fog during the winter months, lightning and thunderstorms late spring, summer, and early fall. Varies based on latitude, elevation, aspect and landforms.		
Duration	The storms may be hours or days		
Secondary Hazards	Wildfire, flooding.		
Climate Change	Winter drought increases avalanche risk.		
Analysis Used	NOAA Reports, FEMA National Risk Index		

Figure 6.13.1.2 - Overall National Risk Index Score for Severe Weather

Census Tract	Communities in Census Tract	FEMA National Risk Index Score	Rating
000100	Wellington, Unincorporated County	—	—

	Cold Wave	Not rated	Not rated
	Hail Storm	33.10	Very Low
	Heat Wave	88.60	Relatively High
	Ice Storm	41.80	Relatively Low
	Lightning	95.90	Very High
	Strong Wind	22.60	Very Low
	Tornado	26.80	Very Low
	Winter Weather	66.30	Relatively Moderate
000200	Price City, Unincorporated County		
	Cold Wave	Not rated	Not rated
	Hail Storm	37.40	Very Low
	Heat Wave	92.80	Relatively High
	Ice Storm	53.30	Relatively Low
	Lightning	98.50	Very High
	Strong Wind	26.80	Relatively Low
	Tornado	32.10	Relatively Low
	Winter Weather	74.1	Relatively Moderate
000300	Price City		
	Cold Wave	Not rated	Not rated
	Hail Storm	41.10	Very Low
	Heat Wave	94.90	Relatively High
	Ice Storm	63.70	Relatively Low
	Lightning	99.20	Very High
	Strong Wind	32.40	Relatively Low
	Tornado	36.80	Relatively Low
	Winter Weather	80.00	Relatively Moderate
000500	Helper, Scofield, Unincorporated County		
	Cold Wave	Not rated	Not rated
	Hail Storm	36.60	Very Low

	Heat Wave	91.10	Relatively High
	Ice Storm	54.70	Relatively Low
	Lightning	98.20	Very High
	Strong Wind	29.10	Relatively Low
	Tornado	31.10	Relatively Low
	Winter Weather	84.90	Relatively Moderate
000600	East Carbon / Sunnyside, Unincorporated County		
	Cold Wave	42.30	Very Low
	Hail Storm	38.40	Very Low
	Heat Wave	93.50	Relatively High
	Ice Storm	55.70	Relatively Low
	Lightning	99.50	Very High
	Strong Wind	27.40	Relatively Low
	Tornado	31.50	Relatively Low
	Winter Weather	88.00	Relatively High

Risk Index scores are calculated using an equation that combines scores for Expected Annual Loss due to natural hazards, Social Vulnerability, and Community Resilience (Expected Annual Loss x Social Vulnerability / Community Resilience = Risk Index). Source: National Risk Index, 2024

6.13.1.3 Probability by Severe Weather Type

While severe weather as a collective hazard is rated as "Highly Likely" (90-100% annual probability), individual severe weather phenomena vary in their probability of occurrence in Carbon County:

- **Lightning**: Highly Likely (90-100% annual probability) - The county experiences multiple lightning events each year, particularly during summer thunderstorm season.
- **Heat Wave**: Likely (50-89% annual probability) - Based on historical records and climate projections, Carbon County typically experiences at least one heat wave per year with temperatures exceeding 95°F for three or more consecutive days.
- **Cold Wave**: Likely (50-89% annual probability) - Winter temperatures regularly drop below freezing, with extreme cold events (below 0°F) occurring on average once every 1-2 years.
- **Winter Weather**: Highly Likely (90-100% annual probability) - Winter storms with significant snowfall occur multiple times annually, particularly in the higher elevation areas of the county.
- **Ice Storm**: Possible (10-49% annual probability) - While less common than other winter precipitation types, ice storms occur approximately once every 3-5 years.
- **Tornado**: Unlikely (less than 10% annual probability) - Carbon County has experienced only a few recorded tornado events, primarily F0-F1 magnitude, with decades between occurrences.

- **Hail**: Likely (50-89% annual probability) - Hailstorms typically occur 1-3 times per year, usually during summer thunderstorms, though significant damaging hail (>1" diameter) is less frequent.
- **Strong Wind**: Highly Likely (90-100% annual probability) - High wind events, particularly canyon winds, occur multiple times annually throughout the county.
- **Avalanche**: Possible (10-49% annual probability) - Avalanches primarily affect mountainous areas and backcountry recreation zones, with several recorded events each winter season.

These probability classifications are based on historical occurrence data, NOAA records, and local emergency management reports, and align with the probability categories defined in Section 6.5.5.

6.13.2 Locations and Extent

Severe weather events affect all jurisdictions within Carbon County, with varying intensities and impacts based on elevation, topography, and geographic location. The anticipated range of intensities for severe weather phenomena in Carbon County include:

Temperature Extremes:

- **Heat Events**: Carbon County experiences heat waves with temperatures ranging from 95°F to over 105°F. According to the Heat Risk Index developed by the National Weather Service, the county typically experiences Level 2 (Moderate Risk) heat events annually, with occasional Level 3 (High Risk) events. Heat Risk Index levels range from 0 (Little to No Risk) to 4 (Extreme Risk).
- **Cold Events**: Winter temperatures range from normal seasonal lows around 10-20°F to extreme cold wave conditions reaching -10°F to -25°F. Wind Chill Index values during extreme events can reach dangerous levels of -20°F to -40°F, creating life-threatening conditions within 30 minutes of exposure.

Precipitation and Winter Weather:

- **Regional Snowfall Index (RSI)**: Carbon County winter storms typically range from RSI Category 1 (Notable) with 6-12 inches of snowfall, to RSI Category 3 (Significant) events producing 18-30 inches. Extreme events may reach RSI Category 4 (Major) with over 30 inches in mountainous areas.
- **Hail**: Using the TORRO Hail Storm Intensity Scale, Carbon County experiences hail events ranging from H0 (pea-sized, 5mm) to H4 (walnut-sized, 20mm), with rare occurrences of H5-H6 (golf ball to tennis ball sized, 25-50mm) hail that can cause significant property damage.

Wind Events:

- **Beaufort Wind Scale**: Carbon County experiences wind events ranging from Force 6 (Strong Breeze, 25-31 mph) during typical weather events to Force 9-10 (Strong Gale, 47-61 mph) during severe wind storms. Canyon areas may experience enhanced wind effects due to topographic channeling.

Lightning:

- **Lightning Activity Levels (LAL)**: Carbon County experiences LAL 1-2 (Little to Moderate lightning activity) during typical thunderstorms, escalating to LAL 4-5 (High to Very High activity) during severe thunderstorm events, significantly increasing wildfire ignition risk.

Avalanche:

- Mountainous regions in Carbon County with slopes steeper than 30 degrees are susceptible to avalanches, particularly areas above 7,000 feet elevation. Avalanche intensity is measured using the North American Avalanche Danger Scale and avalanche size classifications:
- **Avalanche Danger Sc**ale (Used for daily forecasting):

    - Green (Low): Generally safe avalanche conditions, isolated natural avalanches possible
    - Yellow (Moderate): Heightened awareness needed, human-triggered avalanches possible
    - Orange (Considerable): Dangerous avalanche conditions, human-triggered avalanches likely
    - Red (High): Very dangerous conditions, natural and human-triggered avalanches likely
    - Black (Extreme): Avoid avalanche terrain, natural avalanches certain, large destructive avalanches possible
- **Avalanche Size Classification (Destructive Potential):**
    - Size 1 (Small): Relatively harmless to people but could knock down or bury a person
    - Size 2 (Medium): Could bury, injure, or kill a person; can break trees up to 8 inches in diameter
    - Size 3 (Large): Could bury and destroy cars, damage trucks, destroy wood frame houses, or break large trees
    - Size 4 (Very Large): Could destroy railway cars, large trucks, several buildings, or forest areas up to 4 hectares
    - Size 5 (Maximum): Largest snow avalanches; could gouge landscape, destroy villages or forests of 40+ hectares
- Carbon County's mountainous terrain primarily experiences Size 1-3 avalanches, with occasional Size 4 events in steep terrain above 8,000 feet elevation. Most avalanche-prone slopes face north and northeast aspects where wind-loaded snow accumulates.

These intensity ranges are based on historical weather data, National Weather Service records, and climate monitoring from 1990-2024. Higher elevation areas of the county typically experience more extreme conditions within these ranges.

6.13.3 Vulnerability Assessment

Carbon County has experienced a wide range of severe weather, including thunderstorms with heavy rainfall and lightning, tornadoes, dense fog, hail, and heavy snowfall. The heavy rains often impact transportation systems, leading to road flooding, damage, and closures. Additionally, unimproved roads can become impassable during severe weather events.

According to NOAA's National Centers for Environmental Information Storm Events Database, Carbon County has experienced the following significant severe weather events between 2018-2023:

- **Winter Storms**: 12 significant events, including a major snowstorm in December 2021 that deposited 18" of snow in 24 hours
- **High Wind Events**: 8 events with winds exceeding 58 mph, including a 2020 event that caused power outages affecting 1,200 residents
- **Lightning**: 3 documented strike incidents causing property damage, including a 2019 strike that damaged communications equipment
- **Hail**: 5 events with hail diameter exceeding 1", including a 2022 event that damaged vehicles and roofs in Price
- **Heat Wave**: 4 heat waves with temperatures exceeding 100°F for three or more consecutive days
- **Cold Wave**: 2 prolonged cold periods with temperatures below 0°F

These events resulted in approximately $1.2 million in property damage, primarily from wind and winter storm impacts. No fatalities were reported during this period.

Figure 6.13.3.1 - Expected Annual Loss from Severe Weather (FEMA NRI)

Census Tract	Communities in Census Tract	Expected Annual Loss - Score	Expected Annual Loss - Amount	Rating
000100	Wellington, Unincorporated County	—	—	—
	Cold Wave	Not rated	$0	Not rated
	Hail Storm	34.00	$438	Very Low
	Heat Wave	89.80	$67,000	Relatively High
	Ice Storm	42.30	$1,700	Relatively Low
	Lightning	96.90	$39,000	Very High
	Strong Wind	23.70	$1,500	Very Low
	Tornado	27.90	$12,000	Very Low
	Winter Weather	66.50	$3,000	Relatively Moderate
000200	Price City, Unincorporated County	—	—	—
	Cold Wave	Not rated	$0	Not rated
	Hail Storm	36.70	$574	Very Low
	Heat Wave	92.50	$88,000	Relatively High
	Ice Storm	50.20	$2,400	Relatively Low
	Lightning	98.50	$52,000	Very High
	Strong Wind	26.50	$2,000	Relatively Low
	Tornado	31.20	$16,000	Relatively Low
	Winter Weather	72.00	$4,000	Relatively Moderate
000300	Price City	—	—	—
	Cold Wave	Not rated	$0	Not rated
	Hail Storm	37.30	$609	Very Low
	Heat Wave	92.60	$88,000	Relatively High
	Ice Storm	54.90	$2,900	Relatively Low
	Lightning	98.40	$50,000	Very High
	Strong Wind	28.40	$2,400	Relatively Low

	Tornado	32.20	$17,000	Relatively Low
	Winter Weather	73.30	$4,300	Relatively Moderate
000500	Helper, Scofield, Unincorporated County	—	—	—
	Cold Wave	Not rated	$0	Not rated
	Hail Storm	37.20	$601	Very Low
	Heat Wave	92.00	$82,000	Relatively High
	Ice Storm	54.10	$2,800	Relatively Low
	Lightning	98.80	$55,000	Very High
	Strong Wind	29.80	$2,700	Relatively Low
	Tornado	31.60	$16,000	Relatively Low
	Winter Weather	85.30	$8,600	Relatively Moderate
000600	East Carbon / Sunnyside, Unincorporated County	—	—	—
	Cold Wave	43.00	$0	Very Low
	Hail Storm	37.60	$629	Very Low
	Heat Wave	93.20	$95,000	Relatively High
	Ice Storm	52.30	$2,600	Relatively Low
	Lightning	99.50	$73,000	Very High
	Strong Wind	27.0	$2,100	Relatively Low
	Tornado	30.50	$15,000	Relatively Low
	Winter Weather	87.00	$9,700	Relatively High

Expected Annual Loss scores are calculated using an equation that combines values for exposure, annualized frequency, and historic loss ratios (Expected Annual Loss = Exposure × Annualized Frequency × Historic Loss Ratio).
Source: National Risk Index, 2024

6.13.3.2 Jurisdictional Vulnerability - Severe Weather

Severe weather affects all participating jurisdictions in Carbon County, though with varying impacts. The (general) potential impacts include:

- Damage to buildings and infrastructure from high winds, heavy snow, or ice.
- Power outages affecting critical services and vulnerable populations.
- Transportation disruptions isolating communities and limiting emergency access.

- Public safety risks from heat waves and cold waves, particularly for vulnerable populations.
- Economic losses from business closures and property damage.
- Increased demands on emergency services during extreme events.
- Damage to agriculture and natural resources.

Each jurisdiction faces different severe weather challenges based on their location, elevation, and infrastructure, as detailed in their respective sections in Section 7. Examples of historical impacts follow:

- Carbon County's unincorporated areas face challenges with road maintenance and emergency response during severe winter weather and thunderstorms. A 2019 winter storm caused road closures on county roads for 3 days, while high winds in 2021 damaged agricultural structures.
- Price City, as the regional center, experiences economic disruption during severe weather events that affect transportation corridors. A 2020 lightning strike damaged municipal water infrastructure, and a 2022 hailstorm caused significant damage to the city fleet vehicles.
- Scofield Town experiences extreme winter conditions that can lead to isolation during heavy snowfall. Experiences the most extreme winter conditions, with a 2020 storm depositing 24" of snow, making the town inaccessible for 48 hours.
- East Carbon/Sunnyside and Wellington experience typical weather patterns managed through county-level emergency response coordination.
- The Carbon School District must consider severe weather in facility operations and student transportation planning, with potential school closures during extreme events.
- The Price River Water Improvement District's operations can be disrupted by power outages and freezing conditions affecting water delivery infrastructure.

6.13.4 Types of Severe Weather

The following subsections detail each type of severe weather that may affect Carbon County. All of these phenomena—Heat Waves / Cold Waves, Heavy Precipitation, Winter Storms, Ice Storms, Heavy Snow, Avalanche, Lightning, Tornado, High Winds, Fog, Thunderstorms, and Hailstorms—are grouped under 'Severe Weather' for planning purposes, though each represents a distinct hazard with specific characteristics, locations, and impacts. Each subsection follows a consistent format addressing location and extent, previous occurrences, vulnerability, duration, and secondary hazards.

The following subsections detail each type of severe weather that may affect Carbon County. While these phenomena are grouped under "Severe Weather" for planning purposes, each represents a distinct hazard with specific characteristics, locations, and impacts. Each subsection follows a consistent format addressing location and extent, previous occurrences, vulnerability, duration, and secondary hazards.

6.13.4.1 Heat Wave and Cold Wave

Utah experiences heat waves and cold waves with winter months often seeing temperatures below zero degrees Fahrenheit and summer temperatures reaching into the nineties and occasionally exceeding 100 degrees Fahrenheit. Rapid temperature changes within short periods can cause severe emotional stress in individuals. Extreme cold disrupts agriculture, farming, and poses risks to vulnerable populations such as the young, elderly, homeless, and animals. Extreme heat can lead to heat exhaustion, strain on electrical systems, and power outages.

- **Location and Extent**: Carbon County experiences temperature extremes throughout all jurisdictions, with extent varying by elevation and topography. Heat waves occur county-wide with temperatures ranging from 95°F (threshold for heat wave classification) to over 105°F during extreme events.
    - According to the National Weather Service Heat Risk Index, Carbon County typically experiences:
        - Level 0-1 (Little to Moderate Risk): Normal summer temperatures 85-94°F
        - Level 2 (Moderate Risk): Heat wave conditions 95-99°F lasting 2-3 days
        - Level 3 (High Risk): Extreme heat events 100-105°F lasting 3+ days
        - Level 4 (Extreme Risk): Rare events exceeding 105°F with high humidity
    - Cold wave events affect the entire county with temperatures ranging from normal winter lows (10-20°F) to extreme cold wave conditions (-10°F to -25°F). Wind Chill Index calculations show dangerous conditions occur when:
        - Wind Chill 0°F to -18°F: Frostbite possible in 30 minutes
        - Wind Chill -19°F to -39°F: Frostbite likely in 10-30 minutes
        - Wind Chill -40°F or below: Frostbite in 10 minutes or less
    - Higher elevation areas experience more extreme conditions within these ranges, while valley areas may be moderated by topographic protection.
- **Previous Occurrences**: Specific data on extreme temperature events in Carbon County is limited.
- **Vulnerability**: Populations vulnerable include the elderly, young children, and individuals with health conditions.
- **Duration**: Extreme temperature events can last from several days to weeks.
- **Secondary Hazards**: Heat waves can lead to drought and increased wildfire risk; extreme cold can cause infrastructure damage.

6.13.4.2 Heavy Precipitation

Heavy precipitation, whether from rain or snow, can result in flash flood events, especially in areas near mountain ranges like the Wasatch Front. Winter storms can deposit significantly more snow in mountainous areas compared to valleys, leading to secondary hazards such as avalanches. Alluvial fans in valley locations can exacerbate flooding during heavy rain events, damaging residential and commercial properties.

- **Location and Extent**: Heavy precipitation events occur throughout Carbon County with intensity varying by elevation and storm type.
    - Precipitation rates are measured in inches per hour, with Carbon County experiencing:
        - Moderate Heavy Rain: 0.5-1.0 inches per hour over 1-3 hours
        - Heavy Rain: 1.0-2.0 inches per hour, potential for localized flooding
        - Extreme Precipitation: 2.0+ inches per hour, flash flood conditions likely
        - Daily Totals: Severe events can produce 2-4 inches in 24 hours, with extreme events reaching 5-6 inches
    - Mountainous areas typically receive higher precipitation totals, while valley areas may experience more intense short-duration events due to orographic effects.

- **Previous Occurrences**: In September 2023, heavy rains led to flooding in southwestern Utah, including Carbon County, causing road closures and mudslides.
- **Vulnerability**: Communities near rivers and low-lying areas are particularly susceptible.
- **Duration**: Such events typically last from several hours to a few days.
- **Secondary Hazards**: Flooding, landslides, and infrastructure damage.

6.13.4.3 Winter Storms

Winter storms develop from the interaction of cold air masses from Canada and warm moist air masses from the Gulf of Mexico, resulting in snowfall and freezing temperatures. These storms can paralyze cities, disrupt transportation and emergency services, cause building collapses, and knock down trees and utility lines. Prolonged utility outages during cold temperatures pose risks to vulnerable populations.

- **Location and Extent**: Winter storms affect all of Carbon County with intensity measured by the Regional Snowfall Index (RSI).
    - Carbon County experiences:
        - RSI Category 1 (Notable): 6-12 inches snowfall, minor impacts
        - RSI Category 2 (Significant): 12-18 inches snowfall, moderate impacts
        - RSI Category 3 (Major): 18-30 inches snowfall, significant impacts
        - RSI Category 4 (Extreme): 30+ inches snowfall, extreme impacts
    - Higher elevation areas consistently receive greater snowfall totals, with mountain areas potentially receiving 150-200% of valley totals during the same storm event.
- **Previous Occurrences**: The region has experienced significant snowfall events, though specific data for Carbon County is limited.
- **Vulnerability**: Residents, especially in rural areas, face challenges due to road closures and power outages.
- **Duration**: Winter storms can last from several hours to multiple days.
- **Secondary Hazards**: Avalanches, hypothermia, and transportation accidents.

6.13.4.4 Ice Storms

Ice storms, although rare in Utah, can occur when rain falls through a temperature inversion, freezing upon contact with surfaces and leading to hazardous road conditions, downed trees, and power outages. Bridges and overpasses are likely to freeze first. (NWS 2001)

- **Location and Extent**: Ice storms occur throughout Carbon County when surface temperatures are at or below freezing while precipitation falls as freezing rain.
    - Ice accumulation extent ranges:
        - Light Ice Storm: 0.25 inches or less ice accumulation, minor tree damage and scattered power outages
        - Moderate Ice Storm: 0.25-0.5 inches accumulation, significant tree damage and widespread power outages
        - Heavy Ice Storm: 0.5-1.0 inches accumulation, major tree damage, extensive power outages lasting days

        - Extreme Ice Storm: 1.0+ inches accumulation, catastrophic damage to trees and power infrastructure
    - Valley areas are more susceptible to ice storm conditions due to cold air pooling effects.
- **Previous Occurrences**: Specific records of ice storms in Carbon County are limited.
- **Vulnerability**: Power lines, trees, and roadways are particularly susceptible to ice accumulation.
- **Duration**: Typically last from a few hours to a day.
- **Secondary Hazards**: Power outages, transportation accidents, and infrastructure damage.

6.13.4.5 Heavy Snow

Heavy snow has occasionally immobilized Carbon County stranding commuters, stopping the flow of commerce, disrupting emergency services, closing infrastructure and services. When heavy snow occurs with high winds, blowing snow or blizzard conditions may exist. (NWS 2001)

- **Location and Extent**: Heavy snow events are measured by both accumulation totals and snowfall rates.
    - Carbon County experiences:
        - Moderate Heavy Snow: 4-6 inches in 12 hours (0.5 inches/hour rate)
        - Heavy Snow: 6-12 inches in 12 hours (1.0+ inches/hour rate)
        - Extreme Heavy Snow: 12+ inches in 12 hours (2.0+ inches/hour rate)
        - Seasonal Totals: Valley areas 40-80 inches annually, mountain areas 100-200+ inches
    - Snow density varies from light powder (5-8% water content) to heavy wet snow (15-20% water content), affecting structural loading impacts.
- **Previous Occurrences**: The county has experienced heavy snow events, though specific data is limited.
- **Vulnerability**: Transportation networks, emergency services, and residents are affected.
- **Duration**: Heavy snow events can last from several hours to days.
- **Secondary Hazards**: Avalanches, roof collapses, and transportation disruptions.

6.13.4.6 Avalanche

Utah DEM defines an avalanche as a mass of snow sliding down a mountainside, driven by gravitational forces that exceed the strength of the snow grains' bonds. Four key ingredients contribute to avalanche formation: snow, a weak layer in the snow cover, a steep slope, and a trigger. Avalanches predominantly release on slopes above timberline, facing away from prevailing winds, but can also occur on smaller slopes below timberline, such as gullies, road cuts, and tree openings. While dense trees may anchor snow on steep slopes, avalanches can still occur and travel through moderately dense forests.

Avalanche victims are primarily backcountry recreationists, including snowmobilers, climbers, snowboarders, skiers, and hikers. In 90% of avalanche incidents, the victim or someone in their party triggers the avalanche.

Avalanches consist of a starting zone, track, and runout zone. Human-induced avalanches can result from activities like snowmobiling or backcountry skiing, causing ground shaking. Weather and terrain significantly influence avalanche activity, with large, frequent storms and steep slopes being primary natural factors. Other contributing factors to snowpack stability include snow accumulation rate, moisture content, snow crystal types, and wind speed/direction.

Dry-slab avalanches occur when a cohesive snow slab fractures and slides over weaker snow, usually due to

sudden additional weight. Dry-slab avalanches are typically the deadliest, traveling between 60-80 miles per hour. Wet-slab avalanches, on the other hand, result from percolating water weakening the snow grains' bonds, often triggered by warm temperatures or strong sun. Wet avalanches travel slower, around 20 miles per hour.

Avalanches pose risks to communities, structures, roads, and outdoor enthusiasts. Burial of structures, vehicles, and individuals in the runout zone can lead to loss of life and economic losses. Despite mitigation efforts, avalanches remain a significant hazard in Utah, causing fatalities and injuries.

- **Location and Extent**: Mountainous regions in Carbon County are susceptible to avalanches.
- **Previous Occurrences**: While specific incidents in Carbon County are not detailed, Utah's mountainous areas have a history of avalanches (according to utahavalanchecenter.org).
- **Vulnerability**: Backcountry skiers, snowboarders, and communities near steep slopes are at risk.
- **Duration**: Avalanches occur rapidly but conditions favorable for avalanches can persist for days or weeks.
- **Secondary Hazards**: Blocked transportation routes and secondary avalanches.

6.13.4.7 Lightning

Lightning is the electric discharge between clouds or from a cloud to the earth. In Utah, it causes the highest number of weather-related fatalities, occurring most frequently during the summer monsoonal flow in July and August. Lightning is also the primary cause of wildland fires in Utah. Between 2006 and 2015, Utah had 6 lightning-caused deaths. Over 40 million lightning strikes occur each year in the United States, with Utah experiencing 51 deaths and 131 injuries due to lightning since 1950. Lightning ranks as Utah's second deadliest natural hazard, after avalanches, particularly during the summer months of May, June, July, and August.

Severe thunderstorms usually last around 30 minutes and are typically only 15 miles in diameter, but all produce lightning, which is considered the "number one weather-related killer" in Utah. Thunderstorms can also lead to flash flooding from heavy rainfall, strong winds, hail, tornadoes, or waterspouts.

Approximately 25 million recorded lightning strikes occur in the US annually, with 200,000 cloud-to-ground lightning flashes in Utah alone. While most lightning occurs in the summer, it can strike at any time of year, causing an average of 47 deaths and numerous injuries in the US each year. Additionally, lightning ignites fires and disrupts utility, aviation, and transportation services, resulting in billions of dollars in associated losses.

- **Location and Extent**: Lightning occurs throughout Carbon County during thunderstorms, with intensity measured by Lightning Activity Levels (LAL):
    - LAL 1: Few or no thunderstorms, lightning activity not significant
    - LAL 2: Isolated thunderstorms, light lightning activity
    - LAL 3: Scattered thunderstorms, moderate lightning activity
    - LAL 4: Numerous thunderstorms, high lightning activity, frequent strikes
    - LAL 5: Dry thunderstorms with very high lightning activity, extreme fire weather risk
    - Higher elevation and exposed areas experience increased lightning strike frequency due to topographic effects.
- **Previous Occurrences**: Specific data on lightning incidents in Carbon County is limited.
- **Vulnerability**: Outdoor workers, hikers, and infrastructure are vulnerable.
- **Duration**: Lightning events are instantaneous, but storms can last several hours.

- **Secondary Hazards**: Wildfires and power outages.

6.13.4.8 Tornado

Tornadoes are defined as "a violently rotating column of air extending from a thunderstorm to the ground" (NWS 2015), often on the edge of the updraft or next to the air coming down from the thunderstorm. As air rushes into the vortex, its pressure lowers and cools the air, condensing it into water vapor in the funnel cloud, known as the vortex. The swirling winds of the tornado pick up dust, dirt, and debris from the ground, darkening the funnel cloud. While some tornadoes can have wind speeds greater than 250 miles per hour with a damage zone of 50 miles long and greater than 1 mile wide (NWS 2015), most tornadoes in Utah typically have winds less than 110 miles per hour, are no wider than 60 feet, and are on the ground longer than "a few minutes" (Brough et al. 2007).

A change in wind direction and an increase in wind speed, along with increasing height, create a horizontal spinning effect in the lower atmosphere, forming a tornado. The rising air within the thunderstorm updraft tilts the rotating air vertically, resulting in a tornado. The area of rotation is generally 2-6 miles wide and extends through much of the storm (NWS 2015).

Tornadoes are classified by the National Weather Service using the Enhanced Fujita Scale, which relates wind speed to damage to determine tornado intensity. The scale ranges from EF-0 to EF-5, with ratings based on the amount and type of wind damage (SPC 2014).

- **Location and Extent**: Tornadoes are rare in Carbon County but can occur.
- **Previous Occurrences**: Specific records of tornadoes in Carbon County are limited.
- **Vulnerability**: Structures, residents, and infrastructure are at risk during tornado events.
- **Duration**: Tornadoes typically last from a few minutes to over an hour.
- **Secondary Hazards**: Debris hazards and secondary structural collapses.

6.13.4.9 High Winds

High winds can occur independently of storms and are unpredictable in terms of timing and location. The Wasatch Front, consisting of five counties, has experienced high winds, resulting in the displacement of trailers, railroad cars, and small airplanes. Canyon winds, in particular, can bring gusts exceeding 100 mph through canyon mouths into populated areas, causing power outages and rendering homes and businesses unable to heat. These winds, strongest near canyon mouths, have damaged roofs, uprooted large trees and fences, and overturned vehicles. Carbon County has encountered numerous high wind episodes, leading to significant property damage, including the toppling of thousands of trees and the destruction of roofs and siding on hundreds of buildings.

- **Location and Extent**: High wind events affect all areas of Carbon County, measured using the Beaufort Wind Scale:
    - Force 6 (Strong Breeze): 25-31 mph, large branches move, difficulty using umbrellas
    - Force 7 (High Wind): 32-38 mph, whole trees in motion, effort needed to walk
    - Force 8 (Fresh Gale): 39-46 mph, twigs break off trees, walking difficult
    - Force 9 (Strong Gale): 47-54 mph, slight structural damage, roof shingles blown off
    - Force 10 (Storm): 55-63 mph, trees uprooted, considerable structural damage

    - Canyon areas experience wind channeling effects that can increase speeds by 25-50% above open terrain values.
- **Previous Occurrences**: Specific data on high wind events in Carbon County is limited.
- **Vulnerability**: Buildings, power lines, and trees are susceptible to wind damage.
- **Duration**: High wind events can last from several hours to days.
- **Secondary Hazards**: Power outages, wildfires, and transportation disruptions.

6.13.4.10 Hailstorms

Hailstorms typically occur when freezing water accumulates in layers around an icy core within thunderstorm clouds, usually between the months of May and September. Hailstones, formed through this process, can vary in size and cause significant damage by battering crops, structures, and automobiles. In cases where hailstorms are accompanied by high winds, the extent of damage can be even more severe.

- **Location and Extent**: Hailstorms occur throughout Carbon County during thunderstorms, with intensity measured by the TORRO Hail Storm Intensity Scale:
        - H0 (Hard Hail): 5mm diameter (pea-sized), minimal damage
        - H1 (Potentially Damaging): 5-15mm (pea to marble), slight damage to plants/crops
        - H2 (Significant): 10-20mm (marble to grape), significant damage to fruit, crops, vegetation
        - H3 (Severe): 20-30mm (grape to walnut), severe damage to crops, damage to glass/plastic
        - H4 (Severe): 25-40mm (walnut to pigeon egg), widespread glass damage, vehicle dents
        - H5 (Destructive): 30-50mm (pigeon egg to golf ball), wholesale destruction of glass, vehicle damage
        - H6 (Destructive): 40-60mm (golf ball to hen egg), bodywork damage to vehicles, some wooden panels split
    - Hail size and intensity can vary significantly within a single storm, with the largest hail typically occurring in the strongest updraft cores.
- **Previous Occurrences**: Utah has recorded multiple damaging hailstorms, though Carbon County is less frequently affected than northern regions of the state. Specific hailstorm records in Carbon County are limited.
- **Vulnerability**: Crops, vehicles, and rooftops are particularly susceptible to hail damage. Livestock and outdoor structures can also suffer from hail impacts.
- **Duration**: Hail events usually last only a few minutes but can occur multiple times during a storm.
- **Secondary Hazards**: Broken windows, roof damage, and infrastructure deterioration. Injury risks to people and animals caught outdoors.

6.13.5 Climate Change Considerations

Climate change is projected to alter severe weather patterns in Carbon County in several ways:

- **Heat Waves**: Models project an increase in frequency, intensity, and duration of extreme heat events, with potential for 5-10 additional days above 95°F annually by mid-century.

- **Cold Waves**: While average winter temperatures are expected to increase, climate variability may still produce cold wave events, potentially with greater impacts due to reduced community preparedness.
- **Lightning**: Research suggests a potential 12% increase in lightning strikes per 1°C of warming, which could increase wildfire ignition risk.
- **Strong Winds**: Changes in atmospheric circulation patterns may alter wind patterns and potentially increase the frequency of high wind events.
- **Precipitation Intensity**: Warmer air holds more moisture, potentially leading to more intense precipitation events when storms do occur, despite overall drier conditions.

County emergency management planning should prepare for these changing risk profiles, particularly the increased likelihood of extreme heat events and more variable precipitation patterns.

6.14 Infestation (I)

Note: This plan update includes hazard events through October 2024. No federal or state disaster declarations specific to infestation have been issued for Carbon County since the last plan update in 2018.

6.14.1 Overview & Profile

INFESTATION (I): Infestation of noxious weeds and trees, insects, and bird species can impact the health, safety, and welfare of the county and its residents.

Table 6.14.1.1 - Infestation Hazard Profile

Potential Magnitude	X	Negligible	Less than 10%
		Limited	10-15%
		Critical	25-50%
		Catastrophic	More than 50%
Probability		Highly Likely	
	X	Likely: *Based on historical occurrences and current environmental conditions, infestations in Carbon County have a "Likely" probability (50-89% chance) of occurring annually. Agricultural areas and wildland-urban interface zones are particularly susceptible.*	
		Possible	
		Unlikely	
Location	Agricultural lands, forested areas, areas of extreme drought, countywide.		
Seasonal Pattern or Conditions	Summer months related to drought		
Duration	Months to years		

Analysis Used	Reviewed information provided by UGS, DEM, AGRC. Utah Forestry Fire and State Lands, Utah Forest Service, Utah State University Extension Service, and local input.

6.14.2 Location & Extent

An organization called Skyline Cooperative Weed Management Area (Skyline SWMA) is a group of landowners and government agencies that meet monthly to identify and prioritize projects in the county. The Carbon and Emery Counties have joined and collaborated to fight against weeds while projects take place on public and private lands. The parent to this group is the Utah Weed Control Association (UWCA) with a mission of professionals that implement the best weed management practices available with today's technology. The Department of Agriculture—Forest Service for this area is Region 4, where their mission includes the following:

- Detection and evaluation of disease and insect situations
- Management guidance through field visits, publications and training
- Participating in forest planning and forest plan implementation
- Participating in interdisciplinary teams
- Technical and financial assistance for insect and disease suppression, prevention and/or restoration projects
- Developing or applying modern technology for management of forest insects and diseases

Source: Region 4, Utah Weed Control Association

6.14.2.1 Hazard History

While no formal disaster declarations have been made for infestations in Carbon County during the 2018-2024 period, the county has experienced:

- Ongoing Mormon cricket populations affecting agricultural areas in 2019-2020.
- Increased grasshopper activity reported by local agricultural extension offices in 2021.
- Noxious weed proliferation, particularly cheatgrass, affecting wildfire risk areas throughout the reporting period.

These infestations have been managed through regular county and state agricultural extension programs without rising to the level of state or federal declarations.

6.14.3 Vulnerability Analysis

Potential loss estimates are difficult to calculate for such a hazard. There are several sources as the above paragraphs describe to help detect and evaluate insect and foliage diseases; however, only solo reports have been completed during the last ten years. While these reports give specific information about an insect or foliage disease it does not give future calculations due to the unpredictability of such occurrences. Future analysis for this region may be based on historical events to grasp an understanding of this type of hazard.

Infestation impacts vary across participating jurisdictions. T he potential impacts include:

- Damage to vegetation affecting parks, landscapes, and natural areas.
- Increased wildfire risk due to tree mortality in forested areas.
- Economic losses in agricultural and timber production areas.

- Impacts on watershed health and water quality.
- Costs for treatment and management of affected areas.
- Threats to public health from disease vectors in severe cases.
- Ecological disruption affecting wildlife habitats and biodiversity.

Jurisdiction-specific impacts and mitigation approaches are detailed in Section 7.

Figure 6.14.3.1 Acres Affected by Bark Beetles Reported in the 2015 Survey

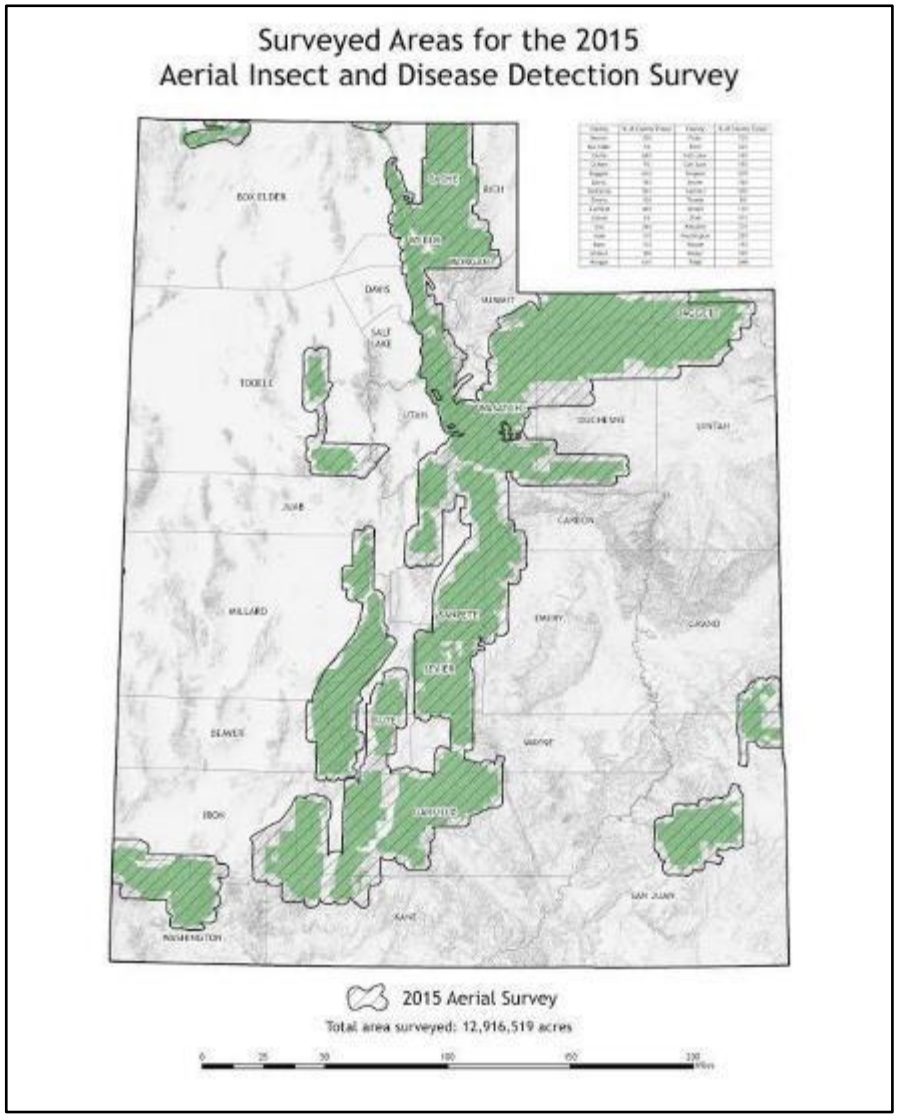


Table 6.14.3.2 - Trees Killed and Acres Affected by Bark Beetles Reported in the 2015 Survey in Carbon County

Tree Type	Number of Trees	Number of Acres
Mountain Pine Beetle	10 Trees	5 Acres
Douglas Fir Beetle	40 Trees	20 Acres
Spruce Beetle	0 Trees	0 Acres

Pinon Engraver	0 Trees	0 Acres
Fir Engraver Beetle	0 Trees	0 Acres
Subalpine Fir	1,650 Trees	775 Acres

Table 6.14.3.3 - Number of Acres Impacted by Defoliators and other Agents in 2015

Cause	Number of Acres
Western Spruce Budworm	131 Acres
Unknown Aspen Defoliant	0 Acres
Aspen Decline	55 Acres

Utah Forest Insect and Disease Conditions Report 2015, State of Utah Department of Natural Resources, Division of Forestry, Fire, and State Lands

6.14.4 Climate Change Considerations

Climate change is projected to significantly influence infestation patterns in Carbon County through several mechanisms:

- Warmer winter temperatures may reduce natural die-off of pest populations, leading to larger spring populations.
- Extended growing seasons may allow for additional pest reproduction cycles each year.
- Drought conditions may stress native vegetation, making them more susceptible to insect damage.
- Changes in precipitation patterns may favor invasive plant species that outcompete native vegetation.
- Shifting temperature zones may allow new invasive species to establish in the region.

Local agricultural stakeholders have already reported earlier seasonal emergence of certain pest species, consistent with warming trends. Future mitigation efforts should incorporate monitoring programs to identify emerging infestation threats as climate conditions continue to change.

7.0 Community Sections

NOTE 1: Action Status Categories

For clarity and consistency across all participating jurisdictions, mitigation actions in this plan are organized into three distinct categories:

- ***Completed Actions**: Actions from the previous plan that have been fully implemented and require no further work.*
- ***Ongoing Actions**: Actions that are currently in progress, continuous in nature, or require regular implementation.*
- ***New/Proposed Actions**: New actions identified in this plan update that have not yet begun implementation.*

Similarly, throughout this plan, the following standardized status designations are used to clearly indicate the implementation status of each mitigation action:

- *"Completed" - Actions that have been fully implemented prior to this plan.*
- *"In Progress" - Actions that have been initiated and are currently being implemented.*
- *"Planned" - Actions that have been approved but implementation has not yet begun.*
- *"Ongoing" - Continuous activities that have no specific end date.*

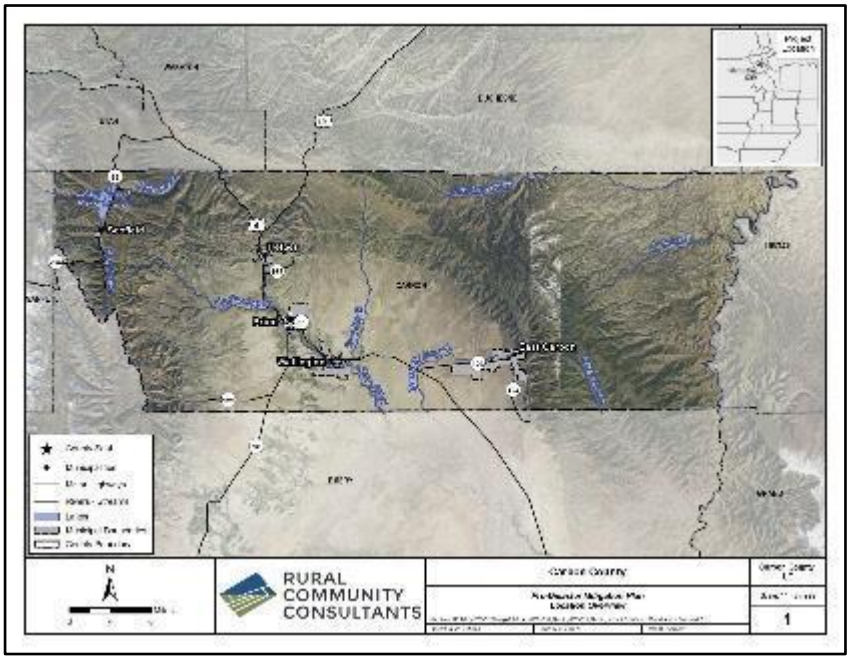
For the purposes of the 2024-2029 planning cycle, only actions designated as "In Progress," "Planned," or "Ongoing" are counted toward meeting the requirement for one or more actions per jurisdiction per identified hazard. All mitigation actions for the 2024-2029 planning cycle will be tracked and updated regularly according to the plan maintenance procedures described in Section 5.

7.1 Carbon County

7.1.1 Geographic & Physiographic Background

Carbon County is located in the central part of the state and encompasses a diverse geographic and physiographic landscape. The county is bordered by natural landmarks such as the Wasatch Plateau to the west, which offers picturesque mountain ranges and scenic vistas. The county is also defined by the expansive desert region, including the San Rafael Swell and the Scenic Nine Mile Canyon.

The area is renowned for its unique geology, with formations like the San Rafael Reef displaying mesmerizing multicolored sandstone cliffs and canyons. The



Map illustrating drainage basins in the Carbon County area (click here for original).

topography of Carbon County features a mix of rugged mountains, deep canyons, and rolling plains, providing a diverse range of outdoor recreational opportunities.

7.1.2 Floodplains

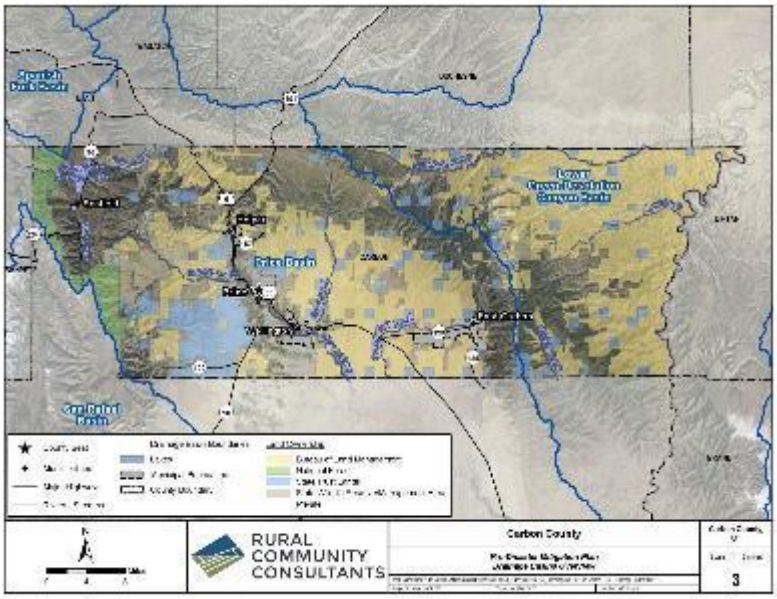
Carbon County is not characterized by extensive floodplains like some other regions due to its topography and geographic features. The county's terrain is predominantly mountainous. While there are no major floodplains in Carbon County, there are areas near waterways where occasional localized flooding can occur during periods of heavy rainfall or snowmelt.

The Price River, the primary waterway in Carbon County, has a limited floodplain, but its impact is generally less pronounced compared to other rivers in flatter regions. The floodplain along the Price River is relatively narrow and is mostly found in certain sections where the river meanders through lower-lying areas.

7.1.3 Major Rivers

Carbon County contains diverse waterways and rivers. Here is a brief summary of some of the major features:

1. Price River: The Price River is the primary waterway in Carbon County. It flows through the county from its headwaters in the Wasatch Plateau to the south, passing through the city of Price. The river provides water for agricultural and industrial purposes and offers recreational opportunities such as fishing and boating.
2. San Rafael River: The San Rafael River is another important waterway in Carbon County. It originates in the San Rafael Swell to the west and meanders eastward through the county. The river is known for its scenic beauty and is a popular spot for river rafting and fishing.
3. Green River: While not entirely within Carbon County, the Green River plays a significant role in the county's water resources. It forms the county's eastern border and is a major tributary of the Colorado River. The Green River offers opportunities for fishing, boating, and other recreational activities.



Map illustrating drainage basins in the Carbon County area (click here for original).

4. Huntington Creek: Huntington Creek is a smaller waterway that flows through Carbon County, originating in the Wasatch Plateau and joining the Price River near the town of Huntington. The creek is popular for fishing and is stocked with trout.
5. Scofield Reservoir: Although not a river or waterway in the traditional sense, Scofield Reservoir is a prominent water feature in Carbon County. It is a man-made reservoir located near the town of Scofield, formed by the damming of the Price River. The reservoir is a popular destination for fishing and boating.

7.1.4 Geographic Constraints

Carbon County faces various geographic constraints that shape its landscape and development. The county is characterized by rugged and mountainous terrain, with the Wasatch Range and the Book Cliffs prominently impacting its geography. These physical features present challenges for infrastructure development, including the construction of roads, utilities, and other necessary facilities. The mountainous terrain also limits the availability of flat land for agricultural purposes, requiring careful land management and optimization of existing arable areas.

Additionally, the county's arid climate and limited water resources pose constraints on water availability for residential, industrial, and agricultural uses.

7.1.5 Wetlands

Carbon County is characterized by a limited presence of wetlands due to its arid climate and mountainous topography. While wetlands are not as prevalent compared to other regions, there are still a few scattered throughout the county. These wetlands can be found in low-lying areas, near water sources such as rivers, streams, and springs. They often occur in small patches and tend to support unique plant and animal species adapted to these specialized ecosystems.

7.1.6 Farmlands

Farmland in Carbon County varies in type, quality, and viability due to the region's diverse geography and soil composition. While the county has some areas of fertile agricultural land, it also encompasses arid regions and mountainous terrain.

The USDA designates certain parts of Carbon County as prime agricultural land, which signifies their suitability for sustained crop production. However, the overall availability of prime agricultural land in the county is limited.

Soil quality is an essential factor for successful farming, and the Natural Resources Conservation Service (NRCS) measures soil characteristics to assess fertility, drainage, erosion potential, and other factors affecting agricultural viability. The soil quality in Carbon County can vary, and some areas may require careful management practices to optimize productivity.

Due to the challenging climate and limited prime agricultural land, the employment in agricultural activities in Carbon County is relatively modest compared to other sectors of the local economy.

7.1.7 Open Spaces

The county contains an abundance of public lands managed by various regulating agencies. The U.S. Forest Service oversees a significant portion of the public lands, including parts of the Manti-La Sal National Forest. and Ashley National Forest. The Bureau of Land Management (BLM) also manages extensive areas, including the Price Field Office, which covers diverse landscapes ranging from forests to deserts. These public lands provide residents and visitors with recreation amenities as well as opportunities for natural resource extraction.

7.1.8 Sensitive Species

Carbon County is home to a diverse array of plant and animal species, including several sensitive species that require conservation efforts. Carbon County is home to several protected areas that contribute to the conservation of these sensitive species and their habitats.

Plants	Animals	Protected Areas
Dwarf bear-poppy (Arctomecon humilis)	Mexican spotted owl (Strix occidentalis lucida)	Desolation Canyon Wilderness (BLM)
Graham's penstemon (Penstemon grahamii)	Colorado pikeminnow (Ptychocheilus lucius)	Manti-La Sal National Forest
Tiehm's buckwheat (Eriogonum tiehmii)	Bonneville cutthroat trout (Oncorhynchus clarkii utah)	Price River Wildlife Management Area (UDWR)
Utah serviceberry (Amelanchier utahensis)	Pika (Ochotona princeps)	Nine Mile Canyon (BLM)
		Swasey's Cabin Recreation Site (BLM)

7.1.9 Hazardous Waste Sites

Carbon County has a few hazardous waste sites, or contaminant sources. Most of these sources are in close proximity to industrial areas. Construction through potential contaminant sources may add health and safety concerns and affect construction budget expenditures. The impact of these sites on transportation facilities will need to be addressed during the design and construction phase of each highway or transit project.

There are potentially five types of contaminant sources: underground storage tanks, Title 3 sites, Toxic Release Inventory (TRI) 1990 sites, Resource Conservation and Recovery Act (RCRA) sites and Comprehensive Environmental Response Compensation and Liability Act (CERCLA) sites.

The Comprehensive Environmental Response, Compensation and Liability Inventory System (CERCLIS) database documents hazardous waste sites where a release or potential threatened release has been investigated. These sites are further defined as a location that has been reported to the Environmental Protection Agency and where it is probable that some environmentally hazardous materials are present.

Also, the State of Utah Division of Solid and Hazardous Waste maintains databases for underground storage tank facilities, Leaking Underground Storage Tank (LUST) sites, and RCRA facilities.

7.1.10 Groundwater

Carbon County relies on groundwater as a crucial water resource obtained from underground aquifers. The quality and quantity of groundwater in the county can be influenced by various factors. Potential issues related to groundwater include contamination risks from industrial activities, agricultural practices, and urban development.

Additionally, ensuring sustainable use and avoiding over-extraction are important considerations to maintain the long-term availability of groundwater resources. Monitoring and implementing appropriate safeguards are a crucial initiative of the region’s local governments and special districts.

7.1.11 Demographic Profile and Employment

The significance of knowing the population of a county will give direct insight into the impact a natural hazard may have on the local community residents. The county population demographics provide data regarding population age, education, veteran status and spoken language. Educational attainment and first major tables are calculated for the population over the age of 25.

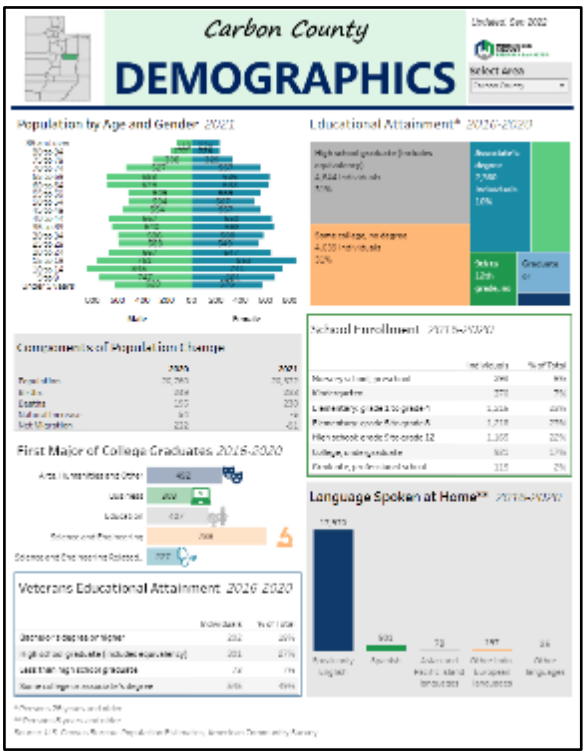


Figure 7.1.11 - Carbon County, Utah Demographic Profile (2022). Source: Utah Department of Workforce Services, (2024). https://jobs.utah.gov/wi/data/library/demographic

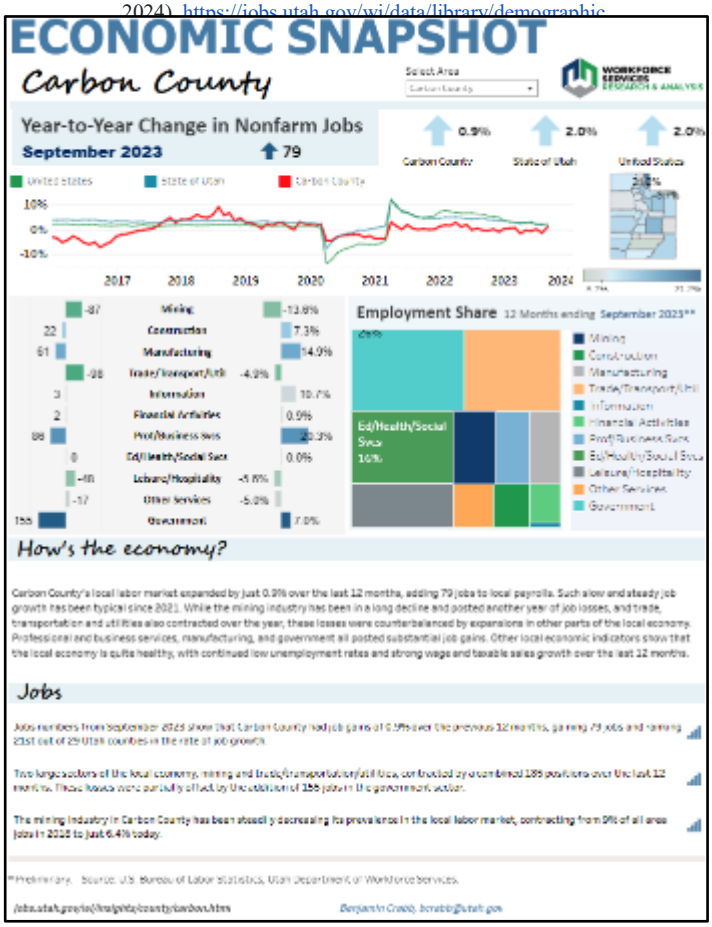
7.1.11.1 Employment Trends

Over the last five years, Carbon County has experienced notable employment trends, influenced by various factors. One significant event that had a profound impact on the local economy was the closure of several local coal mines in the region. near Helper City. These closures resulted in job losses and a decline in the coal industry's contribution to employment.

Carbon County's local labor market expanded by just 0.9% over the last 12 months, adding 79 jobs to local payrolls. Such slow and steady job growth has been typical since 2021. While the mining industry has been in a long decline and posted another year of job losses, and trade, transportation and utilities also contracted over the year, these losses were counterbalanced by expansions in other parts of the local economy.

One positive aspect in the area is the presence of regionally important transmission lines. These infrastructure assets provide opportunities for the development of renewable energy projects, attracting investments and potentially creating new employment prospects in the clean energy sector. However, it should be noted that if the existing power facilities in the county were to close, it could have a high negative impact on the local economy.

Professional and business services, manufacturing, and government all posted substantial job gains. Other local economic indicators show that the local economy is quite healthy, with continued low unemployment rates and strong wage and taxable sales growth. Additionally, community leaders and stakeholders have been actively involved in pursuing economic diversification strategies. These efforts include attracting new businesses, supporting entrepreneurship, and leveraging the county's natural resources, such as its outdoor recreation opportunities, to boost tourism and



related industries. The expansion of the university, coupled with efforts to attract new businesses and promote tourism, signals a commitment to creating a more resilient and prosperous future for the county and its residents.

7.1.11.2 Household Size

The trends in household size in Carbon County have shown some notable changes in recent years based on census data. According to the most recent census figures, there has been a gradual decrease in average household size in the county. In the previous decade, the average household size was around 2.8 individuals. However, the latest census data indicates a decrease in average household size, with the number now estimated to be closer to 2.5 individuals per household. This trend suggests a shift toward smaller households, which could be attributed to various factors, including changing demographics, economic conditions, and cultural shifts.

7.1.11.3 Technology

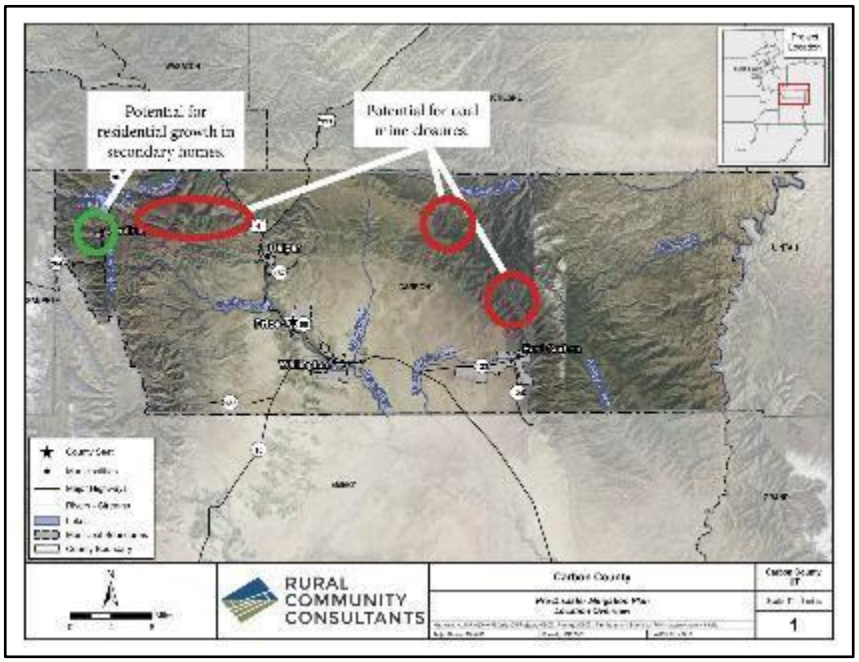
As technology develops, its influence on community development touches every aspect dramatically. Technological influences are significant. This report will only very briefly mention a few. Technology advances in communications have made it possible for telecommuting, reduced the requirement of a daily commute to a workplace; increased availability of reliable public transportation has changed where people live and work; advances in agriculture have allowed more food to be produced on less land; and technological advances allow developments on marginal sites.

7.1.12 Development Trends

7.1.12.1 Economic Growth

Over the past five years, Carbon County has experienced significant development trends closely tied to its local economy, particularly the energy sector. The county's development has been shaped by the challenges and opportunities arising from the transitioning energy landscape. With the decline in the coal industry, there has been a shift towards diversification and exploring alternative sources of economic growth.

In recent years, Carbon County has made efforts to attract new industries and promote economic diversification. However, the future development of Carbon County remains heavily dependent on the local energy sector. Should the existing power facilities close or face challenges, it could have a significant negative impact on the county's development prospects.



Areas of expected change in Carbon County 2023-2028 (click here for original).

The county's regional economy has historically been reliant on industries such as coal mining, with major employers including coal mines and associated operations. However, recent efforts have focused on diversifying the economy, exploring new energy projects and promoting outdoor tourism. The County is expecting growth around Scofield as second homes/cabins.

7.1.12.2 Reclamation of Industrial Land

Efforts are underway in Carbon County to reclaim industrial land and repurpose it for new economic activities. The Carbon County Industrial Site Reclamation Project (i.e. Horizon Coal Mine project) focuses on restoring abandoned mines and processing facilities, involving environmental assessments, remediation, and infrastructure development. Collaborative efforts between government, community organizations, and private investors explore innovative uses for the reclaimed land, such as renewable energy projects and manufacturing facilities.

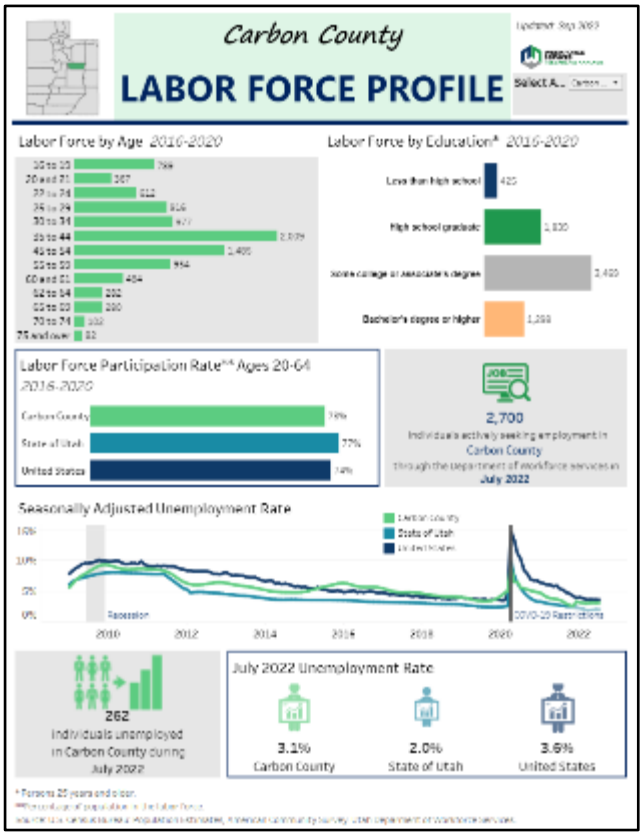


Figure 7.1.12.3 - Carbon County, Utah Largest Employers and Labor Force Profile from the Department of Workforce Services (2021)

7.1.13 Development Constraints & Opportunities

7.1.13.1 Historical Development Layout

The historical development layout of communities in Carbon County reflects the county's rich mining heritage and the transportation networks that supported its growth. The layout often followed a linear pattern, with towns and settlements situated along major transportation routes, such as rail lines and highways. Many of

these communities, including Price, Helper, and Wellington, emerged as coal mining towns in the late 19th and early 20th centuries.

The development layout of the towns in Carbon County typically consisted of a central business district surrounded by residential areas, with mining facilities and infrastructure located nearby. Over time, as the mining industry declined, the communities diversified their economies and expanded beyond their original mining-focused layouts.

Today, the historical development layout remains evident in the architecture, street patterns, and remnants of mining infrastructure that can be found throughout the county, serving as a testament to Carbon County's unique historical heritage.

7.1.13.2 Transportation

The transportation network in Carbon County consists primarily of state-owned highways and off-road routes. The most significant transportation artery in the county is U.S. Route 6, which serves as the main highway connecting various communities within Carbon County to neighboring counties and regions. This highway plays a critical role in supporting the county's economy by facilitating the transportation of goods, services, and commuters.

While U.S. Route 6 is essential for the county's transportation needs, there is a potential risk due to its singular nature. As the only major highway serving Carbon County, any disruptions or closures can significantly impact the flow of traffic, commerce, and emergency services. Such risks become more apparent during inclement weather, accidents, or other unforeseen events that may render the highway temporarily impassable.

In addition to the state highways, Carbon County has an extensive network of off-road routes, including dirt roads and trails, which are vital for accessing recreational areas, outdoor activities, and exploring the county's natural beauty.

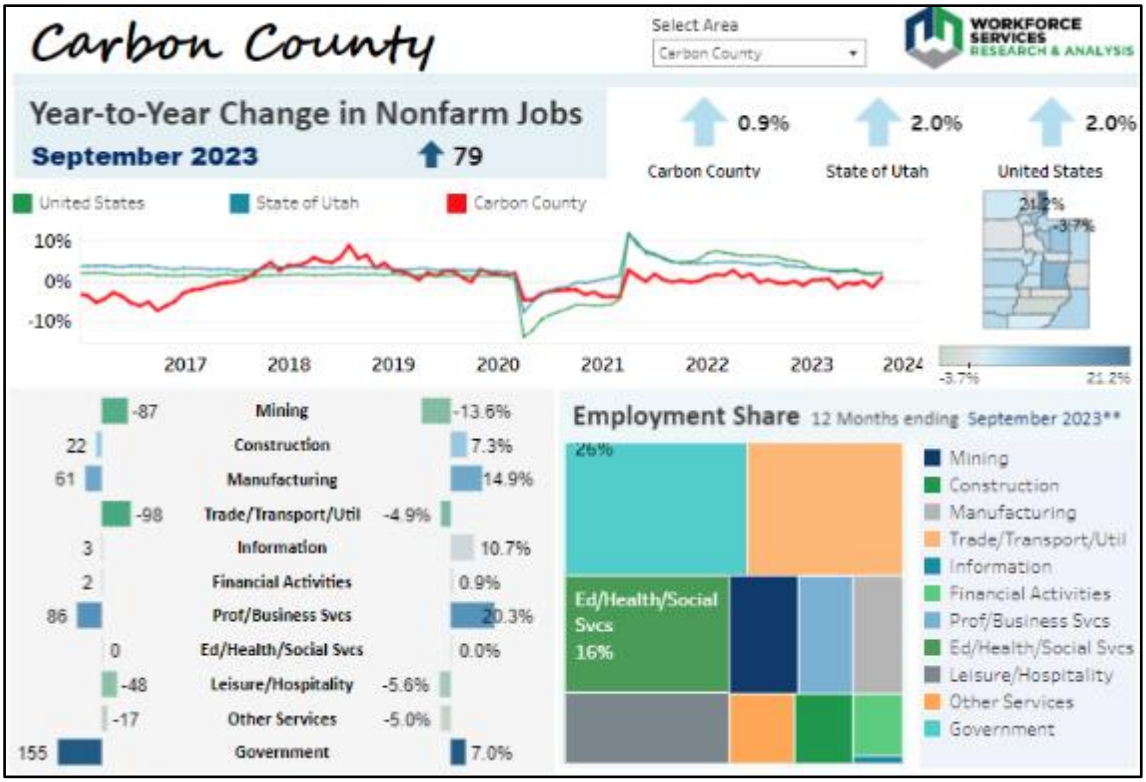


Figure 7.1.13 - Carbon County, Change in Jobs (2022)
Source: Utah Department of Workforce Services (2024).

7.1.13.3 Economic Constraints

- Economic Dependence: Carbon County's heavy reliance on the energy sector, particularly coal mining, poses a constraint to future development. The declining coal industry and shifting energy landscape require the county to diversify its economy and explore alternative industries to reduce vulnerability to economic downturns.
- Limited Water Resources: The arid climate and limited water resources present a significant constraint for development. Balancing water availability for residential, agricultural, and industrial needs while ensuring sustainability and responsible water management is crucial for future growth.
- Geographic Constraints: Carbon County's mountainous terrain, slopes, and fault lines impose limitations on development. These constraints impact infrastructure construction, transportation, and land availability for various purposes, necessitating careful planning and consideration of geological hazards.

7.1.14 Economic Opportunities

- Outdoor Recreation and Tourism: Carbon County's scenic beauty, open spaces, and access to national forests offer opportunities for the expansion of outdoor recreation and tourism. Promoting activities like hiking, camping, hunting, and exploring the county's natural attractions can attract visitors, stimulate the local economy, and create employment opportunities.
- Educational Expansion: The presence of higher education institutions, such as Utah State University Eastern, provides an opportunity for educational expansion. Enhancing educational programs and partnerships can support workforce development, foster innovation, and attract students and faculty to the area.

7.1.15 Community Buildings & Infrastructure Status

As the County continues to see substantial growth, they have focused much attention on the improvements of critical infrastructure. The County maintains the utmost standards of public safety along with current construction methods and seismically sound structures. At the time of construction, all city buildings were designed under current building, fire, and seismic codes. In the future we will be looking at getting emergency generators for the County Building, Police Station. In order to help will better communication capabilities within the county.

The goals of the County moving forward demonstrate their commitment to maintaining essential infrastructure and the safety of its residents well into the future. See Appendix F for a complete list of critical facilities.

7.1.16 County-Specific Hazards & Vulnerabilities

Carbon County faces unique hazard risks due to its diverse geography and development patterns:

- **Earthquake:** The county has multiple fault lines identified primarily in the western side, with historical seismic activity recorded countywide. Critical infrastructure including Highway 6 (the main transportation corridor), water transmission lines in Price Canyon, and numerous county facilities constructed before modern seismic codes are at significant risk. Approximately 35% of residential structures in unincorporated areas were built prior to 1975 and modern seismic standards, creating vulnerability particularly in older neighborhoods. A major earthquake could disrupt essential services, damage transportation routes, and require extensive emergency response across the county's dispersed communities.

- **Flooding:** The Price River and its tributaries, including Coal Creek, present significant flood risk to multiple communities. Approximately 2,401 parcels intersect dam inundation zones, with development in the Price River floodplain between Price and Helper experiencing the highest risk. Water transmission pipelines in Price Canyon, water treatment facilities at Castlegate Narrows, and transportation infrastructure at the US6/SR191 junction are particularly vulnerable. Historical flooding has caused extensive damage to homes, roads, and agricultural lands, with economic impacts exceeding $500,000 during major events.
- **Landslide:** The Bookcliff Mountain range presents the most significant landslide threat, with historical landslide activity documented in multiple locations. Price Canyon has unstable slopes that threaten US6, the Price River, and critical water/sewer pipelines. Highway infrastructure, particularly along US6 in Price Canyon, is highly vulnerable with approximately 9 miles of US highway and 1.01 miles of local roads affected. The county's water transmission systems, including the Price Waterline in Price Canyon (13 miles), face potential disruption from landslide events with replacement costs estimated at $15 million.
- **Wildfire:** Extensive wildland-urban interface areas along the Wasatch Plateau and Book Cliffs create significant wildfire vulnerability. Approximately 638 residential units valued at over $50 million are in extreme risk areas, with an additional 954 residential units valued at $75 million in high-risk zones. Critical infrastructure exposed to wildfire risk includes 41.57 miles of local roads, 46.31 miles of state highways, and 143.93 miles of power lines. Communities developed along canyon mouths face heightened risk of post-fire debris flows and flash flooding.
- **Problem Soils:** The county contains notable quantities of compacted Mancos shale and alkali soils, which can damage infrastructure through expansion, contraction, and dissolution. Roads built on problem soils face increased maintenance costs and potential failure during precipitation events, while structures built on expansive soils experience foundation damage during wet/dry cycles. Agricultural lands affected by problem soils face reduced productivity and increased irrigation requirements.
- **Dam Failure:** Scofield Reservoir Dam and Grassy Trail Reservoir Dam present the most significant dam failure risks. Approximately 2,401 parcels intersect dam inundation zones, with communities along the Price River corridor facing the greatest vulnerability. Critical infrastructure potentially affected includes water treatment facilities, transportation routes, emergency response facilities, and utilities serving thousands of residents.
- **Drought:** The county's arid climate and reliance on limited water sources creates vulnerability to prolonged drought conditions. Agricultural operations, which form an important economic sector, face reduced yields and potential economic losses during water shortages. Municipal water systems serving all communities rely heavily on surface water supplies that diminish during drought periods, potentially affecting both residential and commercial users throughout the county.
- **Severe Weather:** The county's diverse topography creates varying vulnerability to severe weather events. Mountain communities face winter isolation, heavy snow loads, and avalanche risk, while valley communities experience extreme temperature fluctuations, high winds, and thunderstorm impacts. Transportation systems, particularly US6 through Price Canyon, experience frequent weather-related closures, affecting emergency response capabilities, commerce, and daily activities.
- **Infestation:** Forest areas face bark beetle and other forest pest vulnerabilities that increase wildfire risk through tree mortality. Agricultural lands experience periodic grasshopper infestations that can significantly reduce crop yields and economic productivity. Watershed health can be compromised by invasive species affecting approximately 775 acres of critical subalpine forest areas identified in forest health surveys.

7.1.17 Carbon County Vulnerable Populations

Vulnerable populations are inherently more vulnerable to potential disaster hazards. The interactions between these populations and the natural hazards posing the highest potential risk to Carbon County are listed below with suggestions for specific mitigation actions.

1. Earthquake:
    - Populations Vulnerable: People over 65 years old and people with disabilities are particularly vulnerable during earthquakes due to mobility issues and potential difficulties in evacuating.
    - Mitigation Actions:
        - Retrofitting homes and buildings to withstand seismic activity, especially for older adults and individuals with disabilities.
        - Implementing early warning systems and providing accessible evacuation routes and shelters.
        - Conducting outreach and education programs to raise awareness among vulnerable populations about earthquake preparedness and safety measures.
2. Flood:
    - Populations Vulnerable: People living in areas prone to flooding, including those with lower incomes paying more than 30% of their household income for rent expenses, are vulnerable due to potential displacement and loss of property.
    - Mitigation Actions:
        - Implementing floodplain management measures, such as zoning regulations and land use planning, to mitigate flood risk in vulnerable areas.
        - Providing financial assistance and affordable insurance options for residents in flood-prone areas to help with relocation or property protection measures.
        - Developing community-based flood preparedness and response plans that include specific considerations for vulnerable populations, such as evacuation assistance and temporary housing options.
3. Landslide:
    - Populations Vulnerable: People living in areas with steep slopes or unstable terrain are at higher risk of landslides, including individuals with disabilities who may face challenges evacuating quickly.
    - Mitigation Actions:
        - Conducting geotechnical assessments to identify landslide-prone areas and implementing measures such as slope stabilization and erosion control.
        - Establishing early warning systems and evacuation plans for communities at risk of landslides.
        - Providing resources and assistance for vulnerable populations to retrofit homes and improve landslide resilience, such as slope reinforcement and relocation options.
4. Problem Soils:

- Populations Vulnerable: Farmers and people living in areas with problematic soils, such as expansive clay or highly erodible soils, may face structural damage to their homes during soil-related hazards.
- Mitigation Actions:
    - Implementing soil stabilization measures, such as drainage systems and vegetation planting, to mitigate the effects of problem soils on infrastructure and property.
    - Providing technical assistance and financial incentives for homeowners to conduct soil assessments and implement appropriate mitigation measures.
    - Developing building codes and regulations that address soil-related hazards and ensure the resilience of structures, particularly for vulnerable populations living in high-risk areas.

5. Wildfire:
    - Populations Vulnerable: People living in forest-adjacent areas, including older adults and individuals with disabilities, and people with respiratory conditions may face challenges evacuating quickly and accessing emergency services.
    - Mitigation Actions:
        - Creating defensible space around homes and implementing vegetation management strategies to reduce wildfire risk in residential areas.
        - Developing community wildfire protection plans that include evacuation routes, shelter locations, and communication strategies tailored to vulnerable populations.
        - Providing outreach and education programs to raise awareness about wildfire preparedness and evacuation procedures among at-risk populations.
6. Infestation:
    - Populations Vulnerable: People living in areas prone to infestations, such as termites or pests, may experience property damage and health hazards, affecting individuals with disabilities who may have limited ability to address infestation issues.
    - Mitigation Actions:
        - Implementing integrated pest management strategies to prevent and control infestations through non-chemical and environmentally friendly methods.
        - Providing financial assistance and support for home maintenance and repairs to address structural vulnerabilities and prevent infestations.
        - Conducting community outreach and education campaigns to promote proper sanitation practices and pest prevention measures, particularly among vulnerable populations.
7. Dam Failure:
    - Populations Vulnerable: People living downstream of dams are at risk of flooding and displacement in the event of a dam failure, including those with lower incomes paying a significant portion of their income for rent.
    - Mitigation Actions:

        - Implementing dam safety inspections and maintenance programs to identify and address potential failure risks, including emergency preparedness and response plans for downstream communities.
        - Developing floodplain management measures and evacuation plans for at-risk areas downstream of dams.
        - Providing financial assistance and support for residents to improve flood resilience and relocate to safer areas if necessary, particularly for vulnerable populations living in high-risk zones.

8. Severe Weather:
    - Populations Vulnerable: People with disabilities and older adults may face challenges during severe weather events, such as hurricanes or tornadoes, due to mobility issues and limited access to emergency services.
    - Mitigation Actions:
        - Establishing accessible emergency shelters and transportation options for individuals with disabilities and older adults during severe weather events.
        - Developing communication systems and emergency alerts that are accessible to individuals with disabilities, including visual and auditory impairments.
        - Conducting outreach and education campaigns to raise awareness about severe weather preparedness and evacuation procedures among vulnerable populations

For historically underserved populations, the mitigation actions should prioritize equitable access to resources, services, and decision-making processes. This may include:

- Ensuring that mitigation measures are inclusive and address the specific needs and vulnerabilities of historically underserved communities.
- Engaging with community leaders, advocacy groups, and stakeholders from historically underserved populations to incorporate their perspectives and priorities into mitigation planning efforts.
- Allocating resources and funding to support initiatives that reduce disparities and enhance resilience among historically underserved populations, such as affordable housing programs, economic development initiatives, and cultural competency training for emergency responders.

- Monitoring and evaluating the effectiveness of mitigation actions to ensure equitable outcomes and address any gaps or disparities in implementation and impact.

7.1.17.1 Community Resilience

Communities in Carbon County, UT have a Relatively Moderate ability to prepare for anticipated natural hazards, adapt to changing conditions, and withstand and recover rapidly from disruptions when compared to the rest of the U.S. The data states that 42% of U.S. counties have a higher Community Resilience and 48% of counties in Utah have a higher Community Resilience.

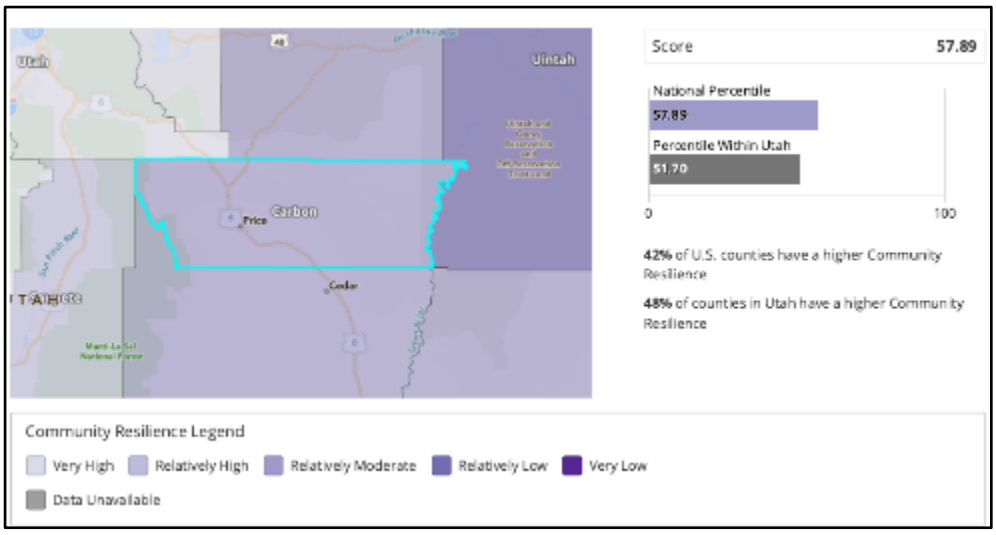


Figure 7.1.16.1 -Community Resilience for Carbon County, UT is Relatively Moderate.
Source: FEMA's National Risk Index 2024.

7.1.17.2 Social Vulnerability

Social vulnerability measures the susceptibility of social groups to the adverse impacts of natural hazards, including disproportionate death, injury, loss, or disruption of livelihood. The data from the FEMA database shows that social groups in Carbon County, UT have a relatively moderate susceptibility to the adverse impacts of natural hazards when compared to the rest of the U.S. The data states that 59% of U.S. Counties have a lower Social Vulnerability index score. However, 93% of counties in Utah have a lower Social Vulnerability index score, indicating a need to ensure greater social risk mitigation to vulnerable populations.

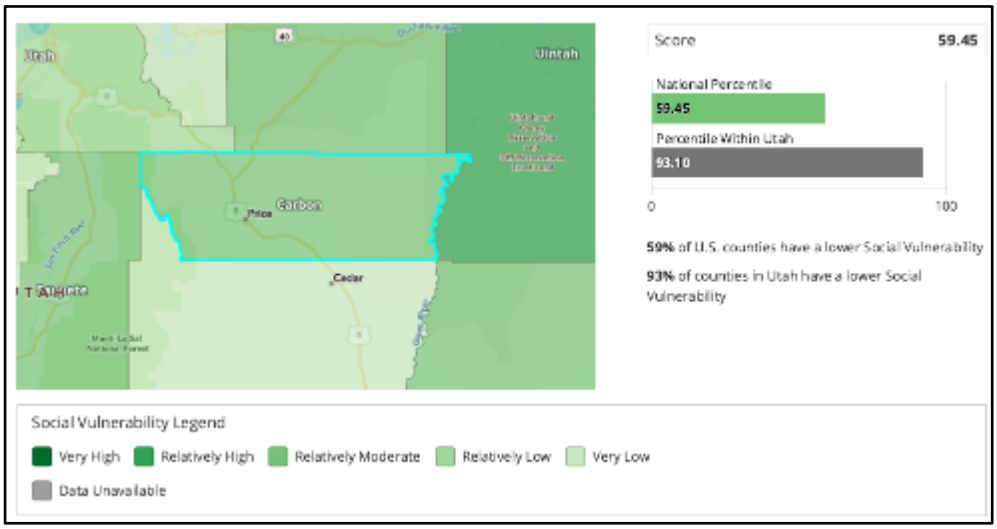
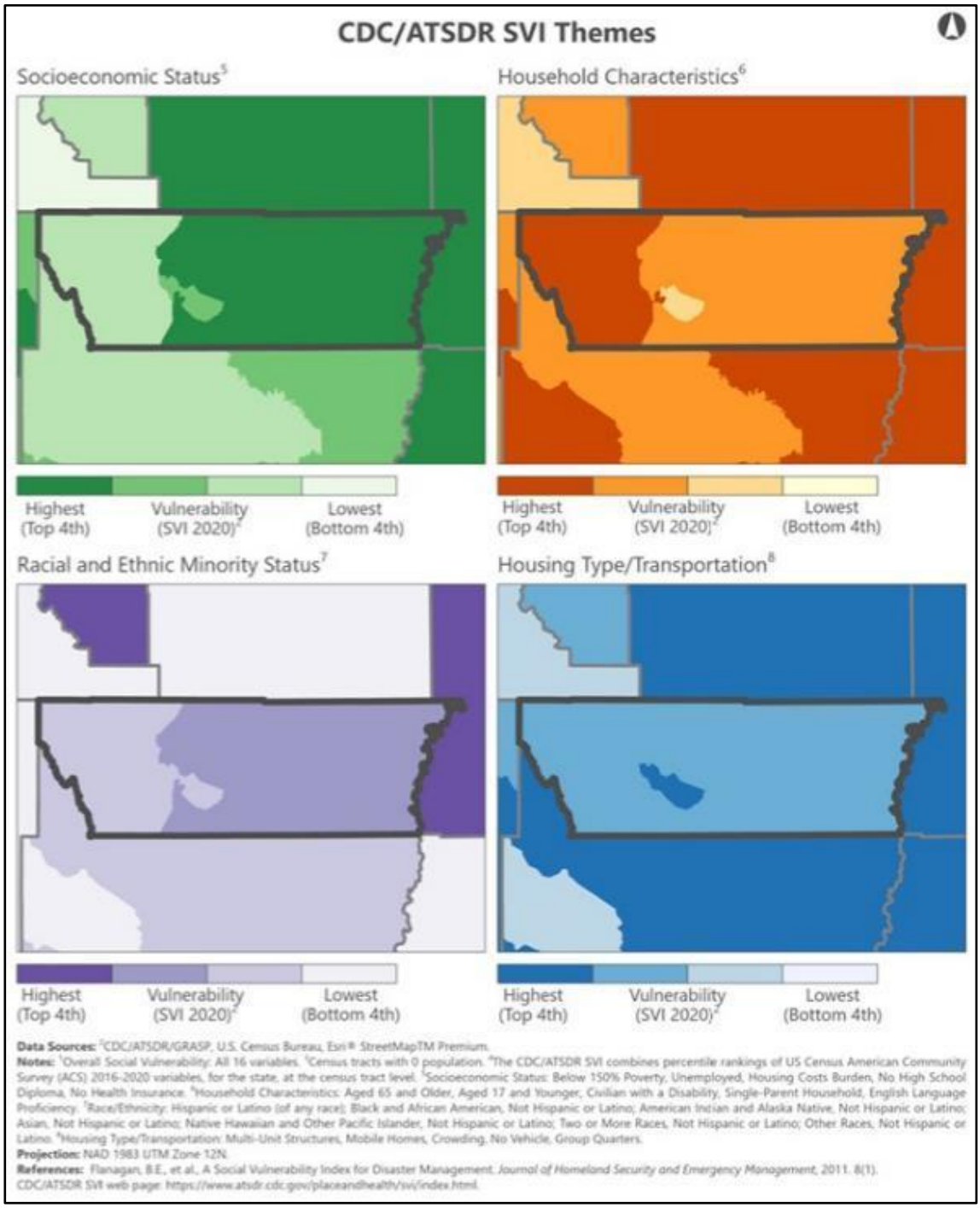


Figure 7.1.16.2 - Social Vulnerability for Carbon County, UT is Relatively Moderate.
Source: FEMA's National Risk Index 2024

By considering the intersectionality of hazards and vulnerable populations, and implementing targeted mitigation actions, cities can reduce risk and build resilience for all residents, including historically underserved communities.



These social vulnerability indices refer to the area's capacity to prepare for and respond to the stress of hazardous events. Data presented groups sixteen census-derived factors into four themes. (Source: CDC/ATSDR).

7.1.18 Changes Since 2018 Plan

Since the 2018 plan, Carbon County has experienced several significant changes affecting hazard vulnerability:

1. Population and Demographics:

a. Overall population declined by approximately 3% between 2018-2023.
b. Aging population trend with median age increasing from 34.2 to 36.8.
c. Shift from traditional mining employment to more diverse economic sectors.

2. Land Use Changes:
   a. Conversion of approximately 450 acres of agricultural land to residential development.
   b. Increased development pressure in the wildland-urban interface areas.
   c. New commercial development concentrated along major transportation corridors.
3. Infrastructure and Services:
   a. Completion of major water system upgrades affecting drought resilience.
   b. Installation of new stormwater management facilities.
   c. Improvements to emergency response capabilities through equipment upgrades.
4. Policy Updates:
   a. Adoption of updated building codes affecting seismic safety.
   b. Implementation of new wildfire mitigation requirements.
   c. Enhanced floodplain management standards.

7.1.19 Development in Hazard-Prone Areas - Carbon County

Since 2018, development trends in Carbon County have generally not increased overall hazard vulnerability. Infrastructure improvements completed during this period, including stormwater system upgrades and water conservation measures, have moderately decreased flood and drought vulnerability in developed areas. The County's focus on infill rather than expansion into wildland interface zones has helped maintain consistent wildfire vulnerability levels despite ongoing development pressure.

7.1.20 Carbon County Mitigation Efforts

7.1.20.1 Status of 2018 Mitigation Actions - Carbon County

The 2018 Pre-Disaster Mitigation Plan took a primarily county-level approach, with most actions designated as 'Countywide' rather than assigned to specific jurisdictions. The following tables document the status of each 2018 action and identify which jurisdictions were ultimately involved in implementation:

- Dam Failure Actions:

2018 Action	Lead Jurisdiction(s)	Current Status	Explanation
DF1: Install Early Remote Warning System	Carbon County	Modified	Partnership with Bureau of Reclamation in progress. Project requested.
DF2: Work with Utah County on Scofield Lake roads	Carbon County, Scofield	Ongoing	Annual maintenance with B&C Road funds.
DF3: Install sensors at East Carbon dam site	East Carbon/Sunnyside	Modified	Carried forward to 2024-2028 timeline.
DF4: Construct riprap dike on	East Carbon/Sunnyside	Deferred	Carried forward to 2024-2028 timeline.

HW 123			

- Flood Actions:

2018 Action	Lead Jurisdiction(s)	Current Status	Explanation
F1: Build catch pond on Meads Wash	Price City	Modified	Design updated based on new studies.
F2: Build catch pond on Cardinal Wash	Carbon County	Modified	Part of the clean-out project completed.
F3: Build dissipation basin for Westwood	Carbon County	Deferred	Waiting for funding.
F4: Excavate Spring Glen, Bull Wash	Helper	Completed	Part of 2019 EWP project.
F5: Enlarge Pine Street culvert	East Carbon/Sunnyside	Modified	Carried forward with updated scope.
F6: Install flood discharge points on Carbon Canal	Carbon County	Completed	Completed in 2019.
F7: Promote flood insurance	All Jurisdictions	Ongoing	Continuous public education.
F8: Install canal flood discharge points	Price City	Ongoing	Part of stormwater management.
F9: Clean out Coal Creek confluence	Wellington	Modified	Carried forward to 2024 plan.

- Wildland Fire Actions:

2018 Action	Lead Jurisdiction(s)	Current Status	Explanation
WF1: Remove dead trees in WUI areas	All Jurisdictions	Ongoing	Annual funding continues.
WF2: Secure up-to-date property mapping	Carbon County	Completed	Maps accessible through GIS portal.
WF3: Build interface zone roads	All Jurisdictions	Modified	Carried forward with updates.
WF4: Fuel reduction below Scofield	Carbon County, Scofield	Completed	Project completed in 2022.
WF5: Review building codes	All Jurisdictions	Ongoing	Regular 3-year review cycle.

- Problem Soils Actions:

2018 Action	Lead Jurisdiction(s)	Current Status	Explanation
PS1: Increase width of slope adjacent to roadways	Carbon County	Ongoing	Continuous work during maintenance.
PS2: Provide soil hazard fact sheets	Carbon County	Ongoing	Distribution through building dept.
PS3: Monitor and control water on	Carbon County	Modified	Updated approach through

alkali soils			NRCS.

- Infestation Actions:

2018 Action	Lead Jurisdiction(s)	Current Status	Explanation
I1: Insecticide spray Countywide	Carbon County	Ongoing	Annual countywide spraying program.

- Drought Actions:

2018 Action	Lead Jurisdiction(s)	Current Status	Explanation
D1: Promote water recycling	All Jurisdictions	Ongoing	Continued public education.
D2: Design silt control coffers at Grassy Trail	East Carbon/Sunnyside	Deferred	Pending further studies.
D3: Build Garley Wash Dam	Carbon County	Modified	Currently in study phase.

- Severe Weather Actions:

2018 Action	Lead Jurisdiction(s)	Current Status	Explanation
SW1: StormReady program participation	Carbon County	Completed	Certification achieved in 2023.
SW2: Encourage avalanche preparedness	Carbon County	Ongoing	Annual recreation training.
SW3: Install Doppler Radar on Bruin Point	Carbon County	Deferred	Funding not yet secured.
SW4: Install/relocate generators	Carbon County, Price	Modified	Partially completed.

- Landslide Actions:

2018 Action	Lead Jurisdiction(s)	Current Status	Explanation
L1: Dislodge rocks along Price Canyon	Carbon County	Ongoing	Regular maintenance activity.

7.1.20.2 Present & Future Mitigation Strategies

Carbon County employs a comprehensive mitigation strategy that includes:

- Infrastructure Projects:
  - Generator installations for critical facilities
  - Road and bridge improvements
  - Communication system upgrades
- Planning & Regulations:
  - Updated building codes and zoning

    - Stormwater management policies
    - Emergency response procedures
- Natural Systems:
    - Watershed protection
    - Wildfire fuel reduction
    - Erosion control measures
- Education/Awareness:
    - Public emergency preparedness
    - Flood insurance promotion
    - Wildfire safety programs

Note 1: Prior to selecting the mitigation actions presented in this section, the jurisdiction considered a comprehensive range of potential mitigation actions. Appendix M provides a full overview of the types of actions considered during this planning process. The actions selected above represent those deemed most appropriate, feasible, and effective for the jurisdiction based on their risk assessment, capabilities, and priorities.

7.1.20.3 Multi-Hazard Action Definition

Actions designated as "Multi-hazard" in this plan address multiple identified hazards simultaneously. This term is used when an action genuinely mitigates several hazards, not as a general category. **Throughout this plan,** any action labeled as "Multi-hazard" specifically addresses the following hazards:

- Earthquake/Severe Shaking
- Severe Weather (including winter storms, high winds, and extreme temperatures)
- Power Outage/Utility Disruption
- Access Limitation

Each multi-hazard action is further explained in its description to clarify which specific hazards it addresses.

7.1.20.4 Carbon County Mitigation Strategies

Earthquake

1. Work with County Building Inspectors to ensure that new construction continues to meet current building code standards and attend planning and zoning meetings on a continual basis.
    - **Description:** Ensure new construction meets current building code standards through regular coordination with building inspectors and ongoing participation in planning and zoning meetings.
    - **Responsible Party:** Carbon County Building Department
    - **Potential Funding:** County general funds
    - **Estimated Cost:** $5,000
    - **Timeframe:** Ongoing
    - **Status:** Ongoing
    - **Priority Level:** Medium
    - **Justification:** Carbon County has multiple fault lines and a history of seismic activity that poses risk to structures. This ongoing coordination ensures all new development incorporates appropriate seismic standards, reducing vulnerability across the county.
2. Public Education on Earthquake Preparedness.

- **Description:** Educate the public through the Be Ready Utah Campaign, participate in community events, distribute educational materials, and encourage "Great Shakeout" participation.
- **Responsible Party:** Carbon County Emergency Management Services
- **Potential Funding:** County general funds
- **Estimated Cost:** $5,000
- **Timeframe:** Ongoing
- **Status:** Ongoing
- **Priority Level:** Medium
- **Justification:** Public awareness and preparedness significantly reduce casualties during seismic events. This education program addresses Carbon County's vulnerability by ensuring residents know appropriate actions before, during, and after earthquakes.

Flooding

1. Cardinal Wash Catch Ponds
    - **Description:** Construct retention/detention basins along Cardinal Wash to capture and control flood waters during heavy precipitation events.
    - **Responsible Party:** Carbon County Engineering Department (lead); Carbon County Road Department
    - **Potential Funding:** FEMA Flood Mitigation Assistance (FMA) Program; Local municipal budget
    - **Estimated Cost:** $750,000 (estimated based on similar projects)
    - **Timeframe:** Ongoing
    - **Status:** Ongoing
    - **Priority Level:** High
    - **Justification:** Cardinal Wash has historically experienced flash flooding during heavy precipitation events. These catch ponds directly address this specific vulnerability by capturing and temporarily storing floodwaters, reducing downstream impacts to properties and infrastructure.
2. Flood Insurance Promotion
    - **Description:** Implement a public education program promoting flood insurance participation and conduct regular reviews of flood studies to maintain accurate hazard information.
    - **Responsible Party:** Carbon County Planning Department (lead); Carbon County Emergency Management Services
    - **Potential Funding:** County general funds
    - **Estimated Cost:** $5,000
    - **Timeframe:** Ongoing
    - **Status:** Ongoing
    - **Priority Level:** Medium

- **Justification:** Many property owners remain uninsured against flood damages. This program addresses community vulnerability by increasing financial protection through greater insurance participation while ensuring flood hazard information remains current.

3. Westwood Subdivision Dissipation Basin
    - **Description:** Construct a stormwater dissipation basin to protect the Westwood Subdivision from flooding during heavy precipitation events.
    - **Responsible Party:** Carbon County Engineering Department
    - **Potential Funding:** FEMA Flood Mitigation Assistance (FMA) Program; Utah Division of Water Resources
    - **Estimated Cost:** $500,000 (estimated based on similar projects, replacing "TBD")
    - **Timeframe:** 2025-2028
    - **Status:** Waiting for funding
    - **Priority Level:** High
    - **Justification:** The Westwood Subdivision has experienced repeated flooding during heavy precipitation events. This infrastructure project directly addresses this specific vulnerability by capturing and controlling stormwater before it reaches residential areas.
4. Floodplain Development Management
    - **Description:** Enhance land management along Price River's 100-year and 500-year flood extents and implement controls for foothills drainages susceptible to 100-year storm flooding.
    - **Responsible Party:** Carbon County Planning Department (lead); Carbon County Engineering Department
    - **Potential Funding:** FEMA Flood Mitigation Assistance (FMA) Program;
    - **Estimated Cost:** $40,000
    - **Timeframe:** 2025-2028
    - **Status:** Waiting for funding
    - **Priority Level:** Medium
    - **Justification:** Development in flood-prone areas increases risk to property and lives. This management approach addresses the county's vulnerability by strategically limiting development in high-risk areas and implementing protective measures where development already exists.
5. Stormwater Management Policy Update.
    - **Description:** Revise subdivision ordinance and development standards to incorporate modern stormwater management requirements that reduce runoff impacts.
    - **Responsible Party:** Carbon County Planning Department
    - **Potential Funding:** Local municipal budget
    - **Estimated Cost:** $14,000
    - **Timeframe:** 2024
    - **Status:** Underway
    - **Priority Level:** Medium

- **Justification:** Increased development creates more impervious surfaces that contribute to flooding. These policy updates address this vulnerability by requiring appropriate stormwater controls for all new development, reducing long-term flood risk across the county.

Landslide

1. Price Canyon Rockfall Mitigation
    - **Description:** Proactively identify and dislodge large rocks along Price Canyon before natural rockfalls can endanger lives and property.
    - **Responsible Party:** Carbon County Engineering Department (lead); Utah Department of Transportation
    - **Potential Funding:** FEMA Hazard Mitigation Grant Program (HMGP); Utah Department of Transportation
    - **Estimated Cost:** $100,000
    - **Timeframe:** Ongoing
    - **Status:** Ongoing
    - **Priority Level:** High
    - **Justification:** Price Canyon's steep slopes and geological composition create significant rockfall hazards to critical transportation routes and infrastructure. This ongoing mitigation program directly addresses this specific vulnerability by removing potential hazards before they can cause accidents or damage.
2. Comprehensive Slope Stability Assessment
    - **Description:** Conduct detailed assessment of high-risk landslide areas near developed regions of the county and implement prioritized stabilization measures based on findings.
    - **Responsible Party:** Carbon County Engineering Department; Utah Department of Transportation
    - **Potential Funding:** Carbon County Public Works (lead); Utah Department of Transportation
    - **Estimated Cost:** $175,000 for assessment, $500,000+ for stabilization
    - **Timeframe:** 2026-2028
    - **Status:** Planned
    - **Priority Level:** Medium
    - **Justification:** Multiple areas throughout Carbon County have geological and topographical characteristics conducive to landslides. This comprehensive assessment addresses this vulnerability by systematically identifying and prioritizing high-risk areas for mitigation, especially those near developed areas.

Wildland Fire

1. Wildland-Urban Interface Fuel Reduction.
    - **Description:** Implement ongoing program to remove dead and diseased trees in WUI areas throughout the county to create effective fire breaks between wildfire zones and residential areas.

- **Responsible Party:** Carbon County Fire Department (lead); Utah Division of Forestry, Fire, and State Lands
- **Potential Funding:** Fire Management Assistance Grant; Utah Division of Forestry, Fire, and State Lands
- **Estimated Cost:** $90,000 annually
- **Timeframe:** Ongoing
- **Status:** Ongoing
- **Priority Level**: High
- **Justification**: Carbon County faces significant wildfire risk due to extensive WUI areas along the Wasatch Plateau and Book Cliffs, with over 2,000 structures potentially exposed. This fuel reduction action directly addresses the county's vulnerability by creating defensible space in high-priority zones identified through recent risk assessment mapping.

2. Property Mapping Update.
    - **Description:** Develop and maintain comprehensive GIS mapping of properties in wildfire risk areas to support emergency planning and response operations.
    - **Responsible Party:** Carbon County GIS Department
    - **Potential Funding:** Utah State and local funds
    - **Estimated Cost:** $100,000
    - **Timeframe:** Ongoing
    - **Status:** Ongoing
    - **Priority Level:** Medium
    - **Justification:** Effective wildfire response requires accurate property information. This mapping program addresses the county's vulnerability by providing emergency responders with current, detailed information about structures, access points, and resources in wildfire-prone areas.
3. Interface Zone Roads
    - **Description:** Construct strategic access roads between wildland-urban interface zones and residential areas to create fire breaks and improve emergency access.
    - **Responsible Party:** Carbon County Road Department (lead); Carbon County Fire Department
    - **Potential Funding:** Fire Management Assistance Grant; County funds
    - **Estimated Cost:** $750,000 per mile of road
    - **Timeframe:** Ongoing
    - **Status:** Ongoing
    - **Priority Level:** High
    - **Justification:** Limited access to wildfire-prone areas hampers suppression efforts and evacuations. This road construction program addresses the county's vulnerability by providing strategic fire breaks while simultaneously improving emergency vehicle access and resident evacuation routes.

- Building Code Review and Updates **Description:** Conduct regular reviews of building codes and adopt updates on the State's 3-year cycle to incorporate latest wildfire mitigation standards and requirements.
- **Responsible Party:** Carbon County Building Department (lead); Carbon County Emergency Management Services
- **Potential Funding:** County and local funds
- **Estimated Cost:** $3,000-$12,000 per city every 3 years
- **Timeframe:** Ongoing
- **Status:** Ongoing
- **Priority Level:** Medium
- **Justification:** Building codes significantly influence structure survivability during wildfires. This regular update process addresses the county's vulnerability by ensuring all new construction incorporates current best practices for wildfire resistance.

Problem Soils

1. Roadway Slope Improvements
    - **Description:** Increase width and stability of slopes adjacent to roadways throughout Carbon County to protect transportation infrastructure from problem soil impacts.
    - **Responsible Party:** Carbon County Road Department (lead); Carbon County Engineering Department
    - **Potential Funding:** FEMA Hazard Mitigation Grant Program (HMGP); Utah Department of Transportation
    - **Estimated Cost:** $1,500,000
    - **Timeframe:** Ongoing
    - **Status:** Ongoing
    - **Priority Level:** Medium
    - **Justification:** Problem soils in Carbon County can compromise roadway stability, particularly during precipitation events. This ongoing improvement program directly addresses this vulnerability by creating more resilient slope configurations that maintain structural integrity despite soil challenges.
2. Problem Soil Hazard Education
    - **Description:** Develop and distribute educational materials to new homeowners describing problem soil risks in Carbon County and appropriate mitigation measures.
    - **Responsible Party:** Carbon County Building Department (lead); Carbon County Planning Department
    - **Potential Funding:** Local municipal budget
    - **Estimated Cost:** $3,000
    - **Timeframe:** Ongoing
    - **Status:** Ongoing
    - **Priority Level:** Low

- **Justification:** Many property owners are unaware of problem soil risks. This education program addresses this vulnerability by increasing awareness of potential issues and encouraging appropriate building practices to reduce future structural damage.

3. Alkali Soil Management Program.
    - **Description:** Implement comprehensive monitoring and water management program for alkali soils, including conversion from flood to sprinkler irrigation and NRCS desalination projects.
    - **Responsible Party:** Carbon County Engineering Department (lead); Natural Resources Conservation Service
    - **Potential Funding:** USDA Environmental Quality Incentives Program (EQIP); Natural Resources Conservation Service Technical Assistance
    - **Estimated Cost:** $30,000
    - **Timeframe:** Ongoing
    - **Status:** Ongoing
    - **Priority Level:** Medium
    - **Justification:** Alkali soils in Carbon County can damage infrastructure and limit agricultural productivity. This management program addresses these vulnerabilities by implementing proven techniques to control water and salt content, improving soil stability and productivity.

Dam Failure

1. Road Maintenance around Scofield Lake
    - **Description:** Coordinate with Utah County to maintain roads around Scofield Lake and Clear Creek route areas, ensuring evacuation routes remain viable during dam emergencies.
    - **Responsible Party:** Carbon County Road Department
    - **Potential Funding:** B and C Road Funds; Utah Department of Transportation
    - **Estimated Cost:** $10,000 annually
    - **Timeframe:** Ongoing
    - **Status:** Ongoing
    - **Priority Level:** Medium
    - **Justification:** Maintained evacuation routes are critical for protecting lives during potential dam failure events. This ongoing maintenance directly addresses the county's vulnerability by ensuring reliable evacuation access.
2. Early Remote Warning System
    - **Description:** Develop and implement comprehensive dam failure risk reduction measures for Scofield Dam, including: (1) Installation of permanent automated monitoring systems that enable predictive maintenance to prevent structural failures; (2) Implementation of structural improvements to spillway capacity and overflow controls to reduce failure probability; (3) Development of permanent land use regulations in downstream inundation zones that restrict high-density development; and (4) Construction of permanent flood control structures that redirect potential failure flows away from populated areas.

- **Responsible Party:** Carbon County Emergency Management Services (lead); Carbon County Engineering Department
- **Potential Funding:** FEMA Hazard Mitigation Grant Program (HMGP); FEMA Building Resilient Infrastructure and Communities (BRIC)
- **Estimated Cost:** $500,000 (estimated based on similar warning systems)
- **Timeframe:** 2025-2027
- **Status:** Upcoming
- **Priority Level:** High
- **Justification:** Carbon County's vulnerability to Scofield Dam failure requires comprehensive long-term risk reduction rather than emergency response. This program addresses the root causes of potential dam failure by implementing permanent monitoring systems that enable preventive maintenance, structural improvements that reduce failure probability, regulatory controls that prevent increased exposure, and physical infrastructure that minimizes consequences if failure occurs, providing sustained protection for downstream communities.

Drought

1. Water Treatment Plant Improvements
    - **Description:** Complete upgrades to the culinary water treatment plant and develop redundant water sources to ensure water availability during drought conditions.
    - **Responsible Party:** Carbon County Engineering Department (lead); Price River Water Improvement District (PRWID)
    - **Potential Funding:** Utah Division of Water Resources; FEMA Building Resilient Infrastructure and Communities (BRIC) Program
    - **Estimated Cost:** $3,500,000
    - **Timeframe:** 2025-2028
    - **Status:** Ongoing
    - **Priority Level:** High
    - **Justification:** Carbon County's arid climate makes it particularly vulnerable to drought impacts on water supplies. These infrastructure improvements directly address this vulnerability by increasing system efficiency and providing backup sources during water shortages.
2. Water Recycling Program.
    - **Description:** Promote water recycling of secondary water sources through public education and incentive programs to reduce consumption of primary water supplies.
    - **Responsible Party:** Carbon County Water Conservancy District (lead); Carbon County Emergency Management Services
    - **Potential Funding:** Utah Division of Water Resources; Local municipal budget
    - **Estimated Cost:** $25,000
    - **Timeframe:** Ongoing
    - **Status:** Ongoing
    - **Priority Level:** Medium

- **Justification:** More efficient water use is critical for drought resilience. This program addresses Carbon County's vulnerability by promoting conservation practices that extend available water supplies during shortage periods.

3. Garley Wash Dam Construction
    - **Description:** Build the Garley Wash Dam to increase water storage capacity and improve drought resilience for current and future water requirements.
    - **Responsible Party:** Carbon County Engineering Department (lead); Utah Division of Water Resources
    - **Potential Funding:** Federal infrastructure grants; FEMA Building Resilient Infrastructure and Communities (BRIC) Program
    - **Estimated Cost:** $10,000,000
    - **Timeframe:** 2025-2030
    - **Status:** Upcoming
    - **Priority Level:** High
    - **Justification:** Additional water storage is vital for long-term drought mitigation. This major infrastructure project addresses Carbon County's specific vulnerability to extended drought periods by significantly increasing storage capacity and improving year-round water security.

Severe Weather

1. Avalanche Preparedness Program
    - **Description:** Develop and implement comprehensive avalanche safety training for backcountry users through Carbon County Recreation Department instructors.
    - **Responsible Party:** Carbon County Recreation Department (lead); Carbon County Emergency Management Services
    - **Potential Funding:** County general funds
    - **Estimated Cost:** $5,000
    - **Timeframe:** Ongoing
    - **Status:** Ongoing
    - **Priority Level:** Medium
    - **Justification:** Carbon County's mountainous terrain attracts winter recreation that exposes users to avalanche risk. This education program addresses this vulnerability by increasing awareness and skills among backcountry users, reducing the likelihood of injuries and fatalities.
2. Critical Facility Generator Installation
    - **Description:** Install two new generators and relocate two existing generators to provide backup power for critical facilities during severe weather events and power outages.
    - **Responsible Party:** Carbon County Emergency Management Services (lead); Carbon County Facilities Management
    - **Potential Funding:** FEMA Building Resilient Infrastructure and Communities (BRIC) Program; County and local funds
    - **Estimated Cost:** $112,000

- **Timeframe:** 2025-2027
- **Status:** Planned
- **Priority Level:** High
- **Justification:** Power outages during severe weather events can disrupt critical services. This generator project addresses this vulnerability by ensuring continuous power for essential operations during emergencies, maintaining public safety and service continuity.

3. Doppler Radar Installation
    - **Description:** Install Doppler Radar system on Bruin Point to provide real-time weather monitoring and early warning capabilities between Salt Lake and Grand Junction areas.
    - **Responsible Party:** Carbon County Emergency Management Services (lead); National Weather Service
    - **Potential Funding:** FEMA Hazard Mitigation Grant Program (HMGP); Utah Permanent Community Impact Fund
    - **Estimated Cost:** $1,500,000
    - **Timeframe:** 2025-2028
    - **Status:** Upcoming
    - **Priority Level:** Medium
    - **Justification:** Carbon County currently lacks detailed local weather monitoring capacity. This radar installation addresses this vulnerability by providing accurate, real-time data for severe weather prediction and warning, improving emergency response planning and public safety.

Infestation

1. Countywide Insecticide Application Program
    - **Description:** Implement systematic insecticide spray program throughout the county to control insects and birds that pose public health and agricultural risks.
    - **Responsible Party:** Carbon County Public Health Department
    - **Potential Funding:** County general funds; Local municipal budgets
    - **Estimated Cost:** $100,000
    - **Timeframe:** Yearly
    - **Status:** Ongoing
    - **Priority Level:** Medium
    - **Justification:** Insect infestations can impact agriculture, public health, and quality of life. This systematic control program addresses the county's vulnerability by reducing population levels of harmful species before they reach damaging levels.

Multi-hazard

1. Emergency Communications System Improvement
    - **Description:** Complete Phase 1 improvements to the county radio system to enhance communications capability for emergency responders and service providers during disaster events.

- **Responsible Party:** Carbon County Emergency Management Services
- **Potential Funding:** FEMA Hazard Mitigation Grant Program (HMGP)
- **Estimated Cost:** $1,900,000
- **Timeframe:** 2027
- **Status:** Ongoing
- **Priority Level:** High
- **Justification:** Reliable emergency communications are essential during all hazard events. This system upgrade addresses Carbon County's vulnerability by ensuring emergency responders can coordinate effectively during disasters, improving response times and resource allocation.

7.1.21 Integration of the 2018 Plan

From 2018-2023, Carbon County integrated elements of the previous hazard mitigation plan in the following ways:

1. Emergency Operations Plan Updates:
    a. Incorporated hazard-specific response protocols.
    b. Updated evacuation routes based on identified hazard areas.
2. Resource Management Plan:
    a. Referenced hazard areas in development guidelines.
    b. Incorporated wildfire mitigation strategies.
3. Building Code Updates:
    a. Incorporated enhanced requirements for development in hazard-prone areas, particularly related to flood protection and wildfire mitigation.
    a. Subdivision Ordinance Update (2024): Implemented improved road connectivity standards, engineering requirements, and stormwater management provisions that directly address flood and access concerns identified in the 2018 plan.
5. Capital Improvement Program:
    a. Prioritized infrastructure projects based on hazard vulnerability assessments from the 2018 plan, particularly focusing on stormwater management and emergency access improvements.

7.2 East Carbon / Sunnyside City

7.2.1 Background

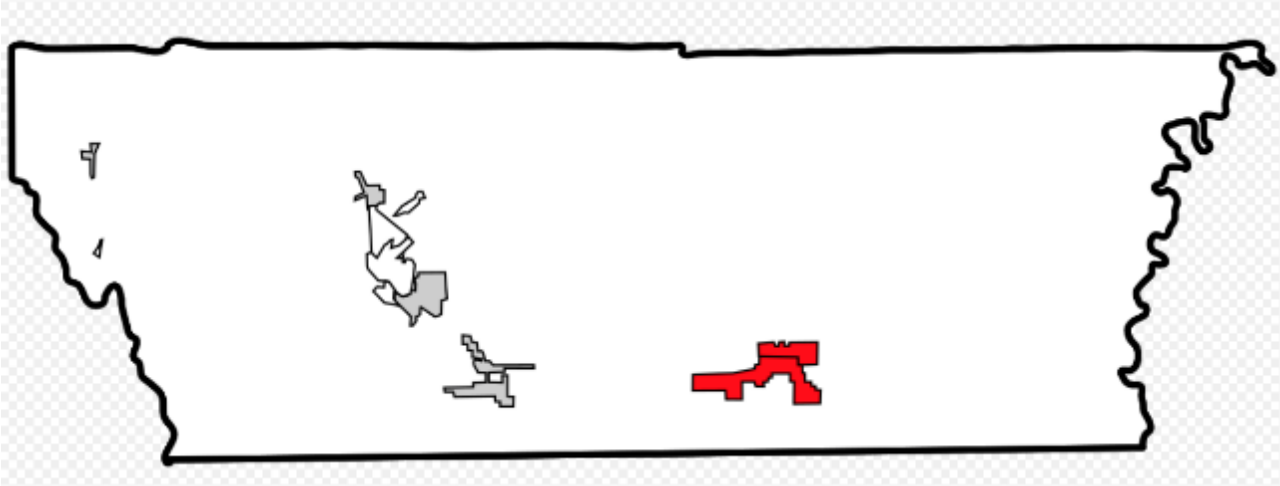
East Carbon is a city in Carbon County, Utah, United States. East Carbon was incorporated on July 23, 1973, from the merger of the two struggling mining towns of Dragerton and Columbia. On January 1, 2014, the city merged with the neighboring city of Sunnyside.

East Carbon is located southeast of the center of Carbon County at. It is 23 miles east of Price, the county seat. According to the United States Census Bureau, the city had a total area of 9.0 square miles.

East Carbon/Sunnyside operates under a Mayor-Council form of government. The city is led by a mayor who serves as the chief executive and administrative officer. The mayor is elected by the residents and is responsible for overseeing the daily operations of the city. The city council, consisting of elected council members, serves as the legislative body and works in collaboration with the mayor to establish policies, ordinances, and regulations for the city. The council members represent the interests of the residents and provide input on various city matters, including budgeting, land use planning, and community development.

7.2.2 Location & Extent

East Carbon City is a city in Carbon County, Utah, United States, that was incorporated on January 1, 2014 as East Carbon-Sunnyside, from the merger of the cities of East Carbon and Sunnyside. East Carbon-Sunnyside was a temporary name, to be used until the city council could adopt a permanent name.[2] As of January 1, 2016 the merged cities are officially known as East Carbon City/Sunnyside City. East Carbon/Sunnyside is 11.3 square miles in area.



7.2.3 Demographic & Population Growth

The population of East Carbon/Sunnyside was 1,556 at the 2020 census. The two figures below, taken from the United States Census Bureau (https://data.census.gov, 2024), show demographic data for East Carbon and Sunnyside City individually, as data was still gathered individually, despite the two city's recent merge.

Figure 7.2.3.1 -East Carbon City's demographic data

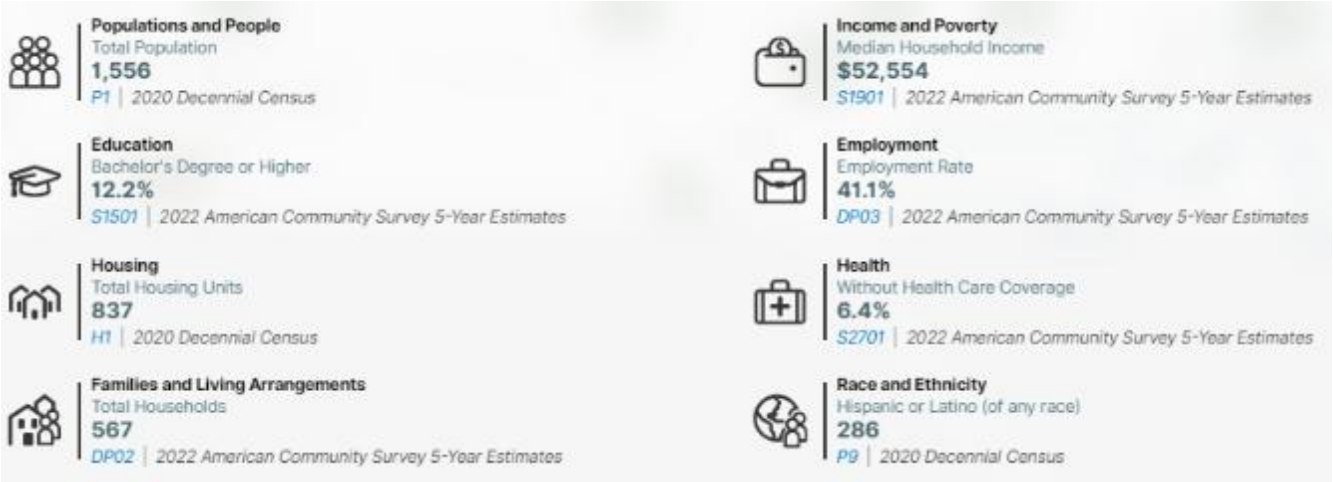
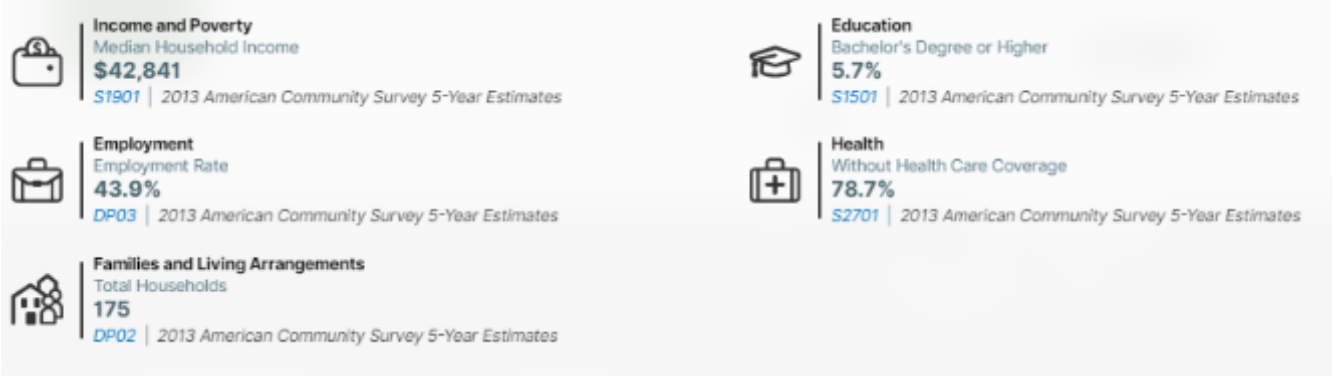


Figure 7.2.3.2 - Sunnyside City's demographic data



7.2.4 Vulnerable Populations

EAST CARBON / SUNNYSIDE - POPULATIONS AT RISK (2021)	
Population under 5	7.0%
Population over 65	22.6%
Population Non-White (all other races)	5.7%
Population Hispanic	18.6%
Population without a High School Diploma	15.2%
Population that speak English "Not Well"	0.0%
Population in "Deep Poverty"	12.1%
Families Below Poverty	14.6%
Families that are Single Mother Households and Below Poverty	8.7%
Households Receiving Food Stamps (SNAP)	25.9%
Population that "Did Not Work"	38.4%
Rentals where Gross Rent Exceeds 30% of Household Income	54.9%
Housing that are Mobile Homes	2.7%
Households that are Single Female with Children under 18	8.0%
Households with No Car	0.9%
Population over 65 and Living Alone	9.1%
Population with Disabilities	22.7%
Population without Health Insurance	8.0%

The estimates of vulnerable populations were generated by Headwaters Economics, and are based on data from the US Census, ACS 2021.

7.2.5 Specific Community Hazards & Vulnerabilities

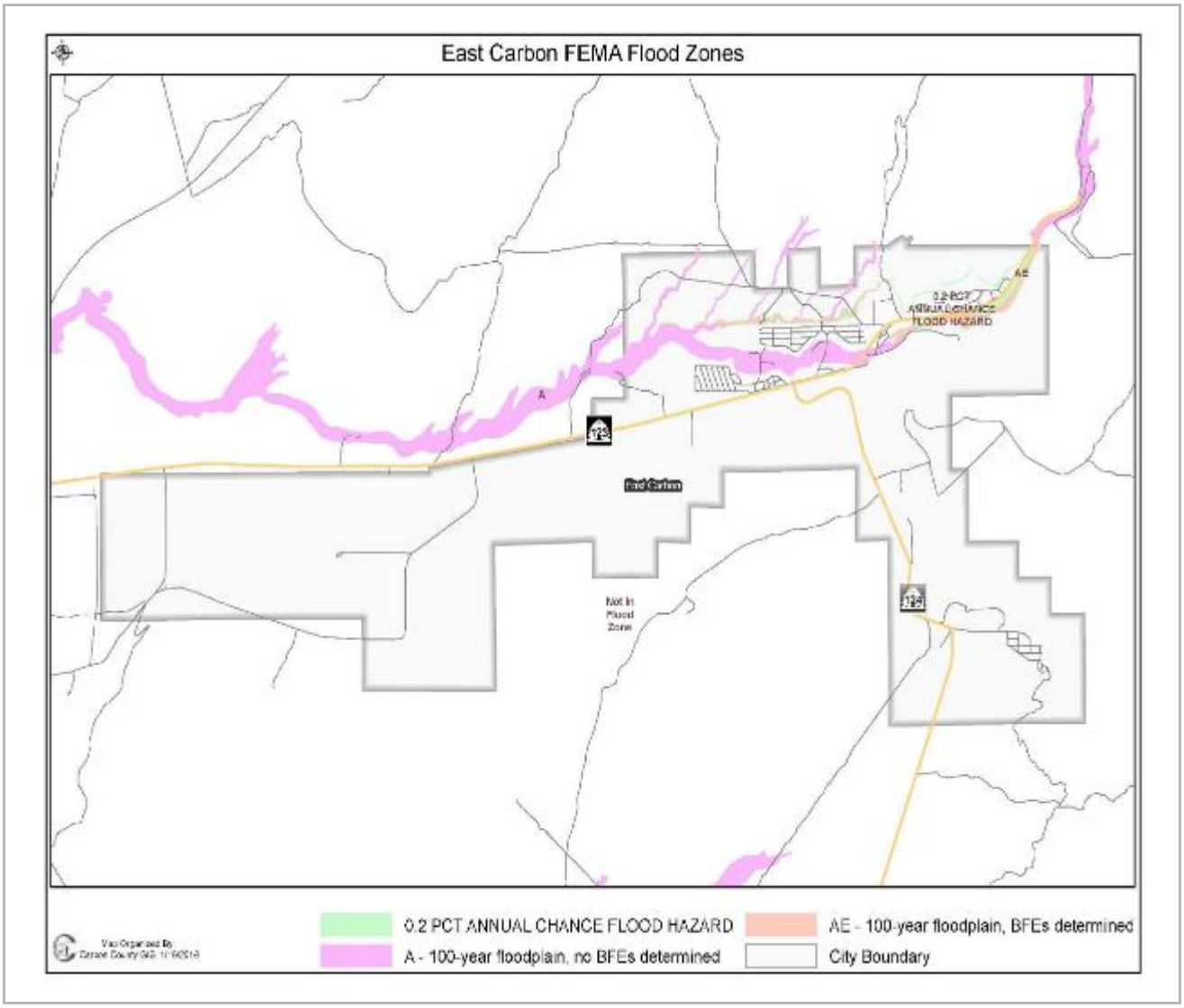
East Carbon/Sunnyside faces unique hazard risks due to its location and characteristics:

- **Earthquake:** East Carbon/Sunnyside has several structures built prior to modern seismic codes, particularly in the older commercial district and original mining-era residential neighborhoods. Approximately 35% of residential structures were built before 1970, with construction techniques that lacked current seismic reinforcement standards. The community's remote location would complicate emergency response during seismic events, potentially delaying outside assistance for approximately 1,540 residents. Utility infrastructure including water and sewer lines lacks modern seismic resilience features in older sections of the system.
- **Flooding:** The community's position in a valley setting with multiple drainages creates specific flood vulnerabilities. Localized flooding frequently occurs near Pine Street and Edge Hill Drive due to undersized culverts, affecting approximately 35 properties in the immediate vicinity. Heavy precipitation events cause sheet flow across developed areas, with historical flooding resulting in property damage and road closures. The city's stormwater infrastructure, much of which was designed before modern standards, has limited capacity during intense storms.
- **Landslide:** The surrounding Book Cliffs create landslide vulnerability, particularly in areas of historical mining activity. Several residential neighborhoods on the city's perimeter are built on slopes with potential instability. Water infrastructure, including pipelines connecting to Grassy Trail Reservoir, crosses terrain with documented landslide susceptibility. Historical mining operations have created unique ground stability concerns that could affect both existing development and future growth areas.
- **Wildfire:** The community is surrounded by wildland areas with significant fuel loads, creating substantial wildfire risk. Approximately 843 acres within city limits are classified as extreme wildfire risk areas, with an additional 2,210 acres in high-risk zones. Limited evacuation routes could become compromised during wildfire events, potentially isolating residents. The city's location and surrounding vegetation make it particularly vulnerable to ember impacts during regional wildfire events.
- **Drought:** The community's isolated location and limited water sources create heightened drought vulnerability. Grassy Trail Reservoir serves as the primary water supply, with limited redundancy or alternative sources during shortage periods. Water quality issues increase during drought conditions as reservoir levels decrease. Historical drought periods have required water use restrictions and affected both residential and limited industrial users.
- **Severe Weather:** The community's higher elevation and exposed position create vulnerability to severe winter storms that can isolate the community when access roads become impassable. High winds in 2022 damaged several residential roofs and caused power outages lasting 8 hours, affecting vulnerable populations including approximately 22.6% of residents who are elderly. A 2019 winter storm isolated the community for 24 hours when access roads became impassable, limiting access to emergency services and supplies. Power outages during winter storms disproportionately affect the city's vulnerable populations, particularly elderly residents living alone (9.1% of population) and residents with disabilities (22.7% of population). The community's limited retail presence means residents rely on travel to Price for essential supplies, creating additional vulnerability when severe weather limits transportation. Critical infrastructure including water and wastewater systems have

experienced operational disruptions during extreme cold events, with aging infrastructure particularly susceptible to freeze damage during prolonged cold periods.

The Grassy Trails Reservoir was built in 1952 and is jointly owned by East Carbon and Sunnyside Cities. The two cities have consolidated into one city East Carbon/Sunnyside. A possible dam breach of the dam would affect East Carbon/ Sunnyside City, which is 7 miles from the reservoir. This reservoir is considered to have a high hazard threat and the need for mitigation is imminent. The reservoir storage at the spillway crest is 916 acre-feet and the storage at the dam crest is 1,156 acre-feet. Maximum dam breach flow would be 16,000 cubic feet per second.

The Sunnyside Co-Generation Reservoir Dam has a moderate hazard rating. It was built in 1992 and is owned by Sunnyside Cogeneration Associates. The reservoir storage at the open channel spillway is 123 acre-feet. The first downstream town is East Carbon/Sunnyside City, which is only 0.5 miles away.



7.2.6 Changes Since 2018 Plan

East Carbon/Sunnyside has experienced several notable changes affecting hazard vulnerability:

1. Population and Demographics:
    a. Population decreased by approximately 2% since 2018.
    b. Increasing percentage of seasonal residents.
    c. Growing retiree population affecting emergency response needs.
2. Infrastructure Changes:
    a. Completion of water system improvements affecting drought resilience.
    b. Updates to stormwater management systems.
    c. Installation of new emergency warning systems.
3. Economic Shifts:
    a. Reduction in mining activity affecting emergency response capabilities.
    b. Changes in local business composition affecting hazard exposure.
    c. Modifications to critical facility operations and locations.
4. Environmental Changes:
    a. Increased wildfire risk due to prolonged drought conditions.
    b. Changes in flood patterns due to altered precipitation trends.
    c. Modified landslide risk due to changing ground conditions.

7.2.7 Development in Hazard-Prone Areas - East Carbon / Sunnyside

In the years since the previous hazard plan, most of the development in East Carbon / Sunnyside was infill and concentrated along the industrial park.

The limited infill development that has occurred in East Carbon/Sunnyside since 2018 has not significantly changed the community's vulnerability profile. Water system improvements completed during this period have somewhat decreased drought vulnerability, while the installation of new emergency warning systems has reduced vulnerability to sudden-onset hazards such as flash flooding and wildfire. The community's overall vulnerability has slightly decreased due to these targeted infrastructure investments despite population decline creating potential maintenance challenges.

The City isn't expecting future development that would increase the community's overall vulnerability if the new development follows the City's plans and ordinances.

7.2.8 Status of 2018 Mitigation Actions - East Carbon/Sunnyside

While the 2018 plan primarily took a countywide approach, East Carbon/Sunnyside participated in or led the following actions:

2018 Action	Role	Current Status	Explanation
DF3: Install sensors at dam site	Lead	Deferred	Carried forward to 2024-2028 timeline.
DF4: Construct riprap dike	Lead	Deferred	Carried forward to 2024-2028 timeline.
F5: Enlarge Pine Street culvert	Lead	Modified	Carried forward with updated scope.

D2: Design silt control coffers	Lead	Deferred	Pending further studies.
WF1: Remove dead trees in WUI areas	Participant	Ongoing	Annual coordination with the County.
WF5: Review building codes	Participant	Ongoing	Regular 3-year review cycle.

7.2.9 Present and Future Mitigation Strategies

East Carbon/Sunnyside employs a comprehensive mitigation strategy that includes:

- Infrastructure Projects:
    - Dam monitoring systems and structural improvements.
    - Culvert and drainage upgrades.
    - Water system enhancements.
- Planning & Regulations:
    - Updated subdivision standards.
    - Building code improvements.
    - Emergency operations planning.
- Natural Systems:
    - Riprap installation for erosion control.
    - Silt management at a reservoir.
- Education/Awareness:
    - Emergency notification procedures.
    - Water conservation programs.

Note: *Each action was selected based on its effectiveness, feasibility, and ability to address multiple hazards where possible. (See Appendix M).*

7.2.9.1 East Carbon/Sunnyside Mitigation Strategies

Earthquake

1. Incorporate earthquake mitigation into local planning (Town general plan and codes)
    - **Description:** Update the city's general plan and building codes to incorporate comprehensive earthquake mitigation elements, including seismic design standards, critical facility protection, and post-disaster recovery procedures.
    - **Responsible Party:** East Carbon-Sunnyside Planning and Zoning Department
    - **Potential Funding:** Potential Funding: FEMA Hazard Mitigation Grant Program (HMGP); Local municipal budget, Community Impact Board
    - **Estimated Cost:** $40,000
    - **Timeframe:** 2025-2028
    - **Status:** Upcoming (based on funding)
    - **Priority Level**: Medium
    - **Justification**: East Carbon/Sunnyside's current planning documents lack comprehensive earthquake mitigation provisions. This update addresses the community's vulnerability by

establishing requirements for seismic-resistant construction, identifying priority facilities for retrofitting, and creating a framework for post-earthquake recovery, reducing long-term earthquake risk for both existing and future development throughout the city.

Flooding

1. Enlarge culvert at Pine Street and Edge Hill Drive in East Carbon City
    - **Description:** Replace the existing undersized culvert at Pine Street and Edge Hill Drive with a larger capacity structure designed to handle 100-year flood events, reducing localized flooding during heavy rainfall.
    - **Responsible Party:** East Carbon-Sunnyside Public Works Department
    - **Potential Funding:** FEMA Flood Mitigation Assistance (FMA) Program; Local municipal budget
    - **Estimated Cost:** $850,000
    - **Timeframe:** 2025-2028
    - **Status:** Upcoming (based on funding)
    - **Priority Level:** High
    - **Justification:** This intersection has experienced repetitive flooding during moderate to heavy precipitation events, causing property damage and restricting emergency vehicle access to surrounding neighborhoods. Enlarging the culvert directly addresses a known hydraulic bottleneck that affects approximately 35 properties in the immediate vicinity, significantly reducing flood risk to this vulnerable area of the community.
2. Minimize safety risk and property damage due to flooding by establishing, upgrading, and maintaining structural control measures
    - **Description:** Implement a comprehensive program of structural flood control measures including drainage channel maintenance, detention basin construction, and strategic stormwater system upgrades in flood-prone areas throughout East Carbon/Sunnyside.
    - **Responsible Party:** East Carbon-Sunnyside Public Works Department (lead); Carbon County Engineering Department
    - **Potential Funding:** FEMA Flood Mitigation Assistance (FMA) Program; Local municipal budget
    - **Estimated Cost:** $750,000 (estimated based on similar projects)
    - **Timeframe:** 2025-2028
    - **Status:** Upcoming (based on funding)
    - **Priority Level:** Medium
    - **Justification:** East Carbon/Sunnyside's topography creates multiple areas vulnerable to flash flooding during intense precipitation events. This comprehensive approach addresses community-wide flood vulnerabilities by implementing targeted structural improvements at key locations, reducing flood risk to residential areas and critical infrastructure while improving stormwater management throughout the city.
3. Adopt policies to reduce stormwater runoff by updating the subdivision ordinance and development standards
    - **Description:** Revise city subdivision ordinance and development standards to incorporate low-impact development techniques, on-site retention requirements, and enhanced stormwater management provisions for all new development and significant redevelopment projects.
    - **Responsible Party:** East Carbon-Sunnyside Planning and Zoning Department

- **Potential Funding:** FEMA Hazard Mitigation Grant Program (HMGP); Local municipal budget
- **Estimated Cost:** $14,000
- **Timeframe:** 2024
- **Status:** Underway
- **Priority Level:** Medium
- **Justification:** Current development standards do not adequately address stormwater management, contributing to increased runoff and flood risk as development occurs. This policy update addresses East Carbon/Sunnyside's vulnerability by ensuring future development incorporates appropriate stormwater management features, reducing long-term flood risk while creating more sustainable development patterns throughout the community.

Landslides

1. Work with the county to map and address the community's vulnerability to landslides
    - **Description:** Partner with Carbon County to conduct detailed landslide hazard mapping within and adjacent to East Carbon/Sunnyside, followed by development of targeted mitigation measures for identified high-risk areas.
    - **Responsible Party:** East Carbon-Sunnyside Planning and Zoning Department (lead); Carbon County Engineering Department
    - **Potential Funding:** FEMA Hazard Mitigation Grant Program (HMGP); Carbon County Engineering Department
    - **Estimated Cost:** $50,000
    - **Timeframe:** 2025-2028
    - **Status:** Upcoming (based on funding)
    - **Priority Level:** Medium
    - **Justification:** East Carbon/Sunnyside's location near the Book Cliffs creates potential landslide vulnerability that has not been comprehensively assessed. This mapping and analysis effort addresses this information gap by identifying specific at-risk areas, quantifying potential impacts, and developing targeted mitigation strategies to protect community infrastructure and residential areas from landslide hazards.

Wildland Fires

1. Build roads between fire interface zone and residential areas within the County
    - **Description:** Construct strategic access roads and fire breaks between wildland areas and residential neighborhoods, creating defensible space and improved access for fire suppression equipment during wildfire events.
    - **Responsible Party:** East Carbon-Sunnyside Public Works Department (lead); Carbon County Fire Department
    - **Potential Funding:** Fire Management Assistance Grant; FEMA Building Resilient Infrastructure and Communities (BRIC) Program
    - **Estimated Cost:** $500,000 (estimated based on similar projects)
    - **Timeframe:** 2025-2028
    - **Status:** Upcoming (based on funding)
    - **Priority Level:** High

- **Justification:** East Carbon/Sunnyside's location adjacent to wildland areas with significant fuel loads creates vulnerability to wildfire encroachment. This project addresses the city's specific risk by establishing strategic buffer zones between wildland and residential areas while simultaneously improving firefighter access during wildfire events, substantially reducing both the likelihood and potential impact of wildfires on the community.

Problem Soils

East Carbon/Sunnyside has not prioritized problem soils as a hazard because geological assessments indicate limited development areas with expansive or collapsible soils within municipal boundaries. The community's current building codes adequately address the moderate soil challenges in this area, with historical data showing minimal infrastructure damage from soil-related issues.

Dam Failure

1. Install sensors at dam site and monitor devices at East Carbon City Offices for early warning of dam failure and water overtopping the dam
    - **Description:** Install an automated monitoring system that includes water level sensors, seepage detection equipment, and structural monitoring devices at Grassy Trail Dam with real-time data transmission to East Carbon City offices for continuous monitoring and early warning.
    - **Responsible Party:** East Carbon-Sunnyside Public Works Department (lead); Carbon County Emergency Management Services
    - **Potential Funding:** FEMA Hazard Mitigation Grant Program (HMGP); FEMA Building Resilient Infrastructure and Communities (BRIC) Program
    - **Estimated Cost:** $250,000
    - **Timeframe:** 2025-2028
    - **Status:** Upcoming (based on funding)
    - **Priority Level:** High
    - **Justification:** East Carbon/Sunnyside's location directly downstream from Grassy Trail Dam creates significant vulnerability to dam failure with minimal warning time for evacuation. This monitoring system addresses the specific vulnerability by providing continuous real-time data on dam conditions, enabling earlier detection of potential problems, and increasing warning time for emergency response, significantly reducing the risk to life and property throughout the community.
2. Construct riprap dike on the east side of HW 123 from the northern East Carbon City boundary to Sunnyside Park
    - **Description:** Construct an engineered riprap dike structure along Highway 123 designed to redirect potential dam failure floodwaters away from developed areas of East Carbon/Sunnyside and toward natural drainage channels.
    - **Responsible Party:** East Carbon-Sunnyside Public Works Department (lead); Carbon County Engineering Department
    - **Potential Funding:** Carbon County Capital Improvement Fund;
    - **Estimated Cost:** $800,000
    - **Timeframe:** 2025-2028
    - **Status:** Upcoming (based on funding)
    - **Priority Level:** High

- **Justification:** Highway 123 serves as a potential flood conduit during a dam failure event, channeling floodwaters directly toward populated areas of East Carbon/Sunnyside. This protective structure addresses this specific vulnerability by redirecting potential floodwaters away from residential and commercial areas, significantly reducing the inundation risk to approximately 75% of the community while maintaining critical evacuation routes during an emergency.

3. Install Early Warning System for Grassy Trail Dam
    - **Description:** Develop and implement long-term risk reduction measures for dam failure vulnerabilities, including: (1) Installation of permanent automated monitoring and early detection systems that enable predictive maintenance to prevent failures; (2) Implementation of structural improvements to dam spillways and overflow capacity to reduce failure probability; (3) Development of permanent land use regulations in inundation zones that restrict high-risk development; and (4) Construction of permanent flood diversion structures downstream that redirect potential failure flows away from populated areas."
    - **Responsible Party:** East Carbon/Sunnyside Public Works Department (lead); Carbon County Emergency Management
    - **Potential Funding Source:** FEMA Hazard Mitigation Grant Program (HMGP); Utah Division of Water Resources
    - **Estimated Cost:** $150,000-200,000
    - **Timeframe:** Short-term (2025-2025)
    - **Priority Level:** High
    - **Justification:** East Carbon/Sunnyside's position downstream from Grassy Trail Reservoir creates a unique vulnerability to dam failure that could impact the entire community with little warning. This early warning system would provide critical advance notice of potential dam issues, allowing emergency managers to initiate evacuation procedures before a catastrophic failure, substantially reducing risk to life and property.
4. Develop and Implement Dam Failure Emergency Response Plan
    - **Description:** Create a comprehensive dam failure emergency plan including inundation mapping, evacuation routes, public notification procedures, emergency shelter locations, and regular training exercises for city personnel and residents.
    - **Responsible Party:** East Carbon/Sunnyside Emergency Management Coordinator (lead); Carbon County Emergency Management
    - **Potential Funding Source:** Emergency Management Performance Grant (EMPG); Local municipal budget
    - **Estimated Cost:** $30,000-50,000
    - **Timeframe:** Short-term (2025-2026)
    - **Priority Level:** High
    - **Justification:** East Carbon/Sunnyside's geographic isolation and position downstream from Grassy Trail Dam necessitates detailed emergency planning specific to dam failure scenarios. This action addresses the city's vulnerability by establishing clear procedures, roles, and communication protocols that can be immediately implemented during a dam emergency, significantly improving community preparedness and response capabilities.

Drought

1. Work with water resources to improve the local reservoir
    - **Description:** Implement comprehensive improvements to Grassy Trail Reservoir including dam safety upgrades, sediment management, and storage optimization to enhance water supply reliability during drought conditions.
    - **Responsible Party:** East Carbon-Sunnyside Public Works Department (lead); Price River Water Improvement District (PRWID)
    - **Potential Funding:** Utah Division of Water Resources; FEMA Building Resilient Infrastructure and Communities (BRIC) Program
    - **Estimated Cost:** $3,000,000
    - **Timeframe:** 2029
    - **Status:** Ongoing
    - **Priority Level:** High
    - **Justification:** East Carbon/Sunnyside relies heavily on Grassy Trail Reservoir as its primary water source, making the community particularly vulnerable during drought conditions. These comprehensive reservoir improvements address the city's specific vulnerability by maximizing available water supply, extending drought resilience, and ensuring continued access to essential water resources during extended dry periods.
2. Secure adequate water for culinary and agricultural needs through structural measures
    - **Description:** Develop and implement structural water supply enhancements including source protection measures, secondary water system improvements, and water conservation infrastructure to improve drought resilience.
    - **Responsible Party:** East Carbon-Sunnyside Public Works Department (lead); Carbon County Water Conservancy District
    - **Potential Funding:** Utah Division of Water Resources; FEMA Building Resilient Infrastructure and Communities (BRIC) Program
    - **Estimated Cost:** $2,000,000
    - **Timeframe:** 2025-2028
    - **Status:** Upcoming (based on funding)
    - **Priority Level:** Medium
    - **Justification:** East Carbon/Sunnyside's isolated geographic location limits connection to regional water systems, increasing vulnerability during drought conditions. These structural improvements address the community's specific risk by securing adequate water supplies through multiple complementary approaches, ensuring water availability even during extended drought periods.
3. Design and build silt control coffers at water inlets at Grassy Trail Reservoir to prevent buildup
    - **Description:** Install engineered silt control structures at reservoir inflow points to trap sediment before it enters the reservoir, preserving water storage capacity and improving water quality during drought conditions.
    - **Responsible Party:** East Carbon-Sunnyside Public Works Department (lead); Price River Water Improvement District (PRWID)
    - **Potential Funding:** Utah Division of Water Resources; FEMA Building Resilient Infrastructure and Communities (BRIC) Program
    - **Estimated Cost:** $850,000

- **Timeframe:** 2025-2028
- **Status:** Upcoming (based on funding)
- **Priority Level:** Medium
- **Justification:** Sedimentation at Grassy Trail Reservoir reduces storage capacity and impacts water quality, particularly during low water conditions associated with drought. These silt control measures address East Carbon/Sunnyside's vulnerability by preserving reservoir capacity, extending drought resilience, and maintaining water quality during extended dry periods when water resources are most limited.

4. Plan for drought by updating the emergency operations plan
    - **Description:** Develop a comprehensive drought response component within the city's emergency operations plan, including water shortage triggers, conservation measures, enforcement protocols, and alternative supply strategies.
    - **Responsible Party:** East Carbon-Sunnyside Emergency Management Coordinator
    - **Potential Funding:** Emergency Management Performance Grant (EMPG); Local municipal budget
    - **Estimated Cost:** $20,000
    - **Timeframe:** 2025-2028
    - **Status:** Upcoming (based on funding)
    - **Priority Level:** Medium
    - **Justification:** East Carbon/Sunnyside lacks detailed protocols for responding to severe drought conditions. This planning effort addresses the community's vulnerability by establishing clear response procedures, defining conservation requirements, and identifying alternative water sources, enabling more effective management of limited water resources during drought emergencies.

Severe Weather

1. Winter weather preparedness program for vulnerable populations.
    - **Description**: Develop and implement a comprehensive winter weather preparedness program targeting elderly residents and those with limited resources, including emergency heating assistance coordination, wellness checks during severe weather events, and distribution of emergency supply kits containing essentials for extended power outages.
    - **Responsible Party:** East Carbon-Sunnyside Emergency Management Coordinator (lead); Carbon County Aging Services
    - **Potential Funding**: Emergency Management Performance Grant (EMPG); Utah Division of Aging and Adult Services
    - **Estimated Cost:** $25,000
    - **Timeframe:** 2025-2027
    - **Status:** Upcoming (based on funding)
    - **Priority Level:** Medium
    - **Justification**: East Carbon/Sunnyside experiences winter storms that cause power outages and road closures, creating particular risk for the community's vulnerable populations including elderly residents (22.6%) and those with disabilities (22.7%). Historical severe weather events documented in Section 6.13.3.2 have isolated the community and caused power outages lasting

8+ hours. This program directly addresses documented severe weather impacts by ensuring at-risk residents have the resources and support needed during extended winter weather events.

2. Critical infrastructure winterization improvements.
    - **Description:** Implement winterization improvements to city water and wastewater infrastructure, including insulation upgrades for exposed pipes, installation of freeze protection systems at critical control points, and backup power improvements for lift stations to maintain service during severe winter weather events.
    - **Responsible Party:** East Carbon-Sunnyside Public Works Department
    - **Potential Funding:** FEMA Building Resilient Infrastructure and Communities (BRIC) Program; Utah Permanent Community Impact Fund
    - **Estimated Cost:** $150,000
    - **Timeframe**: 2026-2028
    - **Status:** Upcoming (based on funding)
    - **Priority Level:** Medium
    - **Justification:** Historical severe weather events in East Carbon/Sunnyside have caused infrastructure failures during extreme cold periods, resulting in service disruptions. The plan documents that critical infrastructure including water and wastewater systems have experienced operational disruptions during extreme cold events. These winterization improvements reduce long-term vulnerability by protecting critical systems from freeze damage during the severe winter weather conditions that regularly affect the community.

Infestation

Rationale for omission as priority hazard: While periodic infestations of grasshoppers and other pests have occurred in and around East Carbon/Sunnyside, these events have primarily affected agricultural areas rather than critical infrastructure or public health. The community has established protocols for addressing these incidents through county agricultural extension services, and historical data indicates minimal economic impact to the city itself. Given the limited direct vulnerability of municipal assets and the existing response frameworks, resources are directed toward hazards with more significant potential consequences to public safety and infrastructure.

7.2.10 Information Integration

1. **Past Integration (2018-2023)**: East Carbon/Sunnyside did not formally integrate the 2018 plan into land use planning mechanisms during this period. While the city referenced the plan for emergency response planning, it was not incorporated into the general plan, zoning ordinances, or formal capital improvement programming due to limited planning resources.
2. **Current Integration**: The city's 2024 subdivision ordinance update incorporated hazard mitigation elements, particularly improved road connectivity standards and engineering requirements that address emergency access concerns identified in the 2018 plan. The adopted PDMP will also influence the city's ongoing capital improvements program.

7.3 Helper City

7.3.1 Background

Helper City is a small municipality located in the Price River Valley, Helper City boasts a rich history as a former coal-mining town. Today, the city is known for its charming downtown area, which features well-preserved historic buildings and serves as a hub for art, culture, and tourism.

Helper City operates under a Mayor-Council form of government. The city is led by a mayor who serves as the chief executive and is responsible for the administration of the city.

7.3.2 Location & Extent

Helper is a city in Carbon County, Utah, United States, approximately 110 miles (180 km) southeast of Salt Lake City and 7 miles (11 km) northwest of the city of Price. Helper city is 1.81 square miles in total area.

7.3.3 Demographic & Population

Helper City's population is 2,112 according to the 2020 Census. The figure below, taken from the United States Census Bureau (https://data.census.gov, 2024) shows additional demographic data for Helper City.

7.3.4 Vulnerable Populations

HELPER - POPULATIONS AT RISK (2021)	
Population under 5	4.7%
Population over 65	18.1%
Population Non-White (all other races)	3.0%
Population Hispanic	6.4%
Population without a High School Diploma	4.8%
Population that speak English "Not Well"	0.0%
Population in "Deep Poverty"	2.3%

Families Below Poverty	4.7%
Families that are Single Mother Households and Below Poverty	0.8%
Households Receiving Food Stamps (SNAP)	7.4%
Population that "Did Not Work"	25.1%
Rentals where Gross Rent Exceeds 30% of Household Income	32.1%
Housing that are Mobile Homes	4.6%
Households that are Single Female with Children under 18	4.2%
Households with No Car	1.9%
Population over 65 and Living Alone	11.7%
Population with Disabilities	21.3%
Population without Health Insurance	6.6%

The estimates of vulnerable populations were generated by Headwaters Economics, and are based on data from the US Census, ACS 2021.

7.3.5 Specific Community Hazards & Vulnerabilities

Helper faces unique hazard risks due to its location and characteristics:

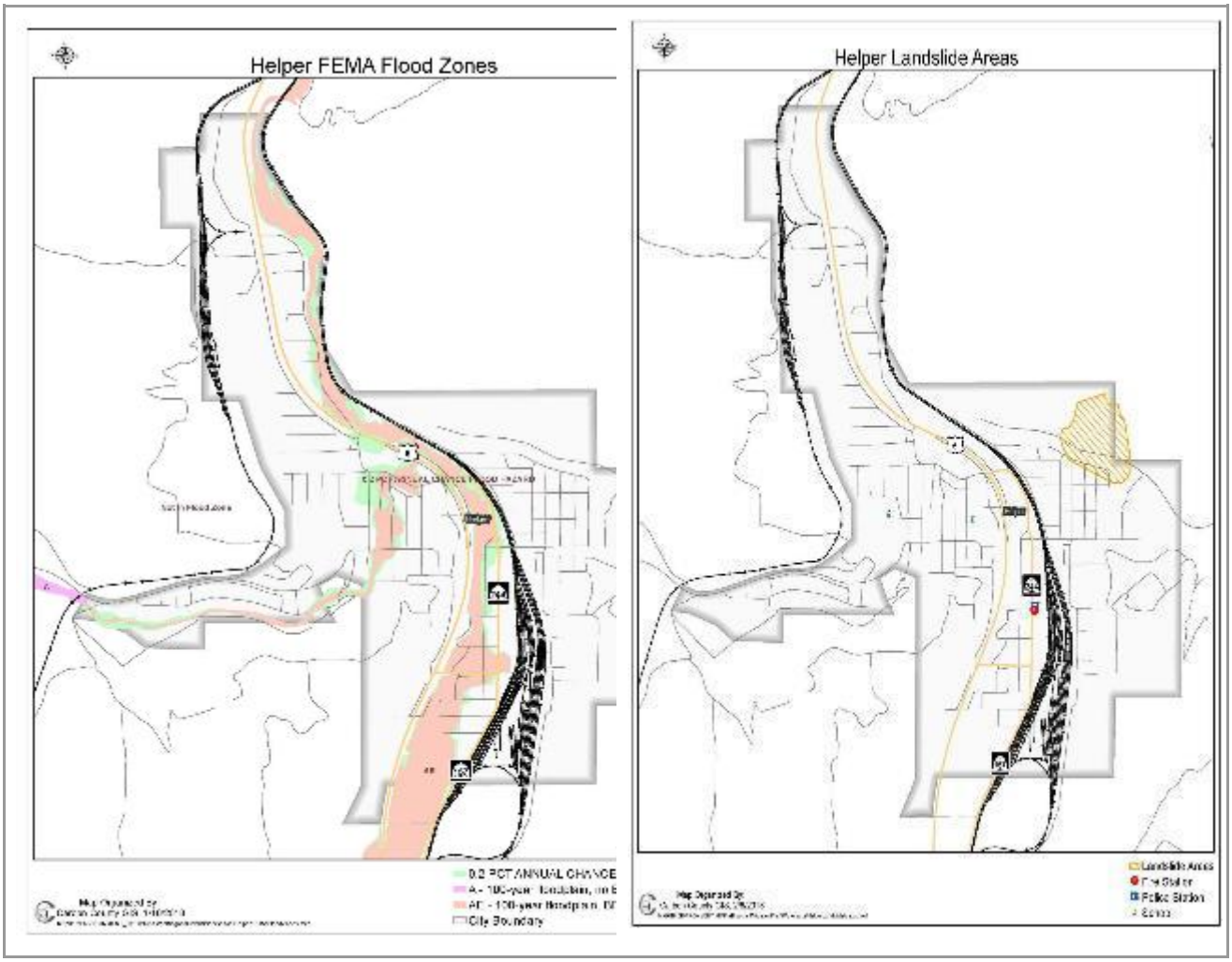
- **Earthquake:** Helper's historic district contains numerous unreinforced masonry buildings constructed in the early 1900s. Approximately 65% of the commercial structures and 45% of residential buildings in the downtown area were built prior to modern seismic codes. The city's aging utility infrastructure, including water and sewer lines installed before 1970, is vulnerable to ground movement, potentially affecting service to the entire community of approximately 2,100 residents. Critical facilities including the fire station and city hall could face functional impairment during seismic events.
- **Flooding:** The city's position along the Price River and multiple drainages creates distinct flood vulnerabilities. The historic downtown area contains numerous commercial structures built prior to modern floodplain regulations. Approximately 25 businesses along Main Street and 75 residential properties are located within the 100-year floodplain. During past flood events, the city has experienced infrastructure damage to water lines and roads, with economic impacts due to business closures and cleanup costs exceeding $500,000 during the 2014 flooding event.
- **Landslide:** Steep canyon walls and historic mining activities create unique slope stability concerns. Helper's position at the mouth of Price Canyon places critical water and transportation infrastructure at risk from rockfalls and slides. The city's water transmission line, which provides service to approximately 2,000 residents, crosses several areas with high landslide potential. Residential development along hillsides, particularly in the northeast neighborhoods, includes approximately 35 homes in moderate to high landslide risk zones.

- **Wildfire:** The surrounding vegetated hillsides pose significant wildfire risk to the community. Approximately 305 acres within city limits are classified as extreme wildfire risk areas, with an additional 188 acres in high-risk zones. The city's historic structures, many with wood components and built close together, create vulnerability to fire spread. Critical facilities including the water treatment plant and emergency services building are located near wildland interface areas, potentially compromising emergency response during wildfire events.
- **Drought:** Helper relies on surface water sources that are highly susceptible to drought conditions. The city's water rights portfolio has limited redundancy, creating vulnerability during prolonged dry periods. Water infrastructure, including treatment facilities and distribution systems, faces operational challenges during drought conditions when water quality can deteriorate. The community's historic landscaping and mature tree canopy are vulnerable to extended drought, with potential for increased tree mortality.
- **Severe Weather**: Helper's canyon location creates vulnerability to severe winter weather that can produce intense localized impacts. Flash flooding associated with a 2021 thunderstorm damaged portions of Main Street, requiring $75,000 in repairs, demonstrating the community's vulnerability to intense precipitation events funneled through the canyon. Winter storms create particular challenges for the city's historic downtown district, where narrow streets and aging infrastructure complicate snow removal and emergency response. Power outages during severe weather events affect critical facilities and vulnerable populations, with approximately 18.1% of residents over 65 and 21.3% with disabilities facing heightened risks during extended outages. The city's historic masonry buildings are vulnerable to damage from high winds and ice loading, with repair costs compounded by historic preservation requirements. Canyon winds can reach damaging velocities, affecting not only structures but also creating hazardous conditions on transportation corridors that serve as primary evacuation routes. The community's tourism economy creates additional vulnerability, as severe weather events that close Highway 6 or restrict access can trap visitors unfamiliar with local conditions.

Analysis of natural hazards in the community of Helper revealed that there could be potential losses associated with flooding and wildland fires. These hazards have varied potential to impact life, property, infrastructure, and other amenities within jurisdictional boundaries.

- Flooding. The lands along the Price River, Glen Canal, and Spring Canyon have been identified in both the 500-year and 100-year flood extents.
- Wildfire. The foothill and canyon areas surrounding Helper present a risk from wildfire. Historic wildfires have interrupted traffic on both Hwy 6 and Hwy 191.
- Drought. Potential for improved water systems and providing redundant water sources to ensure allocated amounts of water will be available to water users.

Figure 7.3.5.1. City of Helper Flood (left) and Landslide Risk (right) Carbon County GIS 2018.



7.3.6 Changes Since 2018 Plan

Helper City has experienced several notable changes affecting hazard vulnerability:

1. Population and Demographics:
    a. Population has remained relatively stable, with a slight decrease of 1.5% since 2018.
    b. Demographic shift toward more young professionals and artists has changed emergency communication needs.
    c. The growing tourist population has increased seasonal emergency response requirements.
2. Infrastructure Changes:
    a. Completion of the major Main Street renovation project has improved emergency access.
    b. Installation of new flood control measures along the Price River corridor.
    c. Upgrades to the water distribution system have enhanced drought resilience.
3. Economic Shifts:
    a. Transition to a tourism-based economy has modified hazard exposure patterns.

b. New businesses in historic buildings have increased the need for seismic mitigation.

c. Development of the arts district has changed emergency evacuation requirements.

4. Environmental Changes:

    a. Increased flood mitigation efforts due to changing precipitation patterns.

    b. Modified wildfire risk assessment due to vegetation changes.

    c. Enhanced slope stability monitoring due to changing weather patterns.

7.3.7 Development in Hazard-Prone Areas - Helper City

In the years since the previous hazard plan, most of the development in Helper City was infill and concentrated along Main Street redevelopment.

Helper City's Main Street renovation project, completed since the previous plan, has decreased the city's vulnerability to flooding through improved drainage infrastructure. Additionally, enhanced flood control measures along the Price River corridor have further reduced flood vulnerability in previously high-risk areas. The city's focus on revitalizing existing structures rather than expanding into new hazard-prone areas has maintained consistent vulnerability levels for other hazards while decreasing flood risk.

Helper City isn't expecting future development that would increase the community's overall vulnerability. Areas of expected growth are illustrated below.

Areas of expected change in Helper City 2023-2028.

7.3.8 Status of 2018 Mitigation Actions - Helper City

While the 2018 plan primarily took a countywide approach, Helper City participated in or led the following actions:

2018 Action	Role	Current Status	Explanation
F4: Excavate Spring Glen, Bull Wash	Lead	Completed	Part of 2019 EWP project.
WF1: Remove dead trees in WUI areas	Participant	Ongoing	Annual coordination with the County.
WF3: Build interface zone roads	Participant	Modified	Incorporated into the transportation plan.
WF5: Review building codes	Participant	Ongoing	Regular 3-year review cycle.

7.3.9 Present and Future Mitigation Strategies

Helper City employs a comprehensive mitigation strategy that includes:

- Infrastructure Projects:
  - Stormwater system improvements
  - Emergency facility upgrades
  - Bridge and culvert repairs
- Planning & Regulations:
  - Historic district preservation standards
  - Updated flood regulations
  - Emergency operations planning
- Natural Systems:
  - Stream corridor restoration
  - Slope stabilization
  - Native vegetation management
- Education/Awareness:
  - Historic property protection
  - Flood preparedness
  - Emergency notification systems

Note: *Each action was selected based on its effectiveness, feasibility, and ability to address multiple hazards where possible. (See Appendix M).*

7.3.9.1 Helper City Mitigation Strategies

Earthquake

1. Earthquake Mitigation Planning Integration
   - **Description**: Incorporate earthquake mitigation requirements into local planning documents, including the general plan and building codes, with specific emphasis on the city's historic district.
   - **Responsible Party**: Helper City Planning Department (lead); Helper City Building Official

- **Potential Funding Source**: Potential Funding Source: FEMA Hazard Mitigation Grant Program (HMGP); Local municipal budget
- **Estimated Cost**: $40,000
- **Timeframe**: 2025-2026
- **Status**: Planned
- **Priority Level**: Medium
- **Justification**: Helper City's concentration of historic masonry buildings creates unique earthquake vulnerability. This planning effort will establish standards for seismic retrofitting while preserving historic character.

Flooding

1. Price River Channel Improvements
    - **Description:** Design and construct streambed improvements and evaluate bridges/culverts on Price River to increase flood capacity and reduce overflow risks.
    - **Responsible Party:** Helper City Public Works Department (lead); Carbon County Engineering Department
    - **Potential Funding:** FEMA Flood Mitigation Assistance (FMA) Program; Utah Division of Water Resources
    - **Estimated Cost:** $5,000,000
    - **Timeframe:** 2027
    - **Status:** Upcoming (based on funding)
    - **Priority Level:** High
    - **Justification:** Helper City experiences significant flood vulnerability due to its location along the Price River. These improvements directly address flood capacity issues at known restriction points, protecting downtown businesses and residential areas.
2. Stormwater Management Ordinance Update .
    - **Description:** Update subdivision ordinance and development standards to incorporate modern stormwater management requirements that reduce runoff impacts.
    - **Responsible Party:** Helper City Planning and Zoning Department
    - **Potential Funding:** Local municipal budget
    - **Estimated Cost:** $14,000
    - **Timeframe:** 2024
    - **Status:** Underway
    - **Priority Level:** Medium
    - **Justification:** Helper's canyon setting concentrates stormwater runoff, increasing flood vulnerability. Updated regulations will ensure new development incorporates appropriate mitigation measures, reducing long-term flood risk.

Landslide

1. Implement Slope Stabilization Program for High-Risk Canyon Areas

- **Description**: Conduct engineering assessments of steep slopes adjacent to residential areas in Helper, particularly along the canyon walls, and implement prioritized stabilization measures including retaining walls, slope reinforcement, and drainage improvements.
- **Responsible Party:** Helper City Public Works Department (lead); Carbon County Engineering Department
- **Potential Funding Source**: FEMA Hazard Mitigation Grant Program (HMGP); Utah Geological Survey; Local Capital Improvement Fund
- **Estimated Cost:** $350,000-500,000 (phased implementation)
- **Timeframe:** Mid-term (2025-2027)
- **Priority** Level: High
- **Justification**: Helper City faces significant landslide risk due to its location at the mouth of Price Canyon where steep slopes and historical mining have created unstable conditions. Recent geological assessments have identified several high-priority areas where slope failure could directly impact residential neighborhoods and critical transportation corridors. This action addresses Helper's specific vulnerability by stabilizing these high-risk areas before they can impact life and property.

2. Develop Landslide Hazard Overlay Zone Ordinance
    - **Description**: Create and adopt a landslide hazard overlay zone ordinance that establishes special development and construction requirements for areas with identified landslide risk, including geological assessment requirements, drainage specifications, and vegetation preservation standards.
    - **Responsible Party:** Helper City Planning Department (lead); Helper City Council
    - **Potential Funding Source**: Local municipal budget; Utah Division of Emergency Management (DEM) technical assistance, Community Impact Board grant
    - **Estimated Cost:** $25,000-40,000 (for ordinance development and mapping)
    - **Timeframe:** Short-term (2025-2025)
    - **Priority** Level: Medium
    - **Justification**: Helper's canyon setting and mining history create unique landslide vulnerabilities that aren't adequately addressed through standard zoning. This targeted ordinance will ensure that future development in landslide-prone areas incorporates appropriate mitigation measures, reducing long-term risk to public safety and property while providing clear guidance to developers.

Wildland Fires

- Strategic Firebreak Development **Description:** Build roads between fire interface zones and residential areas to create defensible space and facilitate emergency access during wildfire events.
- **Responsible Party:** Helper City Public Works Department (lead); Carbon County Fire Department
- **Potential Funding:** Fire Management Assistance Grant; Utah Division of Forestry, Fire, and State Lands
- **Estimated Cost:** $500,000 (estimated based on similar projects)
- **Timeframe:** 2025-2028
- **Status:** Upcoming (based on funding)

- **Priority Level:** High
- **Justification:** Helper City's location at the mouth of Price Canyon creates unique wildfire vulnerability. These strategic firebreaks will protect residential areas from advancing wildfires and provide critical emergency access routes.

2. Drainage Excavation and Maintenance
    - **Description:** Excavate Spring Glen, Bull Wash, and Kenilworth Wash to reduce debris buildup and improve drainage capacity, reducing wildfire fuel and flood potential.
    - **Responsible Party:** Helper City Public Works Department (lead); Carbon County Engineering Department
    - **Potential Funding:** FEMA Building Resilient Infrastructure and Communities (BRIC) Program; Fire Management Assistance Grant
    - **Estimated Cost:** $750,000 (estimated based on similar projects)
    - **Timeframe:** 2025-2028
    - **Status:** Upcoming (based on funding)
    - **Priority Level:** Medium
    - **Justification:** These drainages pose significant wildfire risk to Helper due to accumulated vegetation and debris. Regular maintenance reduces available wildfire fuel and improves post-fire flood control.

Problem Soils

The city's development patterns and geological composition present minimal risk from problem soils compared to other hazards requiring immediate attention.

Dam Failure

Helper City has not prioritized dam failure as a hazard requiring specific mitigation actions because the city's geographic location and elevation provide substantial protection from dam inundation. While Helper is downstream from several dams, detailed inundation modeling demonstrates that potential failure scenarios would not directly impact city infrastructure or populated areas due to Helper's elevated position relative to the Price River channel and natural topographic features that would contain and redirect flows. Critical facilities including the fire station, city hall, and water treatment plant are located outside any potential inundation zones identified in dam failure analyses. The city maintains coordination with dam owners and emergency management agencies for early warning during dam safety incidents, but the geographic protection from inundation allows resources to be prioritized toward hazards with direct vulnerability to city assets and populations.

Drought

1. Develop new water tanks and work with water resources to improve the system and expand capacity.
    - **Description:** Develop new water tanks and work with water resources to improve the system and expand capacity to ensure reliable water supply during drought conditions.
    - **Responsible Party:** Helper City Public Works Department (lead); Price River Water Improvement District (PRWID)
    - **Potential Funding:** Utah Division of Water Resources; FEMA Building Resilient Infrastructure and Communities (BRIC) Program
    - **Estimated Cost:** $1,000,000
    - **Timeframe:** 2025-2028

- **Status:** Ongoing
- **Priority Level:** High
- **Justification:** Helper City's reliance on surface water sources makes it particularly vulnerable to drought impacts. This infrastructure improvement directly addresses the city's water security by increasing storage capacity and system resilience.

2. Plan for drought by updating the emergency operations plan.
    - **Description:** Update the city's emergency operations plan with specific drought response protocols, including water conservation measures, prioritization frameworks, and coordination procedures.
    - **Responsible Party:** Helper City Emergency Management Coordinator
    - **Potential Funding:** Local municipal budget
    - **Estimated Cost:** $20,000
    - **Timeframe:** 2025-2028
    - **Status:** Upcoming (based on funding)
    - **Priority Level:** Medium
    - **Justification:** Helper's drought vulnerability requires formalized response procedures to ensure efficient resource allocation during water shortages. This planning effort reduces impacts on residents and critical services.

Severe Weather

1. Critical facility backup power and winterization program.
    - **Description:** Install backup power systems and implement winterization improvements at critical city facilities including the public works building, water treatment facilities, and emergency operations center to ensure continued operations during severe winter storms and extended power outages.
    - **Responsible Party:** Helper City Public Works Department (lead); Helper City Emergency Management Coordinator
    - **Potential Funding:** FEMA Building Resilient Infrastructure and Communities (BRIC) Program; Utah Permanent Community Impact Fund
    - **Estimated Cost:** $200,000
    - **Timeframe:** 2026-2028
    - **Status:** Upcoming (based on funding)
    - **Priority Level:** Medium
    - **Justification:** Helper City's canyon location creates vulnerability to severe winter weather that can cause extended power outages and service disruptions. Section 6.13.3.2 documents the 2021 thunderstorm that caused $75,000 in Main Street damage, demonstrating severe weather impacts. This program addresses documented severe weather impacts by ensuring critical facilities can maintain operations during winter storms, protecting essential services for Helper's residents including vulnerable populations (18.1% over 65, 21.3% with disabilities) and historic downtown district.
2. Severe weather public education and early warning enhancement.
    - **Description:** Develop comprehensive severe weather preparedness education materials and enhance the city's emergency notification system with additional outdoor warning sirens and

integration with modern alert platforms to improve severe weather warning coverage throughout Helper.

- **Responsible Party:** Helper City Emergency Management Coordinator (lead); Carbon County Emergency Management Services
- **Potential Funding:** Emergency Management Performance Grant (EMPG); FEMA Hazard Mitigation Grant Program (HMGP)
- **Estimated Cost:** $75,000
- **Timeframe:** 2025-2027
- **Status:** Upcoming (based on funding)
- **Priority Level:** Medium
- **Justification**: Helper's historic building stock and vulnerable populations require enhanced warning systems and preparedness education for severe weather events. The canyon setting can intensify severe weather impacts and complicate emergency response. This program reduces risk by ensuring residents receive timely warnings and understand protective actions during severe weather, particularly protecting the elderly residents and those in older structures vulnerable to weather-related damage.

Infestation

Historical data indicates low vulnerability to significant infestations affecting public safety or infrastructure.

Multi-Hazard

1. Janet Street Underpass Improvement
    - **Description:** Improve Janet Street underpass to facilitate better emergency response and possible evacuations and improve surface infrastructure for more efficient roadways during hazard events.
    - **Responsible Party:** Helper City Public Works Department (lead); Carbon County Engineering Department
    - **Potential Funding:** FEMA Building Resilient Infrastructure and Communities (BRIC) Program; Utah Department of Transportation
    - **Estimated Cost:** $50,000
    - **Timeframe:** 2025-2025
    - **Status:** Ongoing
    - **Priority Level:** High
    - **Justification:** The Janet Street underpass is a critical evacuation route and emergency access point that becomes compromised during multiple hazard scenarios including flooding and wildfire. This improvement addresses a key vulnerability in Helper's emergency transportation network.
2. Critical Facilities Improvement
    - **Description:** Improve City's operational facilities by replacing existing buildings with new public works building, garage, and shop built to current safety standards.
    - **Responsible Party:** Helper City Public Works Department (lead); Helper City Administration
    - **Potential Funding:** FEMA Building Resilient Infrastructure and Communities (BRIC) Program; Carbon County Capital Improvement Fund

- **Estimated Cost:** $1,000,000
- **Timeframe:** 2025
- **Status:** Ongoing
- **Priority Level:** Medium
- **Justification:** Current operational facilities are vulnerable to multiple hazards including earthquakes, flooding, and severe weather. This improvement ensures critical city services can continue operating during disaster events.

7.3.10 Information Integration

1. **Past Integration (2018-2023):** Helper City had limited formal integration of the 2018 plan into planning mechanisms:
    a. Capital Improvement Planning: Specific infrastructure projects addressing flood risks along the Price River corridor were prioritized using hazard information from the 2018 plan.
    b. Land Use Review Procedures: The city incorporated flood vulnerability assessments from the 2018 plan when reviewing development proposals, though this was done informally rather than through ordinance revisions.
2. **Current Integration**: Helper City's 2024 subdivision ordinance update represents the first comprehensive integration of hazard mitigation principles into formal planning mechanisms, with specific provisions for road connectivity standards and engineering requirements addressing flood resilience and emergency access. The adopted PDMP will also influence the city's upcoming capital improvements program and planned general plan update.

7.4 Price City

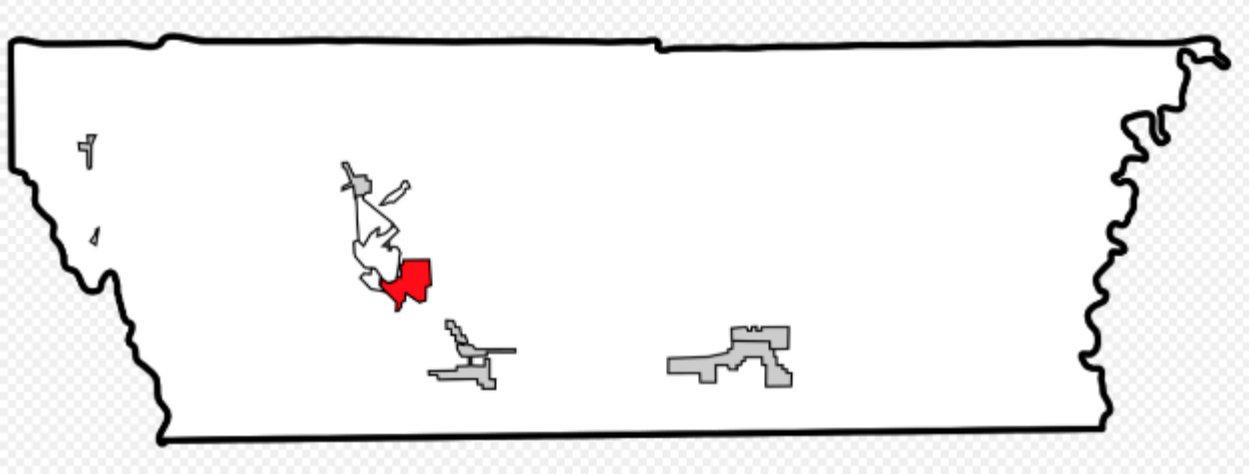
7.4.1 Background

Price City has evolved into a diverse economy driven by various sectors. Industries such as energy, education, healthcare, retail, and small businesses contribute to the city's economic vitality. The city is home to educational institutions like Utah State University Eastern, which enhances the educational landscape and provides opportunities for students. Price City operates under a Mayor-Council form of government. The mayor serves as the chief executive, overseeing the administration of the city, while the city council, composed of elected council members, contributes to policy-making and decision-making processes.

7.4.2 Location & Extent

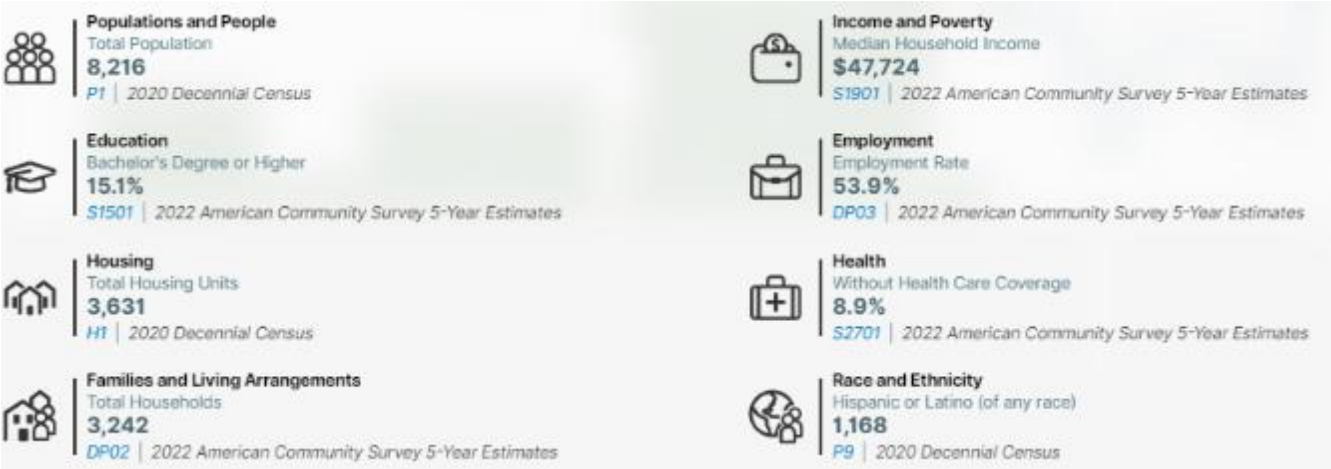
Price is located in west-central Carbon County at the northwestern edge of the Colorado Plateau. According to the United States Census Bureau, the city has a total area of 5.1 square miles (13.1 km2), all land.[6] The Price River, a tributary of the Green River, flows southeasterly through the city, and the San Rafael Swell is

to the south.



7.4.3 Demographic & Population

Price City's population is 8,216 according to the 2020 Census. The figure below, taken from the United States Census Bureau (https://data.census.gov, 2024) shows additional demographic data for Price City.



7.4.4 Vulnerable Populations

PRICE - POPULATIONS AT RISK (2021)	
Population under 5	7.2%
Population over 65	15.6%
Population Non-White (all other races)	13.5%
Population Hispanic	20.0%
Population without a High School Diploma	10.1%
Population that speak English "Not Well"	0.4%

Population in "Deep Poverty"	8.0%
Families Below Poverty	14.8%
Families that are Single Mother Households and Below Poverty	5.1%
Households Receiving Food Stamps (SNAP)	15.4%
Population that "Did Not Work"	26.4%
Rentals where Gross Rent Exceeds 30% of Household Income	53.7%
Housing that are Mobile Homes	4.6%
Households that are Single Female with Children under 18	7.7%
Households with No Car	7.0%
Population over 65 and Living Alone	17.7%
Population with Disabilities	17.4%
Population without Health Insurance	9.5%

The estimates of vulnerable populations were generated by Headwaters Economics, and are based on data from the US Census, ACS 2021.

7.4.5 Specific Community Hazards & Vulnerabilities

Price faces unique hazard risks due to its location and characteristics:

- **Earthquake:** As the county seat and largest population center, Price contains numerous critical facilities and infrastructure vulnerable to seismic events. The downtown area includes approximately 35 unreinforced masonry buildings constructed before modern seismic codes, including government facilities, businesses, and historic structures. Approximately 56 acres within city limits are in high-risk seismic zones, with vulnerable water, sewer, and transportation infrastructure serving the entire community of over 8,200 residents. Regional services including healthcare, government operations, and emergency response could be compromised during a major earthquake.
- **Flooding:** Price's stormwater system and development patterns create specific flood vulnerabilities. Areas along the Price River and multiple drainage channels, including Meads Wash, are within the 100-year floodplain. The Carbon Canal poses flood risk to the southern half of the city, including critical access routes to healthcare facilities on Westwood Boulevard. Historical flooding has impacted residential areas, particularly in the Westwood and Robertson subdivisions, with documented property damage and infrastructure impacts exceeding $1.6 million during the 2016 flooding event.
- **Wildfire:** The city's perimeter adjacent to undeveloped lands creates wildfire vulnerability, particularly in interface areas. Approximately 56 acres within city limits are classified as extreme wildfire risk areas, with an additional 637 acres in high-risk zones. Critical infrastructure including water treatment facilities and communication equipment is located in or near wildfire risk areas. Prevailing winds can push wildfire smoke into the city, affecting air quality and creating respiratory health concerns for vulnerable populations.

- **Dam Failure:** Price is vulnerable to potential failure of high-hazard dams including Scofield Reservoir Dam. The Cove Basin Park Dam within city limits has a "high" hazard rating, with failure potentially impacting areas along the Price River. The city's water treatment plant and critical transportation routes could be compromised during dam failure events. Approximately 75 essential businesses and government facilities serving the region are located within potential inundation zones.
- **Drought:** As the regional population center, Price's vulnerability to drought affects both residents and the surrounding service area. The city's water supply relies heavily on surface water sources that diminish during drought conditions. Water treatment operations face challenges during drought periods when source water quality can degrade. Economic impacts affect both residential users and the commercial sector, with water-dependent businesses particularly vulnerable during shortage periods.
- **Severe Weather:** Price experiences extreme temperature variations and is vulnerable to high wind events channeled through surrounding topography. Winter storms can create hazardous conditions throughout the city, affecting transportation and emergency response capabilities. The community has vulnerable populations including approximately 15.6% elderly residents and 17.4% with disabilities who face increased risks during extreme temperature events. Critical facilities including healthcare services may face operational challenges during severe weather, particularly during power outages.

The Price City storm water detention dam, owned by Price Municipal Corporation, is located at 3rd East and 1100 North. This dam was constructed in 1996. The dam is adjacent to existing residential subdivisions and undeveloped land. A second detention dam is in the planning stage at Meads Wash at approximately 1100 north. Price has completed an intercity stormwater master plan that is being implemented and developed into a stormwater utility.

Analysis of natural hazards in the community of Price City revealed that there could be potential losses associated with dam failure, flooding, drought, and wildland fires. These hazards have varied potential to impact life, property, infrastructure, and other amenities within jurisdictional boundaries.

- Dam Failure. Price City is vulnerable to failure of the Cove Basin Park Dam, which has a “high” hazard rating. This dam’s failure would impact the land along the Price River. The City also would experience flooding from the failure of the dam, which has a “moderate” risk rating.
- Flooding. The lands along the Price River have been identified with both the 500-year and 100-year flood extents. The drainages from the foothills also present the potential for flooding in a 100-year storm.
- Wildland Fires. Wildland fires pose a threat to Price City especially along the interface zone and residential areas.
- Drought. Potential for improved water systems and providing redundant water sources to ensure allocated amounts of water will be available to water users.

7.4.6 Changes Since 2018 Plan

Price City has experienced several notable changes affecting hazard vulnerability:

1. Population and Demographics:
    a. Overall population has decreased by approximately 2% since 2018.
    b. Student population changes at USU Eastern have affected seasonal vulnerability.
    c. The growing healthcare sector has modified critical facility considerations.

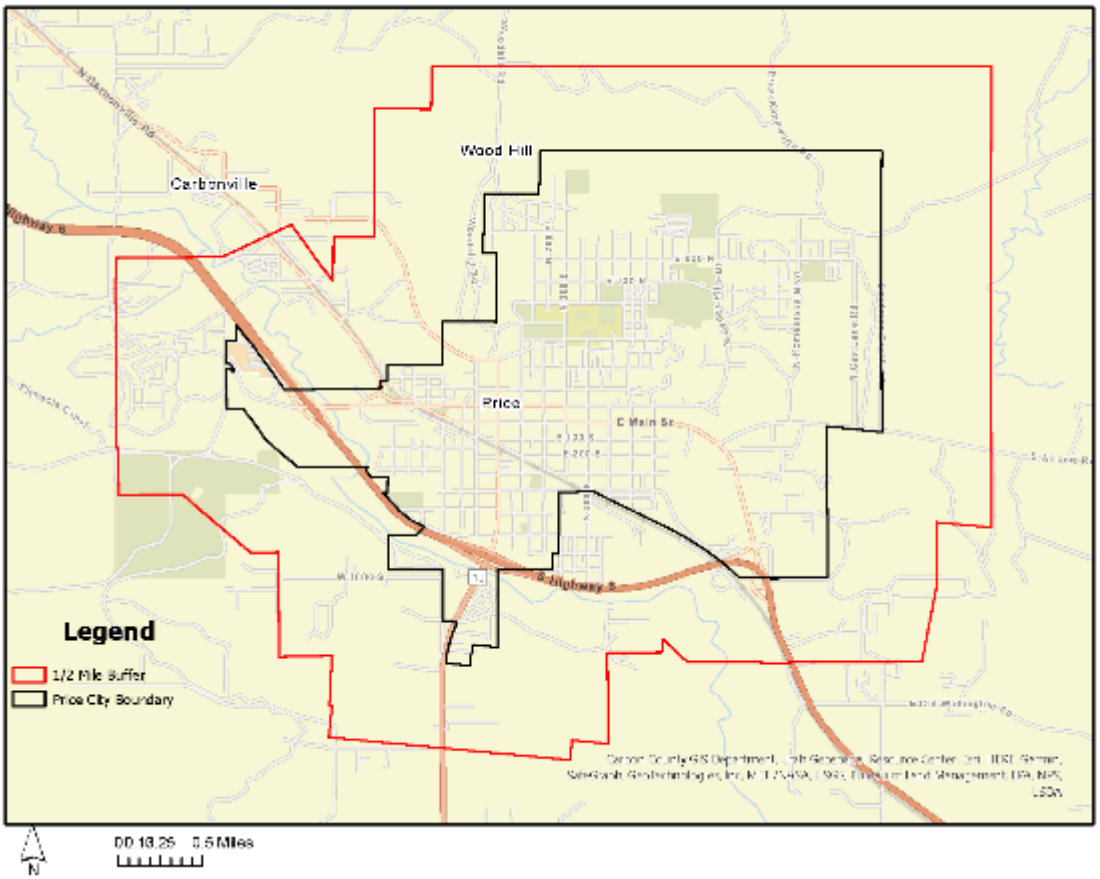
2. Infrastructure Changes:
    a. Completion of new stormwater management facilities along key corridors.
    b. Updates to emergency response facilities and equipment.
    c. Implementation of new water conservation infrastructure.
3. Economic Development:
    a. Expansion of commercial development along Highway 6 has changed hazard exposure.
    b. New industrial park development has modified emergency response requirements.
    c. Changes in downtown business composition have affected mitigation priorities.
4. Policy Implementation:
    a. Adoption of new building codes has enhanced seismic resilience.
    b. Implementation of updated flood management standards.
    c. Enhancement of wildfire mitigation requirements in interface areas.

7.4.7 Development in Hazard-Prone Areas - Price City

In the years since the previous hazard plan, most of the development in Price City was infill and concentrated along highway interchange.

In the years since the previous hazard plan, most of the development in Price City was infill and concentrated along the commercial corridor. This development pattern has maintained consistent vulnerability levels for most hazards. However, the completion of new stormwater management facilities along key corridors has specifically decreased vulnerability to flooding in previously high-risk areas. Additionally, water distribution system upgrades have enhanced drought resilience. These infrastructure improvements have resulted in a modest overall decrease in hazard vulnerability despite ongoing development.

Price City isn't expecting future development that would increase the community's overall vulnerability. Areas of expected growth are illustrated below.



Areas of expected change in Price City 2023-2028.
(The City expects to see infill growth as well as development within a half-mile of their current boundary).

7.4.8 Status of 2018 Mitigation Actions - Price City

While the 2018 plan primarily took a countywide approach, Price City participated in or led the following actions:

2018 Action	Role	Current Status	Explanation
F1: Build catch pond on Meads Wash	Lead	Modified	Design updated based on new studies.
F8: Install canal flood discharge points	Lead	Ongoing	Part of stormwater management.
SW4: Install/relocate generators	Co-Lead	Modified	Partially completed; remaining work in 2024 plan.
WF1: Remove dead trees in WUI areas	Participant	Ongoing	Annual coordination with the County.
WF3: Build interface zone roads	Participant	Modified	Incorporated into transportation planning.
WF5: Review building codes	Participant	Ongoing	Regular 3-year review cycle.

7.4.9 Present and Future Mitigation Strategies

Price City employs a comprehensive mitigation strategy that includes:

- Infrastructure Projects:
    - Water treatment facility improvements
    - Stormwater detention basins
    - Critical facility upgrades
- Planning & Regulations:
    - Development standards updates
    - Building code enforcement
    - Capital improvement planning
- Natural Systems:
    - Urban forestry management
    - Natural drainage preservation
    - Open space conservation
- Education/Awareness:
    - Water conservation programs
    - Emergency preparedness
    - Public safety communications

Note: *Each action was selected based on its effectiveness, feasibility, and ability to address multiple hazards where possible. (See Appendix M).*

7.4.9.1 Price City Mitigation Strategies

Earthquake

1. Seismic Retrofit Program for Historic Buildings
    - **Description:** Implement a phased assessment and retrofit program for historic buildings in downtown Price, prioritizing unreinforced masonry structures and critical public facilities.
    - **Responsible Party**: Price City Engineering Department (lead); Price City Building Department
    - **Potential Funding Source**: FEMA Building Resilient Infrastructure and Communities (BRIC) Program
    - **Estimated Cost**: $350,000-500,000 (phased implementation)
    - **Timeframe**: 2025-2027
    - **Status**: Planned
    - **Priority Level**: High
    - **Justification**: Price City has a significant inventory of historic buildings that predate modern seismic codes. These structures represent both cultural heritage and economic assets, while posing substantial safety risks during an earthquake. This systematic retrofit program directly addresses Price's specific vulnerability by prioritizing the most at-risk structures in the downtown core.
2. Critical Infrastructure Seismic Assessment and Hardening

- **Description:** Conduct comprehensive seismic vulnerability assessments of water, wastewater, and emergency service facilities, followed by prioritized retrofitting of identified vulnerabilities.
- **Responsible Party**: Price City Public Works Department (lead); Price City Engineering Department
- **Potential Funding Source**: FEMA Hazard Mitigation Grant Program; Utah Community Impact Board
- **Estimated Cost**: $75,000 (assessment phase); $250,000-400,000 (implementation phase)
- **Timeframe**: 2025-2028
- **Status**: Planned
- **Priority Level**: Medium
- **Justification**: As the county seat and population center, disruption to Price's critical facilities during a seismic event would have regional impacts. This action addresses the city's responsibility to maintain essential services during emergencies by systematically identifying and reinforcing critical infrastructure vulnerabilities.

Flooding

1. Build a catch pond on Meads Wash in Price City.
    - **Description:** Construct a stormwater detention basin on Meads Wash to capture and control flood waters during heavy precipitation events, reducing downstream flooding impacts.
    - **Responsible Party:** Price City Public Works Department
    - **Potential Funding:** Local municipal budget; Utah Division of Water Resources
    - **Estimated Cost:** $1,000,000
    - **Timeframe:** 2033-2035
    - **Status:** Planning
    - **Priority Level:** Medium
    - **Justification:** Meads Wash has historically been a source of flooding during intense precipitation events, causing property damage in downstream neighborhoods. This infrastructure project directly addresses this specific vulnerability by capturing and temporarily storing floodwaters, reducing peak flows through Price City and minimizing flood impacts to adjacent properties and infrastructure.
2. Install automation on flood discharge gates in the canal upstream from Price City and at Meads Wash.
    - **Description:** Implement automated control systems on flood discharge gates to enable remote operation and improve response times during flood events.
    - **Responsible Party:** Price City Public Works Department (lead); Price River Water Improvement District (PRWID)
    - **Potential Funding:** Local municipal budget; Utah Division of Water Resources
    - **Estimated Cost:** $5,000
    - **Timeframe:** 2025-2025
    - **Status:** Ongoing

- **Priority Level:** High
- **Justification:** Manual operation of flood control gates creates response delays during rapidly developing flood events. This automation project addresses Price City's flood vulnerability by enabling immediate response to changing conditions, allowing for more effective management of stormwater flows before they reach populated areas, and reducing the risk of gate operation failures during critical periods.

3. Minimize safety risk and property damage to Carbon County residents due to flooding by establishing, upgrading, and maintaining structural control measures.
    - **Description:** Establish, upgrade, and maintain structural flood control measures throughout Price City, including levees, channel improvements, and stormwater conveyance systems.
    - **Responsible Party:** Price City Public Works Department (lead); Carbon County Engineering Department
    - **Potential Funding:** FEMA Flood Mitigation Assistance (FMA) Program; Local municipal budget
    - **Estimated Cost:** $300,000 to $350,000 each
    - **Timeframe:** 2023-2030
    - **Status:** Ongoing
    - **Priority Level:** High
    - **Justification:** Multiple areas within Price City remain vulnerable to flooding despite existing controls. This ongoing program of structural improvements directly addresses these specific vulnerabilities by enhancing the city's physical flood defense infrastructure, protecting property and critical facilities in flood-prone areas, and ensuring the continued effectiveness of existing flood control structures through regular maintenance.
4. Stormwater System Capacity Enhancement
    - **Description:** Upgrade stormwater infrastructure in flood-prone areas, including increased capacity culverts, detention basins, and improved drainage channels with particular focus on the Meads Wash area.
    - **Responsible Party:** Price City Public Works Department (lead); Natural Resources Conservation Service
    - **Potential Funding:** NRCS; Local municipal budget
    - **Estimated Cost:** $708,000
    - **Timeframe:** 2018-2025
    - **Status:** Ongoing
    - **Priority Level:** High
    - **Justification:** Price City's location along the Price River and multiple drainages creates specific flood vulnerabilities that have resulted in property damage during past storm events. This infrastructure enhancement directly addresses documented capacity limitations in the existing stormwater system, particularly in areas with recurring flooding issues.
5. Update stormwater-related policy

- **Description**: Adopt policies to reduce stormwater runoff by updating the subdivision ordinance and development standards.
- **Responsible Party:** Price City Planning and Zoning Department
- **Potential Funding:** Local municipal budget
- **Estimated Cost:** $14,000
- **Timeframe:** 2024
- **Status:** Underway
- **Priority Level:** Medium
- **Justification:** Price City's location in a valley with multiple drainage channels makes it vulnerable to stormwater-related flooding, particularly as development continues to increase impervious surfaces. This policy update addresses the city's specific vulnerability by requiring future developments to implement advanced stormwater management practices, reducing runoff volumes and peak flows that currently strain the city's drainage infrastructure during heavy precipitation events.

6. Flood-Prone Property Acquisition Program
    - **Description:** Identify and acquire repetitively flooded properties in the 100-year floodplain, converting acquired properties to open space for flood storage and recreation.
    - **Responsible Party:** Price City Planning Department (lead); Price City Administration
    - **Potential Funding Source:** FEMA Flood Mitigation Assistance Program; Community Development Block Grant
    - **Estimated Cost:** $600,000-900,000
    - **Timeframe:** 2026-2029
    - **Status:** Planned
    - **Priority Level:** Medium
    - **Justification:** Several areas within Price City have experienced repeated flooding despite mitigation efforts. This property acquisition program provides a permanent solution for these high-risk properties while creating additional flood storage capacity, addressing both current vulnerabilities and providing adaptive capacity for future increased precipitation events.

Landslide

While landslides occur in Carbon County, geological studies indicate limited risk to developed areas within Price City boundaries, with potential hazard areas already restricted from development through existing land use regulations.

Wildland Fires

1. Vegetation Management in Interface Zones
    - **Description:** Establish regular vegetation management, including the creation of defensible space and fuel breaks, in identified high-risk wildland-urban interface areas adjacent to city limits.
    - **Responsible Party**: Price City Fire Department (lead); Price City Parks Department
    - **Potential Funding Source**: Fire Management Assistance Grant; Utah Division of Forestry, Fire and State Lands

- **Estimated Cost**: $85,000-120,000
- **Timeframe**: 2025-2027
- **Status**: Ongoing
- **Priority Level**: High
- **Justification**: The areas surrounding Price City contain vegetation that becomes particularly susceptible to wildfire during drought conditions. This active management strategy reduces fuel loads in strategic locations, creating defensible space that directly mitigates the city's vulnerability to encroaching wildfires.

Problem Soils

Existing building codes and development review processes in Price City effectively mitigate the moderate soil issues present, and historical data shows minimal structural impacts from problem soils within city limits.

Dam Failure

1. Develop Comprehensive Dam Failure Response and Recovery Plan
    - **Description:** Create a detailed emergency response and recovery plan for potential dam failure events affecting Price City, including coordination protocols with upstream dam operators, evacuation routes, early warning procedures, and critical facility protection measures.
    - **Responsible Party:** Price City Emergency Management Coordinator (lead); Carbon County Emergency Management Services
    - **Potential Funding Source:** FEMA Hazard Mitigation Grant Program (HMGP)
    - **Estimated Cost:** $40,000-60,000
    - **Timeframe:** Short-term (2025-2025)
    - **Priority Level:** High
    - **Justification:** As the county seat and population center, Price City would be significantly impacted by upstream dam failures, affecting critical regional services and infrastructure. This comprehensive planning effort addresses Price's specific vulnerability by establishing clear response protocols, ensuring coordination between multiple agencies, and protecting essential community services that the entire region depends upon during emergencies.
2. Conduct Infrastructure Protection Assessment for Dam Failure Inundation Areas
    - **Description:** Conduct a detailed engineering assessment of critical infrastructure within potential dam failure inundation zones and implement prioritized protection measures including floodwalls, elevated equipment platforms, watertight doors, and backup systems for essential services.
    - **Responsible Party:** Price City Public Works Department (lead); Price City Engineering Department
    - **Potential Funding Source:** FEMA Building Resilient Infrastructure and Communities (BRIC) Program; Utah Division of Water Resources
    - **Estimated Cost:** $75,000-150,000 (assessment phase); Implementation costs determined by assessment
    - **Timeframe:** Mid-term (2025-2027)
    - **Priority Level:** Medium

- **Justification:** Price City has substantial infrastructure located within potential dam failure inundation areas that provide essential services to the community and region. This assessment-based action specifically addresses this vulnerability by identifying and protecting critical systems in these zones, maintaining continuity of vital services even during inundation events, and reducing long-term recovery costs.

3. Develop and implement a comprehensive dam failure emergency response plan based on flood modeling data, including: (1) Identification of inundation zones; (2) Evacuation route planning; (3) Early warning system enhancement; and (4) Public education campaign about dam failure risks and response procedures.
    - **Description:** Create a detailed emergency response plan incorporating advanced flood modeling data that includes inundation zone mapping, evacuation route planning, early warning system enhancements, and public education about dam failure risks and response procedures.
    - **Responsible Party:** Price City Emergency Management Coordinator (lead); Carbon County Emergency Management Services
    - **Potential Funding:** FEMA Hazard Mitigation Grant Program (HMGP); Utah Permanent Community Impact Fund
    - **Estimated Cost:** $85,000 (estimate)
    - **Timeframe:** 2026-2028
    - **Status:** Planned
    - **Priority Level:** High
    - **Justification:** Price City's location downstream from multiple dams places it at risk from potential dam failures that could rapidly inundate portions of the city with minimal warning time. This comprehensive planning approach addresses this specific vulnerability by establishing clear protocols for emergency response, ensuring coordination between agencies, creating public awareness of risks, and developing evacuation procedures that could save lives during a dam failure event.

Drought

1. Work with water resources to improve the water system and provide redundant water sources: Construction to run new transmission and pipeline from Colton Springs.
    - **Description**: Construct a new water transmission pipeline from Colton Springs to increase water supply redundancy and capacity for Price City, ensuring reliable water delivery during drought conditions.
    - **Responsible Party:** Price City Public Works Department (lead); Price River Water Improvement District (PRWID)
    - **Potential Funding:** Utah Division of Water Resources; FEMA Building Resilient Infrastructure and Communities (BRIC) Program
    - **Estimated Cost:** $18,000,000
    - **Timeframe:** 2025-2028
    - **Status:** Ongoing
    - **Priority Level:** High
    - **Justification:** Price City's current water delivery system has limited redundancy, creating vulnerability to drought and water supply disruptions. This infrastructure project directly

addresses this vulnerability by establishing an additional water source and transmission capability, significantly enhancing the city's drought resilience and water security for its residents and businesses.

2. Work with water resources to improve the water system and provide redundant water sources: Construction of a new water treatment facility.
    - **Description:** Construct a modern water treatment facility with enhanced capacity and efficiency to ensure continued water quality and supply reliability during drought conditions.
    - **Responsible Party:** Price City Public Works Department (lead); Price River Water Improvement District (PRWID)
    - **Potential Funding:** Utah Division of Water Resources; FEMA Building Resilient Infrastructure and Communities (BRIC) Program
    - **Estimated Cost:** $40,000,000
    - **Timeframe:** 2025-2026
    - **Status:** Ongoing
    - **Priority Level:** High
    - **Justification:** As the regional population center, Price City's water treatment capabilities are critical infrastructure that could be strained during severe drought conditions. This significant capital project addresses the city's vulnerability to drought by modernizing treatment processes to handle variable water quality conditions that often occur during drought, while ensuring adequate capacity to meet community needs even with reduced source water availability.

Severe Weather

1. Municipal Infrastructure Resilience Enhancement
    - **Description**: Implement permanent infrastructure improvements to reduce severe weather vulnerabilities, including: (1) Installation of underground utility lines in critical areas to prevent wind and ice damage; (2) Structural reinforcement of essential municipal buildings to withstand high snow loads and wind speeds; (3) Implementation of backup power systems with permanent generators for critical facilities; and (4) Installation of weather-resistant communication towers and equipment that remain operational during severe weather events.
    - **Responsible Party**: Price City Public Works Department (lead); Price City Administration
    - **Potential Funding Source**: FEMA Building Resilient Infrastructure and Communities (BRIC) Program; FEMA Hazard Mitigation Grant Program; Local capital improvement funds
    - **Estimated Cost**: $650,000-850,000
    - **Timeframe**: 2025-2027
    - **Priority Level**: High
    - **Status**: Planned
    - **Justification**: Price City's critical infrastructure faces ongoing vulnerability to severe weather events that can cause extended service disruptions affecting the entire county. This hardening program addresses specific vulnerabilities by implementing permanent structural and system improvements that reduce long-term risk to essential services,

ensuring continued operation during extreme weather events and reducing recovery costs and community impacts.

2. Snow Removal Equipment and Storage Upgrades
    - **Description:** Upgrade the city's snow removal equipment fleet and expand covered storage facilities to ensure rapid response capability during major winter storm events.
    - **Responsible Party:** Price City Public Works Department
    - **Potential Funding Source:** FEMA Hazard Mitigation Grant Program; Local municipal budget
    - **Estimated Cost:** $175,000-225,000
    - **Timeframe:** 2025-2026
    - **Priority Level:** Medium
    - **Status:** In Progress
    - **Justification:** Price City's transportation corridors are critical connections for the entire county during severe weather events. This equipment upgrade addresses the city's specific vulnerability by enhancing its ability to maintain these critical transportation networks during intense winter storms.

Infestation

Historical patterns show minimal infrastructure or public health impacts from infestations within Price City boundaries, with regional pest management programs adequately addressing potential concerns.

7.4.10 Information Integration

1. **Past Integration (2018-2023)**: Price City was a stakeholder in the previous plan and integrated it in several specific ways: a. 2020 General Plan Update: Incorporated hazard maps and vulnerability assessments from the 2018 plan into the Safety Element, which guided land use decisions in flood and wildfire risk areas. b. Capital Improvement Planning: Used risk assessments from the 2018 plan to prioritize stormwater infrastructure improvements and emergency facility upgrades. c. Building Code Enforcement: Applied enhanced inspection protocols for properties in identified hazard zones based on the 2018 plan's recommendations.
2. **Current Integration**: The city's 2024 subdivision ordinance update incorporated hazard mitigation elements, particularly improved road connectivity standards and engineering requirements that enhance emergency access and stormwater management. The adopted PDMP will also continue to influence the city's ongoing capital improvements program.

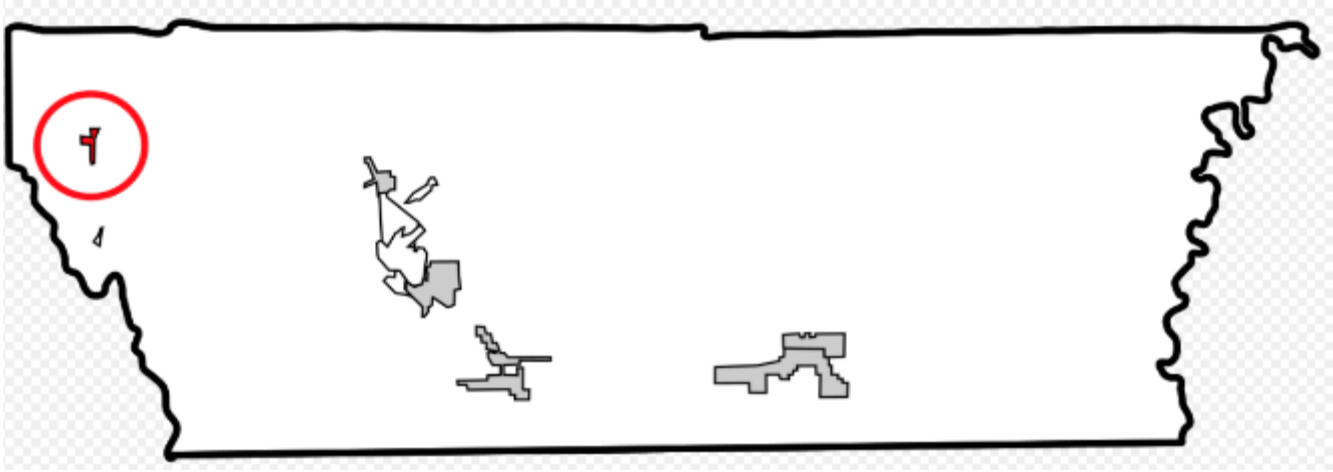
7.5 Scofield Town

7.5.1 Background

The town of Scofield is situated on the high ground two miles south of the reservoir of the same name, the oldest and largest of the major impoundments on the Wasatch Plateau.

7.5.2 Location & Extent

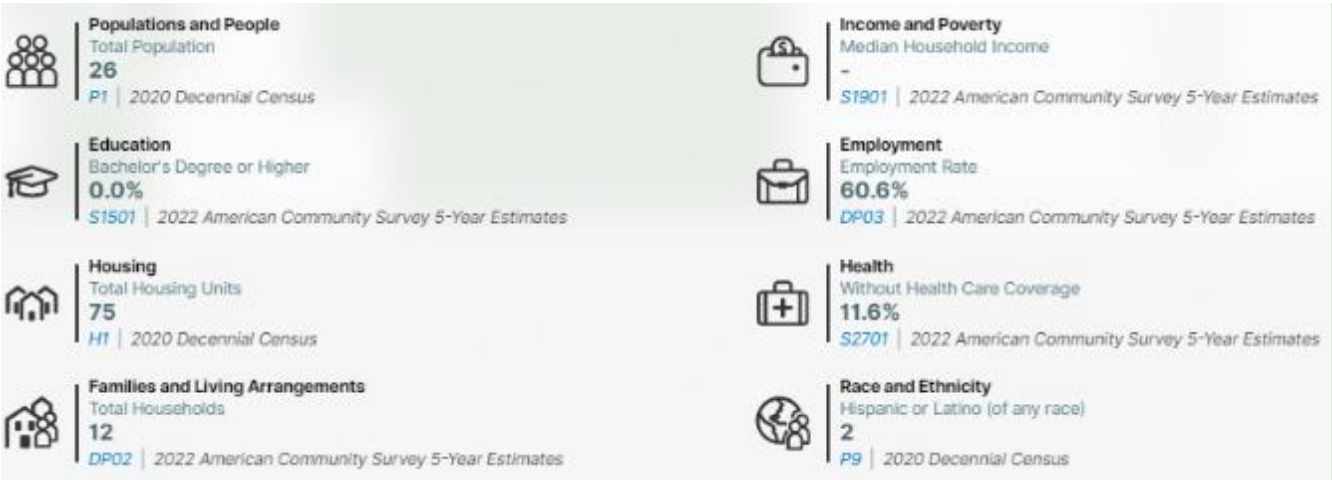
The town of Scofield is located in northwest Carbon County, at an elevation of 7,733 feet It is just under a square mile (0.92 square miles) of total area.



7.5.3 Demographic & Population

Once the most populous community in Carbon County, Scofield has shrunk to only a few permanent residents (today estimated to be 26 permanent residents). The community has witnessed recent growth from outsiders constructing summer vacation homes. It is the smallest incorporated area in Utah by population.

The figure below, taken from the United States Census Bureau (https://data.census.gov, 2024) shows additional demographic data for Scofield Town.



7.5.4 Vulnerable Populations

SCOFIELD - POPULATIONS AT RISK (2021)	
Population under 5	0.0%
Population over 65	23.2%
Population Non-White (all other races)	0.0%
Population Hispanic	0.0%
Population without a High School Diploma	9.7%
Population that speak English "Not Well"	0.0%
Population in "Deep Poverty"	0.0%
Families Below Poverty	0.0%
Families that are Single Mother Households and Below Poverty	0.0%
Households Receiving Food Stamps (SNAP)	35.3%
Population that "Did Not Work"	11.4%
Rentals where Gross Rent Exceeds 30% of Household Income	0.0%
Housing that are Mobile Homes	35.3%
Households that are Single Female with Children under 18	35.3%
Households with No Car	0.0%
Population over 65 and Living Alone	0.0%
Population with Disabilities	5.4%
Population without Health Insurance	10.7%

The estimates of vulnerable populations were generated by Headwaters Economics, and are based on data from the US Census, ACS 2021.

7.5.5 Specific Community Hazards & Vulnerabilities

Scofield faces unique hazard risks due to its location and characteristics:

- **Earthquake:** While Scofield has limited permanent structures, those present are vulnerable due to age and construction methods. Approximately 85% of permanent structures were built prior to modern seismic codes, with many utilizing unreinforced masonry or wood frame construction without adequate seismic reinforcement. The town's remote location would complicate emergency response during seismic events, potentially isolating the community's approximately 25 permanent residents

and numerous seasonal properties. Utility systems including water lines and electrical infrastructure lack modern seismic resilience features.

- **Flooding:** Scofield's position near multiple mountain drainages creates flood vulnerability, particularly during spring runoff and intense summer storms. Areas along Mud Creek and tributaries flowing into Scofield Reservoir are within the 100-year floodplain. The town's limited stormwater infrastructure has minimal capacity during heavy precipitation events. Historical flooding has damaged access roads, compromised septic systems, and caused property damage to residential structures, many of which are built at lower elevations near water bodies.
- **Landslide:** While most landslide depositions affect uninhabited areas south of town, several areas surrounding Scofield have steep slopes with documented instability. The limited access roads serving the community cross terrain with landslide potential, creating vulnerability for both evacuation and emergency response. Historical mining activities have created some subsurface instability in areas adjacent to developed properties. Heavy precipitation events and spring snowmelt can trigger small-scale land movement affecting access roads and utility corridors.
- **Wildfire:** The town's remote location within forest lands creates significant wildfire vulnerability. Limited evacuation routes could become compromised during wildfire events, potentially isolating both permanent residents and seasonal visitors. Water availability for fire suppression is limited, with few hydrants and primarily natural water sources. Approximately 90% of structures are constructed with combustible materials, and many properties lack adequate defensible space, increasing vulnerability to ember ignition and fire spread.
- **Dam Failure:** While Scofield is upstream of Scofield Reservoir Dam and not directly vulnerable to inundation, dam safety incidents could affect evacuation routes around the western shore and Clear Creek areas. Access for emergency services could be compromised during dam-related emergencies. The town's economy, which relies heavily on reservoir recreation, would face significant impacts from dam safety issues or drawdown requirements.
- **Drought:** Drought conditions directly impact Scofield through both water supply vulnerabilities and economic effects. The town's drinking water system relies on springs that can diminish during drought periods. Scofield Reservoir levels drop significantly during drought, affecting recreational opportunities that drive the local tourism economy. Fire risk increases substantially during drought periods, threatening both structures and evacuation routes with limited defensive resources available.
- **Severe Weather:** Scofield's high elevation (7,733 feet) and exposed location create vulnerability to extreme winter conditions. Winter storms frequently isolate the community when access roads become impassable due to snow accumulation or avalanche risk. Power outages during winter storms can last for extended periods due to access challenges for utility crews. The limited permanent population includes a high percentage of elderly residents (23.2%) who may require assistance during severe weather events.

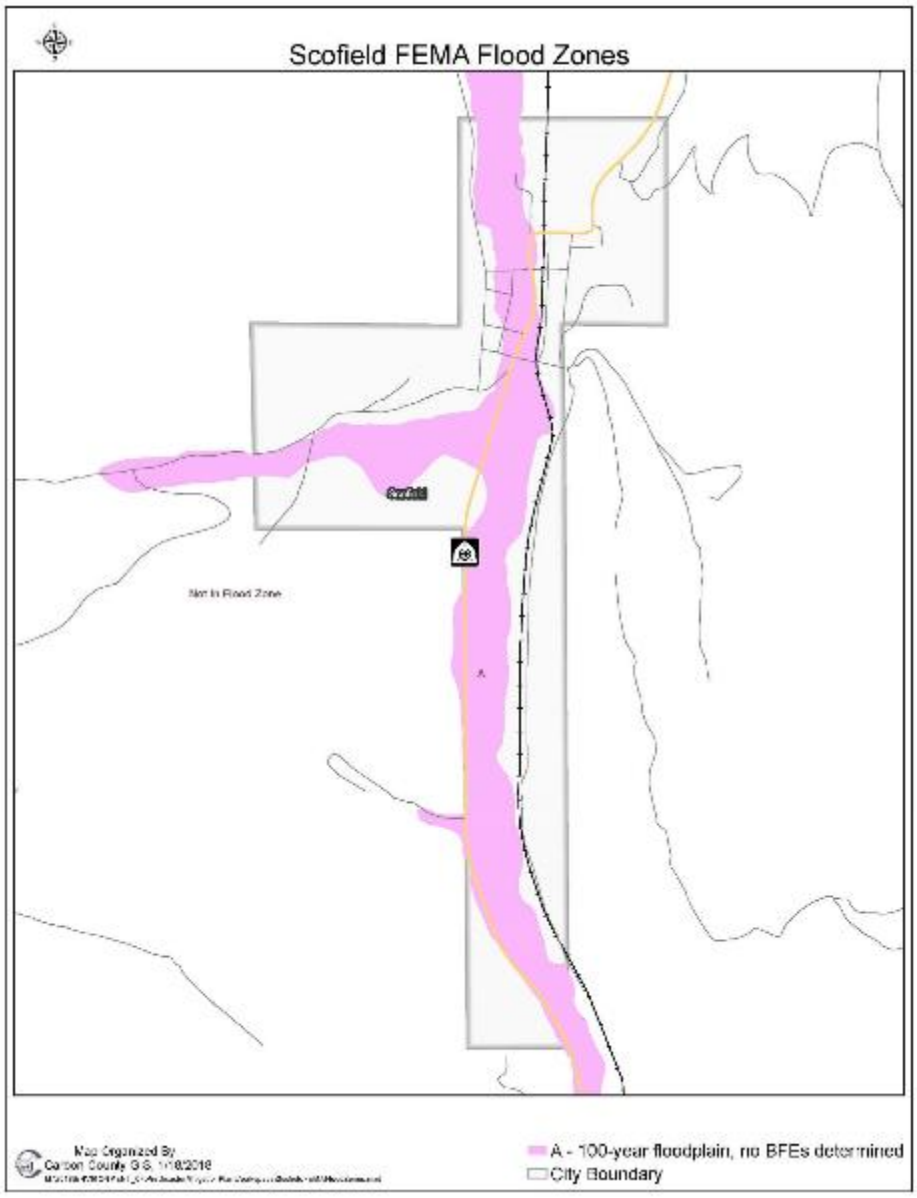
The Scofield Dam is 10 miles northeast of the town of Scofield. It was constructed in 1943-1946 and has a 73,600 acre-feet capacity at spillway crest. If it were to fail, it would exhibit a natural breech failure. The drainage basin area is 139.6 square miles with an outlet diameter of 60 inches and length of 300 feet. A maximum dam breach flow of 441,000 cubic feet per second. The dam has a high hazard rating with Federal inspections. The first downstream town of 23 miles is Castle Gate; however, that town was dismantled in 1974 (Utah Division of Water Rights).

Scofield Dam has had modifications for the dam's spillway during the period of 2007-2009. The work included the replacement of the spillway chute, the gate house on the dam crest and replacement of the highway bridge over the dam. The projected cost was figured for the Safety of Dams (SOD) costs $5.8

million dollars and is divided 85 percent Reclamation and 15 percent Carbon Water Conservancy District. The non-SOD portion of the work is being paid for by Utah Department of Transportation (UDOT) and the CWCD, with the latter paying $350,000 for control house and the former paying $670,000 for the highway work. The total cost of the modifications to Scofield Dam is approximately $7 million dollars. Works began in early July 2007. The work was completed during the last quarter of 2016 and the first quarter of 2017.

Analysis of natural hazards in the community of Scofield Town revealed that there could be potential losses associated with dam failure, flooding, wildland fires, earthquakes, and landslides. These hazards have varied potential to impact life, property, infrastructure, and other amenities within jurisdictional boundaries.

- Dam Failure. The Town is vulnerable to failure of the Scofield Dam, which has been assigned a "high" hazard rating. Should the structure fail, the inundation would directly impact their primary transportation network.
- Flooding. The lands along the Price River have been identified with a 100-year flood extent. The area surrounding the reservoir has a similar risk.
- Wildfire. The mountain environment of Scofield presents a risk from wildfire. Transportation access could be affected in particular.
- Earthquake. Though there have not been recent historic earthquakes in the area, Scofield is located along well constrained quaternary fault lines.
- Landslides. The land south of Scofield contains landslide depositions.
- Drought. Potential for improved water systems and providing redundant water sources to ensure allocated amounts of water will be available to water users.



7.5.6 Changes Since 2018 Plan

Scofield Town has experienced several notable changes affecting hazard vulnerability:

1. Population and Demographics:

a. Year-round population has remained stable at approximately 25 residents.
b. Significant increase in seasonal recreation users has changed emergency response needs.
c. The growing number of vacation homes has modified hazard exposure patterns.

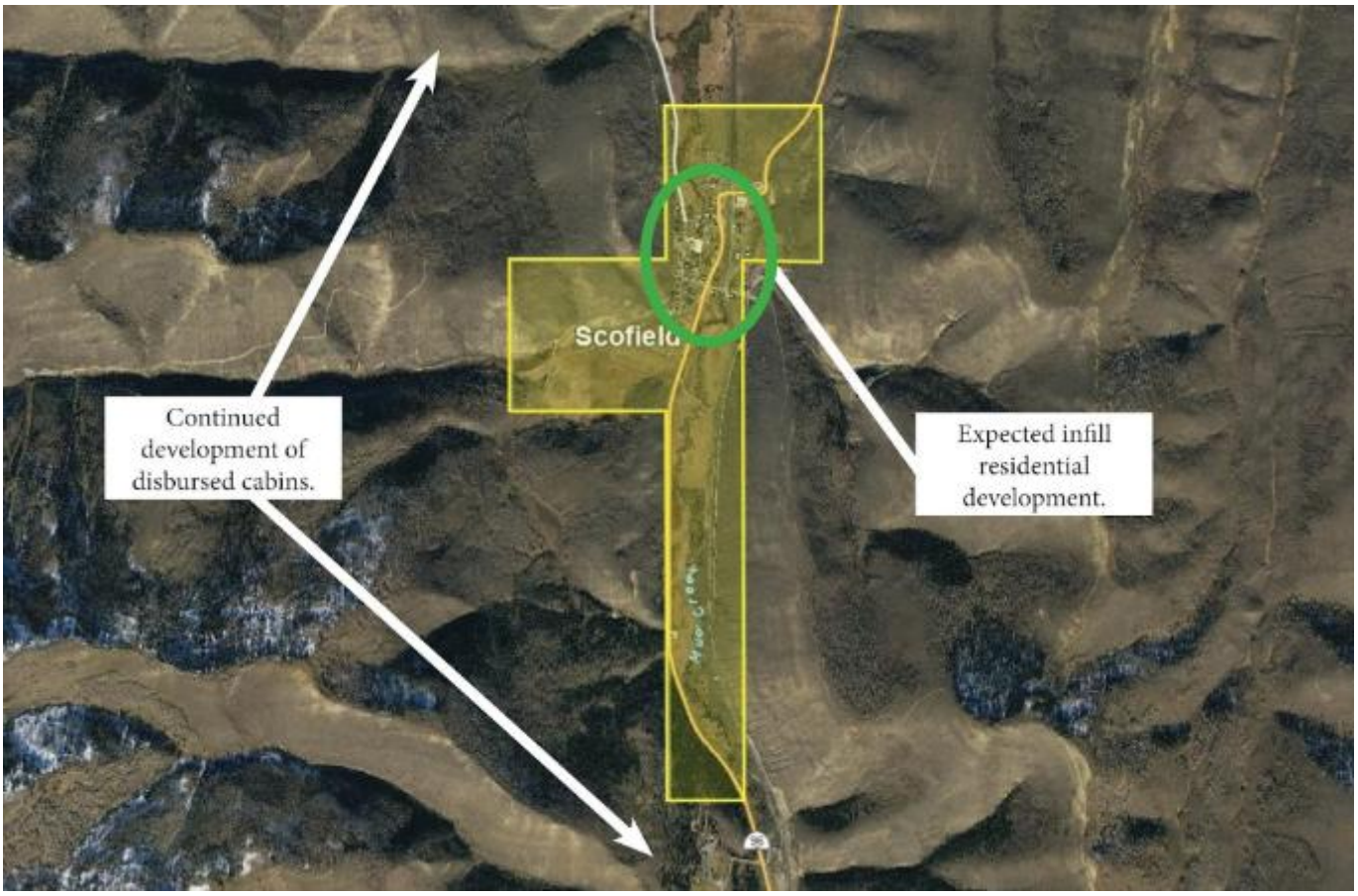
2. Infrastructure Changes:
    a. Implementation of new water system improvements.
    b. Enhanced emergency communication capabilities.
    c. Updates to evacuation route maintenance procedures.
3. Environmental Conditions:
    a. Modified dam safety protocols due to changing water patterns.
    b. Increased wildfire mitigation efforts in surrounding forest areas.
    c. Enhanced monitoring of snow load impacts on structures.
4. Recreational Impacts:
    a. Changes in tourism patterns have affected emergency response requirements.
    b. Modified reservoir management affecting flood potential.
    c. Enhanced seasonal road maintenance procedures.

7.5.7 Development in Hazard-Prone Areas - Scofield Town

In the years since the previous hazard plan, most of the development in Scofield was infill lots and with disbursed cabins that are outside of municipal limits.

The limited development in Scofield since 2018 has been primarily seasonal cabins outside municipal limits, maintaining consistent vulnerability levels. However, water system redundancy improvements have decreased drought vulnerability, while enhanced emergency access route maintenance has reduced vulnerability to wildfire and severe winter weather isolation. These targeted improvements have slightly decreased the town's overall vulnerability profile since the previous plan.

Scofield is not expecting future development that would increase the community's overall vulnerability. Areas of expected growth are illustrated below.



7.5.8 Status of 2018 Mitigation Actions - Scofield Town

While the 2018 plan primarily took a countywide approach, Scofield Town participated in or led the following actions:

2018 Action	Role	Current Status	Explanation
DF2: Work with Utah County on Scofield Lake roads	Co-Lead	Ongoing	Annual maintenance continues.
WF4: Fuel reduction below Scofield	Co-Lead	Completed	Project completed in 2022.
WF1: Remove dead trees in WUI areas	Participant	Ongoing	Annual coordination with the County.
WF5: Review building codes	Participant	Ongoing	Regular 3-year review cycle.

7.5.9 Present and Future Mitigation Strategies

Scofield Town employs a comprehensive mitigation strategy that includes:

- Infrastructure Projects:
  - Road improvements
  - Water system upgrades
  - Fire protection facilities

- Planning & Regulations:
    - Emergency operations planning
    - Building code updates
    - Development standards
- Natural Systems:
    - Watershed protection
    - Forest management
    - Erosion control
- Education/Awareness:
    - Recreation safety
    - Emergency preparedness
    - Water conservation

Note: *Each action was selected based on its effectiveness, feasibility, and ability to address multiple hazards where possible. (See Appendix M).*

7.5.9.1 Scofield Town Mitigation Strategies

Earthquake

1. Incorporate earthquake mitigation into local planning (Town general plan and codes).
    - **Description:** Integrate seismic risk assessment and mitigation measures into Scofield's general plan and building codes, including provisions for retrofitting historical structures and seismic standards for new development.
    - **Responsible Party:** Scofield Town Planning Department
    - **Potential Funding:** FEMA Hazard Mitigation Grant Program (HMGP); Local municipal budget
    - **Estimated Cost:** $40,000
    - **Timeframe:** 2025-2028
    - **Status:** Upcoming (based on funding)
    - **Priority Level:** Medium
    - **Justification**: While Scofield faces lower seismic risk than other hazards, updating planning documents ensures future development incorporates appropriate seismic considerations and protects the town's historic structures during earthquake events.

Flooding

1. Continue flood mitigation in Mud Creek and Winter Quarters Canyon
    - **Description:** Implement ongoing maintenance and debris removal in Mud Creek and Winter Quarters Canyon to maintain water flow capacity and prevent blockages during high runoff periods.
    - **Responsible Party:** Scofield Town Public Works Department (lead); Trout Unlimited (NGO partner)
    - **Potential Funding:** Federal and state grants; Environmental NGO partnerships
    - **Estimated Cost:** $15,000 annually for maintenance (estimate based on similar projects)

- **Timeframe:** 2025-2028
- **Status:** Ongoing maintenance (initial project complete)
- **Priority Level:** High
- **Justification:** Scofield's position near multiple mountain drainages creates unique vulnerability to debris-caused flooding. This maintenance program directly addresses the town's specific risk by ensuring critical waterways remain clear during spring runoff and storm events.

2. Adopt policies to reduce stormwater runoff
    - **Description:** Update subdivision ordinance and development standards to incorporate stormwater management requirements including retention basins, permeable surfaces, and drainage system specifications.
    - **Responsible Party:** Scofield Town Planning Department
    - **Potential Funding:** Local municipal budget
    - **Estimated Cost:** $14,000
    - **Timeframe:** 2025-2026
    - **Status:** Underway
    - **Priority Level:** Medium
    - **Justification:** Scofield's growing seasonal development creates increased impervious surfaces that contribute to runoff problems. These policy updates will ensure future development incorporates appropriate stormwater management techniques tailored to Scofield's mountain environment.

Landslides

1. Work with the county to map and address the community's vulnerability to landslides.
    - **Description:** Partner with Carbon County to conduct comprehensive mapping of landslide-prone areas affecting Scofield, including risk assessment, identification of vulnerable infrastructure, and development of mitigation recommendations.
    - **Responsible Party:** Scofield Town Planning Department (lead); Carbon County Engineering Department
    - **Potential Funding:** FEMA Hazard Mitigation Grant Program (HMGP); USGS Cooperative Matching Funds Program
    - **Estimated Cost:** $50,000
    - **Timeframe:** 2025-2028
    - **Status:** Upcoming (based on funding)
    - **Priority Level:** Medium
    - **Justification:** While most existing landslide areas affect uninhabited regions around Scofield, comprehensive mapping will ensure future development avoids hazardous zones and identify any previously unassessed risks to critical infrastructure serving the town.

Wildland Fire

1. Improve surface infrastructure for more efficient roadways

- **Description:** Enhance and maintain emergency access routes and evacuation corridors through road widening, surface improvements, vegetation management, and turnaround construction at strategic locations.
- **Responsible Party:** Scofield Town Public Works Department (lead); Carbon County Fire Department
- **Potential Funding:** Fire Management Assistance Grant; Utah Division of Forestry, Fire, and State Lands
- **Estimated Cost:** $800,000
- **Timeframe:** 2025-2029
- **Status:** Ongoing
- **Priority Level:** High
- **Justification:** Scofield's limited road network creates significant evacuation challenges during wildfire events. These infrastructure improvements directly address the town's specific vulnerability by ensuring all residents and visitors can safely evacuate during emergencies.

2. Fuel reduction in Spring Canyon and Lower Fish Creek
    - **Description:** Implement strategic fuel breaks and vegetation management in Spring Canyon and Lower Fish Creek areas to protect critical watersheds, infrastructure, and endangered fish habitat.
    - **Responsible Party:** Scofield Town Public Works Department (lead); Utah Division of Forestry, Fire, and State Lands
    - **Potential Funding:** Fire Management Assistance Grant; Utah Division of Forestry, Fire, and State Lands
    - **Estimated Cost:** $250,000 (estimate based on similar projects)
    - **Timeframe:** 2025-2028
    - **Status:** Upcoming (based on funding)
    - **Priority Level:** High
    - **Justification:** Scofield's position at the headwaters of critical watersheds creates specific vulnerability to post-fire impacts. This fuel reduction program protects both the immediate community and downstream resources by reducing wildfire intensity in strategic locations.

Problem Soils

Limited development activity and existing construction practices adequately address the minimal soil challenges in this area.

Dam Failure

1. Work with Utah County in maintaining roads around the westside of Scofield Lake and Clear Creek route areas within Carbon County.
    - **Description:** Collaborate with Utah County and Carbon County to ensure continuous maintenance and improvement of emergency evacuation routes around the western shore of Scofield Reservoir and Clear Creek areas, with particular focus on sections vulnerable to deterioration or blockage during dam-related emergencies.

- **Responsible Party:** Scofield Public Works Department (lead); Carbon County Road Department
- **Potential Funding:** Carbon County Capital Improvement Fund; Utah Department of Transportation
- **Estimated Cost:** $25,000 annually
- **Timeframe:** 2018-2028
- **Status:** Ongoing (Looking for funding)
- **Priority Level:** High
- **Justification:** While Scofield is upstream of the dam, dam-related emergencies would affect critical evacuation routes around the reservoir. This maintenance program ensures alternative evacuation options remain viable during dam safety incidents, protecting residents and visitors by maintaining reliable emergency access when primary routes may be compromised.

2. Public education and awareness campaign regarding dam failure risks and protective actions.
    - **Description:** Develop and implement a comprehensive public education program for residents and seasonal visitors about Scofield Dam risks, inundation zones, evacuation procedures, and protective actions. Include signage at key locations, annual informational mailings, and coordination with recreation management agencies to ensure visitors understand dam-related hazards.
    - **Responsible Party:** Scofield Town Administration (lead); Carbon County Emergency Management Services; Utah Division of Water Rights
    - **Potential Funding:** FEMA Hazard Mitigation Grant Program (HMGP); Utah Division of Emergency Management
    - **Estimated Cost:** $15,000
    - **Timeframe:** 2025-2027
    - **Status**: Upcoming (based on funding)
    - **Priority Level**: Medium
    - **Justification:** While Scofield is located upstream of Scofield Dam, dam-related emergencies could compromise evacuation routes around the western shore and affect the town's recreation-based economy. The town experiences significant seasonal population increases due to reservoir recreation, with many visitors unfamiliar with dam safety protocols. This education program reduces long-term vulnerability by ensuring residents and seasonal visitors understand dam failure risks and know how to respond appropriately during dam safety incidents, complementing the existing emergency access maintenance efforts.

Drought

1. Decrease wasteful water use through metering program
    - **Description:** Install comprehensive water metering systems on all primary and secondary water connections throughout Scofield to monitor usage, provide consumption data to users, and enable allocation management during drought conditions.
    - **Responsible Party:** Scofield Town Public Works Department (lead); Price River Water Improvement District (PRWID)

- **Potential Funding:** Utah Division of Water Resources; FEMA Building Resilient Infrastructure and Communities (BRIC) Program
- **Estimated Cost:** $450,000
- **Timeframe:** 2029
- **Status:** Ongoing
- **Priority Level:** Medium
- **Justification:** Scofield's limited water infrastructure and increasing seasonal demand create vulnerability to supply disruptions. This metering program addresses the specific risk by providing detailed usage data and enabling effective conservation measures during drought periods.

2. Implement water system redundancy improvements
    - **Description:** Replace the town's primary well and develop secondary water sources including spring development, additional wells, and interconnection options to ensure reliable water supply during drought conditions.
    - **Responsible Party:** Scofield Town Public Works Department (lead); Price River Water Improvement District (PRWID)
    - **Potential Funding:** Utah Division of Water Resources; FEMA Building Resilient Infrastructure and Communities (BRIC) Program
    - **Estimated Cost:** $750,000
    - **Timeframe:** 2025-2026
    - **Status:** Nearing completion
    - **Priority Level:** High
    - **Justification:** Scofield's dependence on a single water source creates significant vulnerability during drought conditions. This system redundancy project addresses the town's specific risk by providing alternative water sources if the primary supply is compromised.
3. Improve monitoring of the Town's water resources by developing a spring metering station.
    - **Description:** Construct a comprehensive spring monitoring and metering station to accurately measure water availability, track seasonal variations, and provide early warning of potential supply reductions.
    - **Responsible Party:** Scofield Town Public Works Department (lead); Price River Water Improvement District (PRWID)
    - **Potential Funding:** Utah Division of Water Resources; Carbon County Water Conservancy District
    - **Estimated Cost:** $80,000
    - **Timeframe:** 2025-2026
    - **Status:** Ongoing
    - **Priority Level:** Medium
    - **Justification:** Scofield's reliance on spring water creates the need for accurate monitoring to anticipate supply changes. This metering station provides essential data for proactive water management decisions during drought periods, directly addressing the town's vulnerability to supply fluctuations.

Severe Weather

1. Community Shelter Enhancement
    - **Description**: Upgrade the town hall/fire station to serve as a severe weather shelter with generator backup, heating system redundancy, emergency supplies, and communication equipment.
    - **Responsible Party**: Scofield Town Administration (lead); Carbon County Emergency Management
    - **Potential Funding Source**: FEMA Building Resilient Infrastructure and Communities Program; Community Impact Board Grant
    - **Estimated Cost**: $75,000-100,000
    - **Timeframe**: 2025-2027
    - **Priority Level**: Medium
    - **Status**: Planned
    - **Justification**: Scofield's remote location and extreme winter conditions create risk of isolation during severe weather events. This shelter enhancement ensures the community has a resilient facility for residents when travel becomes impossible or when power outages affect homes.

Infestation

Historical patterns show minimal infrastructure or public health impacts from infestations affecting the town's critical functions.

Multi-Hazards

1. Maintain local road improvement and wellhead protection
    - **Description:** Implement comprehensive road maintenance program including snow removal, drainage maintenance, and protection of critical water infrastructure despite limited municipal resources.
    - **Responsible Party:** Scofield Town Public Works Department
    - **Potential Funding:** Local municipal budget
    - **Estimated Cost:** $25,000 annually (based on similar road maintenance costs)
    - **Timeframe:** 2025-2028
    - **Status:** Ongoing
    - **Priority Level:** High
    - **Justification:** Scofield's remote location and small tax base create challenges for maintaining critical infrastructure. This program ensures essential services remain accessible during severe weather events despite limited municipal resources.
2. Improve emergency and administrative facilities by designing and constructing a new fire station/town hall facility and purchasing one fire engine.
    - **Responsible Party:** Scofield Town Administration (lead); Carbon County Emergency Management Services
    - **Potential Funding:** FEMA Building Resilient Infrastructure and Communities (BRIC) Program

- **Estimated Cost:** $1,500,000
- **Timeframe:** 2029
- **Status:** Ongoing

7.5.10 Information Integration

1. **Past Integration (2018-2023):** Due to extremely limited planning capacity and resources, Scofield Town did not formally integrate the 2018 plan into planning mechanisms such as ordinances, general plans, or formal capital improvement programs. While town leadership was aware of the plan, integration was limited to informal consideration during infrastructure discussions.
2. **Current Integration**: Scofield's 2024 subdivision ordinance update represents the first formal integration of hazard mitigation principles into planning mechanisms, with specific provisions for road connectivity standards and engineering requirements addressing emergency access concerns identified in the 2018 plan. The adopted PDMP will also serve as a reference for future capital project prioritization.

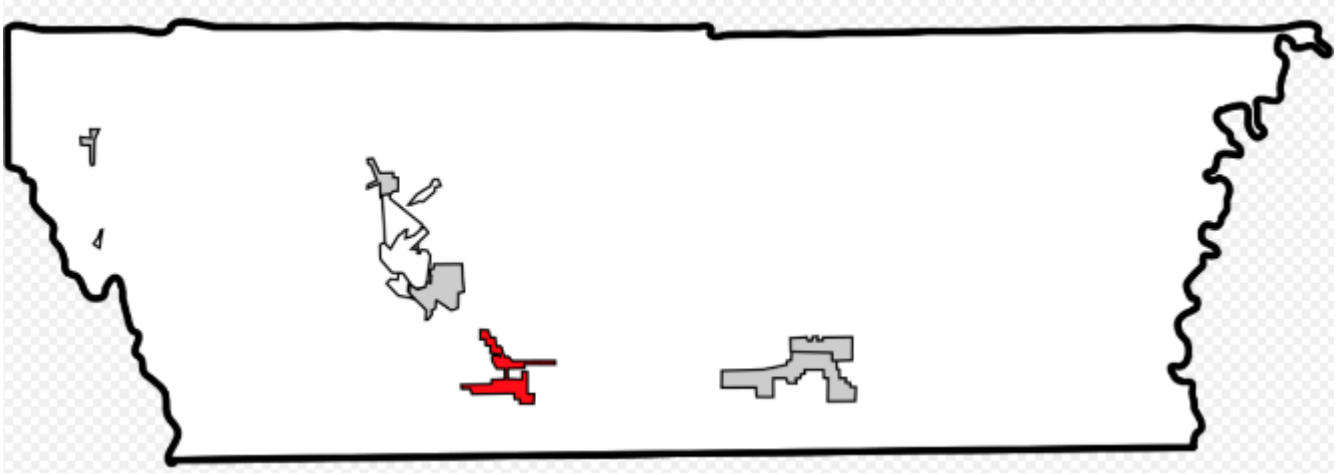
7.6 Wellington City

7.6.1 Background

As one of the numerous communities located along Highway 6, Wellington City serves as a gateway to outdoor recreation. Numerous travelers stop at the local gas stations and restaurants before heading to Nine-Mile Canyon, Moab, Goblin Valley, Salt Lake, or beyond.

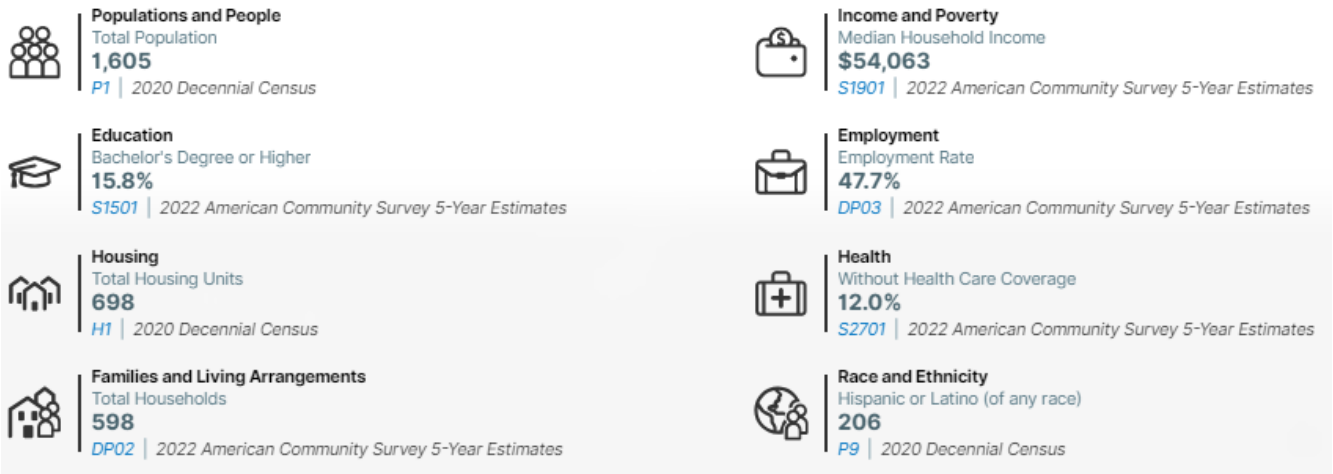
7.6.2 Location & Extent

The community is located in Castle Valley, in central Carbon County, Utah. It lies at the base of the Book Cliffs, which are northeast of the city. Wellington is bordered on the northwest by the community of Price, and on the east by Clarks Valley, on the South by the Price River, and on the north by the Book and Roan Cliffs of the West Tavaputs Plateau.



7.6.3 Demographic & Population

Wellington's population is 1,605 according to the 2020 Census. The figure below, taken from the United States Census Bureau (https://data.census.gov, 2024) shows additional demographic data forWellington.



7.6.4 Vulnerable Populations

WELLINGTON - POPULATIONS AT RISK (2021)	
Population under 5	6.5%
Population over 65	23.9%
Population Non-White (all other races)	7.0%
Population Hispanic	10.6%
Population without a High School Diploma	9.7%
Population that speak English "Not Well"	0.0%
Population in "Deep Poverty"	8.7%
Families Below Poverty	17.2%
Families that are Single Mother Households and Below Poverty	2.4%
Households Receiving Food Stamps (SNAP)	11.4%
Population that "Did Not Work"	31.5%
Rentals where Gross Rent Exceeds 30% of Household Income	37.3%
Housing that are Mobile Homes	19.5%
Households that are Single Female with Children under 18	2.9%

Households with No Car	3.4%
Population over 65 and Living Alone	11.9%
Population with Disabilities	25.2%
Population without Health Insurance	14.2%

The estimates of vulnerable populations were generated by Headwaters Economics, and are based on data from the US Census, ACS 2021.

7.6.5 Specific Community Hazards & Vulnerabilities

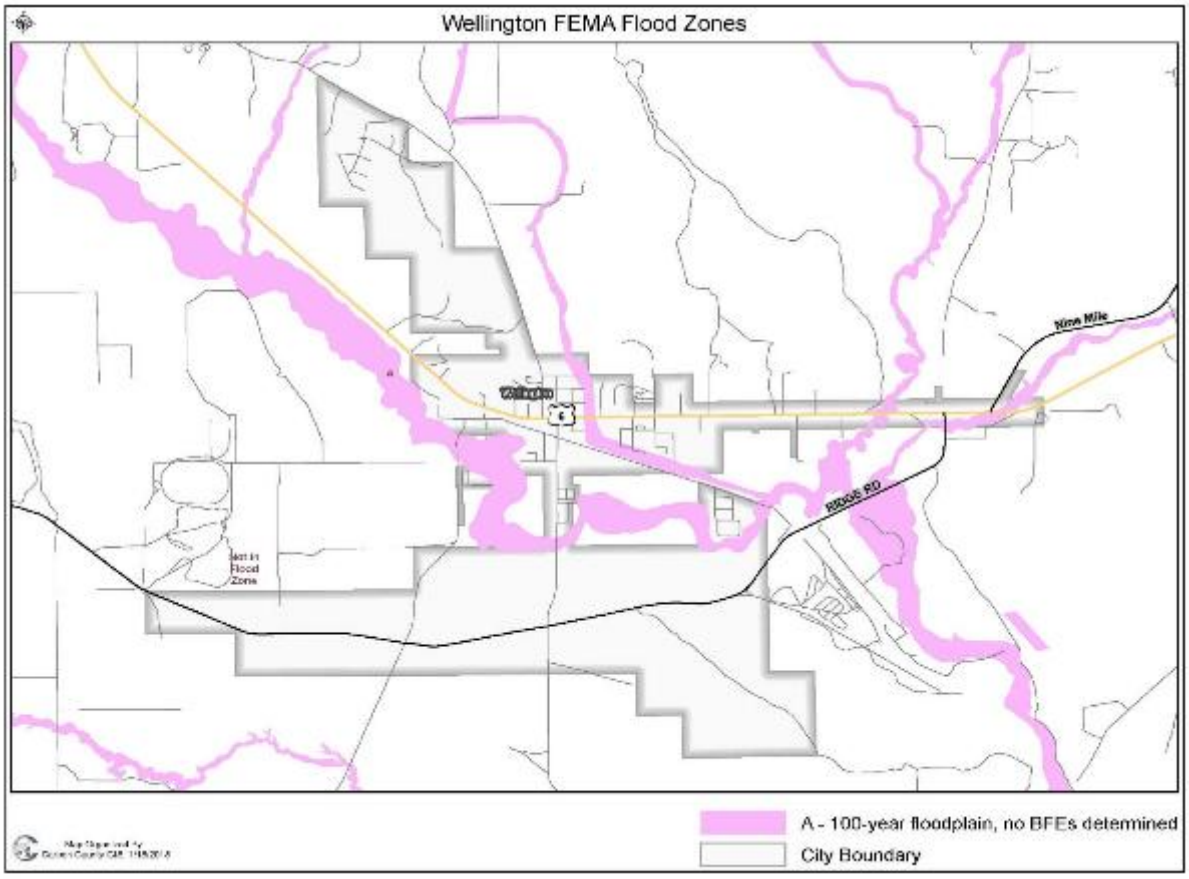
Wellington faces unique hazard risks due to its location and characteristics:

- **Flooding:** Wellington's position at the confluence of Coal Creek and the Price River creates specific flood vulnerabilities. Heavy precipitation events trigger flash flooding along Coal Creek and associated drainages, affecting residential areas and transportation infrastructure. The Wellington City Debris Basin (with a moderate hazard rating) requires regular maintenance to maintain capacity and function. Historical flooding has damaged stormwater infrastructure, flooded basements, and compromised road access, particularly during the 2002 and 2016 events when significant infrastructure damage occurred along Main Street.
- **Wildfire:** Wellington's eastern edge borders wildland areas that present increasing fire risk due to drought conditions and fuel accumulation. While no areas within city limits are classified as extreme wildfire risk, adjacent lands are in high-risk zones that could threaten the community. Limited fire response resources create vulnerability during rapidly spreading wildfire events. Prevailing winds can drive wildfire smoke into the community, affecting air quality and creating health concerns, particularly for vulnerable populations with respiratory conditions.
- **Drought:** Wellington's limited water resources create significant vulnerability during prolonged drought conditions. The city's aging water distribution system experiences considerable losses through leakage, exacerbating supply challenges during shortage periods. Agricultural operations surrounding the community face reduced yields and economic impacts during drought. Approximately 19.5% of housing consists of mobile homes, which often have less drought-resistant landscaping and higher vulnerability to water restrictions.
- **Severe Weather:** Wellington experiences extreme temperature fluctuations and is vulnerable to high wind events channeled through surrounding topography. Winter storms can make rural roads impassable, isolating outlying residents. The community has a high percentage of vulnerable populations, including approximately 23.9% elderly residents and 25.2% with disabilities, who face increased risks during extreme temperature events. Power outages during severe weather affect critical services and vulnerable populations, with limited backup generation capacity at essential facilities.

Analysis of natural hazards in the community of Wellington City revealed that there could be potential losses associated with flooding, wildland fires, and drought. These hazards have varied potential to impact life, property, infrastructure, and other amenities within jurisdictional boundaries.

- Flooding. The lands along the Price River have been identified with a 100-year flood extent. The drainages from the foothills also present the potential for flooding in a 100-year storm.
- Wildfire. The mountain environment of Scofield presents a risk from wildfire. Transportation access could be affected in particular.

- Drought. Potential for improved water systems and providing redundant water sources to ensure allocated amounts of water will be available to water users.



7.6.6 Changes Since 2018 Plan

Wellington City has experienced several notable changes affecting hazard vulnerability:

1. Population and Demographics:
    a. Population has decreased slightly by approximately 1% since 2018.
    b. The aging population trend has modified emergency response requirements.
    c. Changes in household composition have affected evacuation planning.
2. Infrastructure Changes:
    a. Completion of key stormwater management improvements.
    b. Updates to the water distribution system affecting drought resilience.
    c. Enhanced emergency warning systems implementation.
3. Economic Conditions:
    a. Changes in industrial activity have modified hazard exposure patterns.
    b. Shifts in commercial development along major corridors.
    c. Modified transportation patterns affecting emergency response.
4. Environmental Changes:

a. Enhanced flood mitigation efforts due to changing precipitation patterns.

b. Modified drought response capabilities.

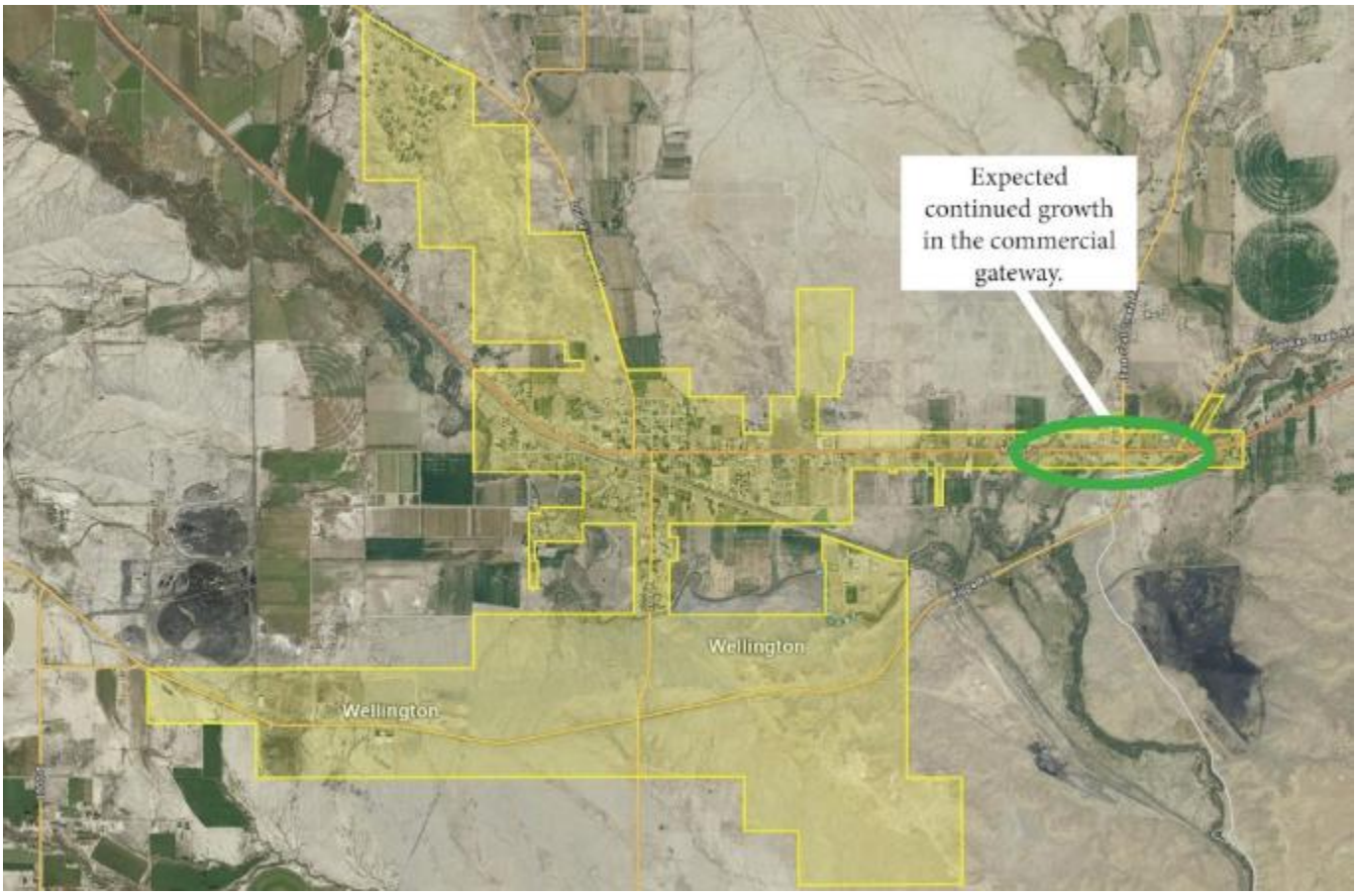
c. Updated wildfire risk assessment in interface areas.

7.6.7 Development in Hazard-Prone Areas - Wellington City

In the years since the previous hazard plan, most of the development in Wellington City was infill and concentrated along the commercial corridor.

Wellington City's focus on infill development along established commercial corridors has maintained consistent vulnerability levels for most hazards. Completed stormwater management improvements have decreased flood vulnerability in previously impacted neighborhoods, while water distribution system updates have enhanced drought resilience. These targeted infrastructure improvements have moderately decreased the city's vulnerability to flooding and drought, its most significant historical hazards.

Wellington City is not expecting future development that would increase the community's overall vulnerability. Areas of expected growth are illustrated below.



7.6.8 Status of 2018 Mitigation Actions - Wellington City

While the 2018 plan primarily took a countywide approach, Wellington City participated in or led the following actions:

2018 Action	Role	Current Status	Explanation

F9: Clean out Coal Creek confluence	Lead	Modified	Carried forward to 2024 plan.
WF1: Remove dead trees in WUI areas	Participant	Ongoing	Annual coordination with the County.
WF3: Build interface zone roads	Participant	Modified	Incorporated into transportation planning.
WF5: Review building codes	Participant	Ongoing	Regular 3-year review cycle.

7.6.9 Present and Future Mitigation Strategies

Wellington City employs a comprehensive mitigation strategy that includes:

- Infrastructure Projects:
  - Utility system improvements
  - Stormwater management
  - Emergency response facilities
- Planning & Regulations:
  - Updated ordinances
  - Building codes
  - Emergency planning
- Natural Systems:
  - Natural drainage preservation
  - Vegetation management
  - Erosion control
- Education/Awareness:
  - Public safety information
  - Emergency notifications
  - Conservation programs

Note: *Each action was selected based on its effectiveness, feasibility, and ability to address multiple hazards where possible. (See Appendix M).*

7.6.9.1 Wellington City Mitigation Strategies

Earthquake

Wellington City's geographical location, soil composition, and building stock present relatively lower seismic risk compared to other hazards, with limited historical earthquake impacts on the community and no major fault lines directly beneath developed areas.

Flooding

1. Install Flood Barriers in High-Risk Areas
   - **Description:** Install engineered flood barriers and improve runoff security in areas identified as highly susceptible to flooding, including neighborhoods east of Main Street.
   - **Responsible Party:** Wellington City Public Works Department (lead); Carbon County Engineering Department

- **Potential Funding:** FEMA Flood Mitigation Assistance (FMA) Program; Utah Division of Water Resources
- **Estimated Cost:** $350,000 (estimated based on similar flood barrier installations)
- **Timeframe:** 2025-2026
- **Status:** Ongoing
- **Priority Level:** Medium
- **Justification:** Wellington has specific low-lying areas that have experienced repeated flooding, particularly in older neighborhoods with inadequate stormwater infrastructure. This targeted approach addresses these vulnerable areas by providing physical barriers to protect properties and critical infrastructure during flood events.

2. Clean-out Coal Creek Confluence
    - **Description:** Clean out the confluence of Coal Creek and Woods Wash to reduce flooding by restoring flow capacity through both feeder streams and preventing blockages during high water events.
    - **Responsible Party:** Wellington City Public Works Department (lead); Natural Resources Conservation Service
    - **Potential Funding:** NRCS; Carbon County; City municipal budget
    - **Estimated Cost:** $500,000
    - **Timeframe:** 2026-2028
    - **Status:** Ongoing
    - **Priority Level:** High
    - **Justification:** Wellington's position at the confluence of Coal Creek, Woods Wash, and the Price River creates a specific flood vulnerability that directly impacts residential areas and critical infrastructure. This action addresses the city's unique vulnerability by preventing flow restrictions that have historically caused localized flooding during high runoff events.
3. Update Stormwater Management Standards
    - **Description:** Adopt policies to reduce stormwater runoff by updating the subdivision ordinance and development standards with enhanced requirements for retention, detention, and green infrastructure.
    - **Responsible Party:** Wellington City Planning and Zoning Department
    - **Potential Funding:** Local municipal budget
    - **Estimated Cost:** $14,000
    - **Timeframe:** 2024
    - **Status:** Underway
    - **Priority Level:** Medium
    - **Justification:** Wellington's aging stormwater system is inadequate for handling increasingly intense precipitation events. Updated standards would ensure new development incorporates modern stormwater management techniques, reducing strain on existing infrastructure and minimizing flood impacts in developed areas.

Landslide

Wellington's relatively flat topography with minimal elevation changes throughout the city limits creates naturally low landslide susceptibility, with no documented history of significant landslide events affecting developed areas.

Wildland Fires

1. Build Interface Zone Roads
    - **Description:** Construct and maintain access roads between wildland-urban interface zones and residential areas to create firebreaks and improve emergency response access during wildfire events.
    - **Responsible Party:** Wellington City Public Works Department (lead); Carbon County Fire Department
    - **Potential Funding:** Fire Management Assistance Grant; Utah Division of Forestry, Fire, and State Lands
    - **Estimated Cost:** $500,000 (estimated based on similar projects)
    - **Timeframe:** Ongoing
    - **Status:** Ongoing
    - **Priority Level:** Medium
    - **Justification:** Wellington's eastern edge borders wildland areas with increasing fire risk due to drought conditions. These access roads provide crucial firebreaks while simultaneously improving emergency vehicle access, evacuation routes, and response times during wildfire events at the city's perimeter.

Problem Soils

While some soil issues exist in Wellington, existing building codes and construction practices effectively address these challenges, and historical data shows minimal structural damage attributable to problem soils within city limits.

Dam Failure

Wellington is not located within primary inundation zones of any high-hazard dams, and potential impacts from upstream dam failures would be addressed through existing flood response protocols rather than requiring separate mitigation actions.

Drought

1. Water System Improvements
    - **Description:** Implement comprehensive water distribution system improvements including replacement of aging infrastructure, leak detection systems, and enhanced monitoring capabilities to minimize water loss during drought conditions.
    - **Responsible Party:** Wellington City Public Works Department (lead); Price River Water Improvement District (PRWID)
    - **Potential Funding:** Utah Division of Water Resources; FEMA Building Resilient Infrastructure and Communities (BRIC) Program
    - **Estimated Cost:** $7,500,000
    - **Timeframe:** 2025-2029

- **Status:** Ongoing
- **Priority Level:** High
- **Justification:** Wellington's vulnerability to drought is exacerbated by aging water distribution infrastructure with significant system losses. This comprehensive upgrade addresses this specific vulnerability by reducing water waste through leakage, improving pressure management, and enhancing the system's ability to operate efficiently during water shortages.

2. Plan for drought by updating the emergency operations plan.
    - **Description:** Develop a detailed drought response section within the city's emergency operations plan that establishes trigger points, response protocols, and coordination mechanisms between city departments and regional water authorities.
    - **Responsible Party:** Wellington City Emergency Management Coordinator
    - **Potential Funding:** Potential Funding: FEMA Hazard Mitigation Grant Program (HMGP); Local municipal budget
    - **Estimated Cost:** $20,000
    - **Timeframe:** 2025-2028
    - **Status:** Upcoming (based on funding)
    - **Priority Level:** Medium
    - **Justification**: Wellington lacks specific protocols for responding to escalating drought conditions, creating uncertainty in roles and responsibilities during water shortages. This action addresses this vulnerability by creating clear, coordinated response procedures that can be quickly implemented as drought conditions intensify.

Severe Weather

1. Establish Emergency Generator Program for Critical Facilities
    - **Description:** Purchase, install, and maintain emergency generators at key community facilities including city hall, fire station, and the community center (which serves as an emergency shelter), ensuring continuous operations during severe weather events.
    - **Responsible Party:** Wellington City Public Works Department (lead); Wellington City Emergency Management
    - **Potential Funding Source:** FEMA Building Resilient Infrastructure and Communities (BRIC) Program;
    - **Estimated Cost:** $75,000-125,000
    - **Timeframe:** Mid-term (2025-2026)
    - **Priority Level:** Medium
    - **Justification:** Wellington City's rural location makes it particularly vulnerable to power outages during severe weather events, potentially isolating the community during emergencies. This generator program ensures that critical government functions can continue during prolonged outages and provides residents with access to emergency services and shelter, directly addressing the city's specific vulnerability to service disruptions during severe weather.
2. Develop Severe Weather Shelter and Vulnerable Population Support Program

- **Description:** Establish designated severe weather shelters, create transportation assistance for vulnerable residents, implement check-in systems for elderly and disabled community members, and develop emergency supply caches at key locations throughout the city.
- **Responsible Party:** Wellington City Emergency Management (lead); Wellington City Police Department
- **Potential Funding Source:** Emergency Management Performance Grant (EMPG); Local municipal budget; Community donations
- **Estimated Cost:** $20,000-40,000
- **Timeframe:** Short-term (2025-2025)
- **Priority Level:** Medium
- **Justification:** Wellington has a high percentage of vulnerable residents including elderly (23.9%) and disabled (25.2%) populations who may need special assistance during severe weather events. This program specifically addresses these vulnerabilities by providing targeted support systems for at-risk community members, ensuring that limited emergency resources are directed to those with the greatest need during severe weather emergencies.

Infestation

Historical patterns in Wellington show minimal infrastructure or public health impacts from infestations, with existing county-level monitoring and response programs providing adequate protection.

Multi-Hazard

1. Implement priority utility projects (stormwater and electrical) to prevent hazards such as groundwater contamination and ineffective evacuation routing.
    - **Responsible Party:** Wellington City Public Works Department
    - **Potential Funding:** FEMA Building Resilient Infrastructure and Communities (BRIC) Program; Carbon County Capital Improvement Fund
    - **Estimated Cost:** $400,000
    - **Timeframe:** 2029
    - **Status:** Ongoing

7.6.10 Information Integration

1. **Past Integration (2018-2023):** Wellington City's integration of the 2018 plan into formal planning mechanisms was limited:
    a. Capital Improvement Programming: The city used flood risk information from the 2018 plan to prioritize specific stormwater management projects in its annual budgeting process.
2. Land Use Code Implementation: While no formal ordinance changes were made, staff informally referenced wildfire risk maps from the 2018 plan during development review processes.
3. **Current Integration**: Wellington's 2024 subdivision ordinance update represents the most substantial integration of hazard mitigation principles into planning mechanisms to date, with specific provisions for road connectivity standards and engineering requirements addressing emergency access and flood resilience. The adopted PDMP will also influence the city's ongoing capital improvements program and future land use code updates.

7.7 Carbon School District

7.7.1 Background

The Carbon School District operates several schools, including 6 elementary, 2 middle, and 1 high schools, as well as specialized programs to meet the diverse needs of students. The district offers a comprehensive curriculum that aligns with state standards, focusing on core subjects such as English, mathematics, science, and social studies. Additionally, the district provides a range of elective courses and extracurricular activities to enhance students' educational experiences. (Note that these are in cooperation with USU Eastern).

The Carbon School District emphasizes the importance of creating a safe and supportive learning environment. It employs highly qualified teachers and staff who are dedicated to fostering positive relationships with students and promoting their overall well-being.

7.7.2 Location & Extent

The Carbon School District is a public school district located in PRICE, UT and serves all of Carbon County residents.

7.7.3 Demographic & Population

The Carbon School District serves all residents of Carbon County. It has 3,513 students in grades PK, K-12 with a student-teacher ratio of 22 to 1.

7.7.4 Vulnerable Populations

Not directly applicable to the District. (See County-level statistics).

7.7.5 Changes Since 2018 Plan

The Carbon School District has experienced several notable changes affecting hazard vulnerability:

1. Facilities and Infrastructure:
    a. Completion of major seismic upgrades to key facilities.
    b. Implementation of enhanced security measures at all schools.
    c. Updates to emergency communication systems.
2. Population Served:
    a. Overall student population has decreased by approximately 4% since 2018.
    b. Changes in special needs student population affecting evacuation requirements.
    c. Modified staff emergency response training requirements.
3. Operational Changes:
    a. Implementation of new emergency response protocols.
    b. Enhanced coordination with local emergency services.
    c. Updates to facility use agreements for emergency situations.
4. Risk Assessment:
    a. Modified evaluation of seismic risks for aging facilities.
    b. Enhanced assessment of severe weather impacts on operations.

c. Updated analysis of technological hazards affecting schools.

7.7.6 Specific Stakeholder Hazards & Vulnerabilities

The Carbon School District faces specific vulnerabilities related to its facilities, student population, and educational mission:

- **Earthquake:** The District operates several older school facilities constructed before modern seismic codes, including buildings identified in the State K-12 Unreinforced Masonry (URM) study. Buildings like Mont Harmon Middle School and Castle Heights Elementary require seismic assessment and potential retrofitting. During school hours, these facilities contain high concentrations of vulnerable populations (children), creating significant life safety concerns during seismic events. Emergency response and evacuation are complicated by the need to account for and protect students with varying capabilities. The potential impacts include structural damage or collapse of school buildings causing potential injuries or casualties among students and staff, significant repair or replacement costs that could affect educational budgets for years, and loss of facilities that serve as community emergency shelters.
- **Flooding:** Several District facilities are located in or near flood-prone areas, particularly older buildings constructed before modern stormwater management requirements. School sites experience drainage issues during heavy precipitation events, affecting access, outdoor activities, and sometimes building integrity. Transportation routes used for student busing can be compromised during flood events, disrupting educational operations and creating safety concerns for student transportation. The potential impacts include structural damage to facilities, loss of educational materials and equipment, disruption of educational operations requiring temporary relocation of classes, and transportation challenges affecting student attendance.
- **Wildfire:** Multiple District facilities are located near wildland-urban interface areas with elevated fire risk. Outdoor athletic facilities and playgrounds in these areas are particularly vulnerable during fire season. School evacuation procedures must account for large student populations with varying needs, creating logistical challenges during rapidly developing wildfire events. Air quality degradation from regional wildfires frequently impacts school operations, outdoor activities, and student health, particularly for those with respiratory conditions.
- **Drought:** Extended drought conditions affect school operations through impacts on landscaping, athletic fields, and water-dependent educational activities. Water usage restrictions can create budgetary and operational challenges for facility maintenance. Several older school buildings utilize water-dependent cooling systems that face operational difficulties during severe water shortages or restrictions.
- **Severe Weather:** School facilities face operational challenges during severe weather events, including heating/cooling systems during temperature extremes and access issues during winter storms. Transportation routes used for student busing become hazardous or impassable during severe winter weather, affecting attendance and creating safety concerns. The District must make difficult decisions regarding school closures or delays that impact educational continuity and family schedules throughout the county.

Analysis of natural hazards in the community of the Carbon County School District revealed that there could be potential losses associated with multi-hazard, flooding, and drought. These hazards have varied potential to impact life, property, infrastructure, and other amenities within jurisdictional boundaries.

- **Flooding**. The lands along the Price River have been identified with a 100-year flood extent. The drainages from the foothills also present the potential for flooding in a 100-year storm.

- **Drought**. Potential for improved water systems and providing redundant water sources to ensure allocated amounts of water will be available to water users.

7.7.7 Status of 2018 Mitigation Actions - Carbon School District

The 2018 plan did not assign specific actions to the School District. However, the District participated in the following countywide initiatives:

2018 Action	Role	Current Status	Explanation
WF5: Review building codes	Participant	Ongoing	Regular facility safety reviews.
SW1: StormReady program	Participant	Completed	Coordination with County emergency management.

7.7.8 Development in Hazard-Prone Areas - Carbon School District

Since the 2018 plan, the Carbon School District has completed several facility projects that have affected its hazard vulnerability. The demolition of the 1936 school building and construction of a new middle school in Helper has significantly decreased seismic vulnerability by replacing an unreinforced masonry structure with a modern building meeting current seismic codes. Security enhancements at all schools have improved emergency response capabilities. Overall, these facility improvements have decreased the District's vulnerability to its primary hazards - earthquakes and severe weather - while maintaining consistent vulnerability levels for other hazards.

7.7.9 Present and Future Mitigation Strategies

The Carbon School District employs a comprehensive mitigation strategy that includes:

- Infrastructure Projects:
  - Facility structural improvements
  - Emergency systems upgrades
  - Access and safety enhancements
- Planning & Regulations:
  - Emergency operations procedures
  - Facility assessment protocols
  - Safety standards
- Natural Systems:
  - School grounds management
  - Natural hazard buffers
  - Drainage improvements
- Education/Awareness:
  - Staff emergency training
  - Student safety education
  - Parent communication systems

Note: *Each action was selected based on its effectiveness, feasibility, and ability to address multiple hazards where possible. (See Appendix M).*

7.7.9.1 Carbon School District Mitigation Strategies

Earthquake

1. Implement a phased seismic retrofit program for Unreinforced Masonry Buildings (URMs)
    - **Description:** Conduct comprehensive structural assessments of Mont Harmon Middle School and Castle Heights Elementary by December 2025, followed by prioritized retrofitting based on occupancy and structural risk.
    - **Responsible Party:** Carbon School District Facilities Department (lead); Utah Division of Facilities Construction and Management
    - **Potential Funding:** School District Capital Fund; Utah School Building Program; FEMA Building Resilient Infrastructure and Communities (BRIC) Program
    - **Estimated Cost:** $15,000,000 (estimate based on similar retrofitting projects)
    - **Timeframe:** 2025-2029
    - **Status:** Planned
    - **Priority Level**: High
    - **Justification**: The Carbon School District faces significant concerns with several older school buildings that may not meet current seismic standards, particularly those built with unreinforced masonry. This action directly addresses the District's responsibility to ensure student safety during seismic events by systematically strengthening vulnerable buildings based on professional engineering assessments.
2. Enhance Earthquake Emergency Response and Evacuation Plans
    - **Description**: Update the District's earthquake response protocols, conduct regular evacuation drills at all schools, install seismic shutdown systems for utilities, and establish clear procedures for student reunification following a seismic event.
    - **Responsible Party:** Carbon School District Safety Coordinator (lead); School Principals
    - **Potential Funding Source**: Emergency Management Performance Grant (EMPG); School District operational budget
    - **Estimated Cost:** $15,000-30,000
    - **Timeframe:** Short-term (2025-2025)
    - **Priority** Level: Medium
    - **Justification**: Even with structural improvements, comprehensive emergency planning is essential to minimize injuries during seismic events in school facilities. This action ensures that staff and students are prepared to respond appropriately during earthquakes, addresses the District's specific vulnerabilities associated with coordinating evacuations across multiple facilities, and establishes clear procedures for reuniting students with families.

Flooding

1. Address drainage issues at school buildings built prior to current stormwater standards
    - **Description:** Identify and resolve drainage problems at older school facilities by improving roof drainage systems and implementing ground drainage collection and disbursement solutions that direct water away from structures.
    - **Responsible Party:** Carbon School District Facilities Department

- **Potential Funding:** FEMA Flood Mitigation Assistance (FMA) Program; School District Capital Fund
- **Estimated Cost:** $100,000
- **Timeframe:** 2025-2030
- **Status:** Upcoming (based on funding)
- **Priority Level:** Medium
- **Justification:** Several of the district's older facilities experience drainage issues during heavy precipitation events, creating maintenance problems and potential for water damage. This action directly addresses the vulnerability of district buildings to localized flooding impacts, protecting both building integrity and educational operations.

Landslide

School facilities are not located in areas with significant landslide risk based on geological assessments and historical patterns, making specific mitigation actions unnecessary beyond standard site selection protocols.

Wildland Fire

1. Implement Vegetation Management Program for School Properties
    - **Description**: Create defensible space around all school facilities through regular removal of flammable vegetation, maintenance of fire breaks, and strategic landscaping with fire-resistant plants.
    - **Responsible Party**: Carbon School District Facilities Department (lead); Local Fire Departments
    - **Potential Funding Source**: FEMA Building Resilient Infrastructure and Communities (BRIC) Program; School District Maintenance Budget
    - **Estimated Cost:** $25,000-40,000 annually
    - **Timeframe**: Ongoing (2025-2029)
    - **Status**: Planned
    - **Priority Level**: Medium
    - **Justification**: Several district facilities are located near wildland-urban interface areas with elevated fire risk. This program directly addresses the vulnerability of school properties to wildfire spread by creating defensible space and reducing fuel loads around buildings, protecting both physical assets and ensuring continued educational operations.

Problem Soils

District facilities are constructed following robust engineering standards that account for soil conditions, with geotechnical assessments conducted prior to any new construction, effectively mitigating this risk without need for additional actions.

Dam Failure

School facilities are not located within primary dam inundation zones according to emergency management mapping, limiting direct vulnerability to this hazard.

Drought

1. Cooling System Water Efficiency Upgrades
    - **Description:** Implement water-efficient cooling system modifications for school facilities including installation of water recycling components, smart controls, and potential transition to alternative cooling technologies that reduce water consumption.
    - **Responsible Party:** Carbon School District Facilities Department
    - **Potential Funding:** Utah Division of Water Resources; School District Capital Fund
    - **Estimated Cost:** $250,000 (estimated cost for cooling system modifications)
    - **Timeframe:** 2025-2030
    - **Status:** Upcoming (based on funding)
    - **Priority Level:** Medium
    - **Justification:** Several district facilities utilize water-dependent cooling systems that could face operational challenges during drought-related water restrictions. This action addresses this specific vulnerability by reducing cooling system water requirements, ensuring continuity of comfortable learning environments during water shortage periods while also supporting community-wide conservation efforts.

Severe Weather

1. School Facility Weather Resilience and Emergency Procedures
    - **Description:** Implement comprehensive severe weather preparedness measures for all school facilities including: installation of weather monitoring systems, structural assessments for snow load capacity on older buildings, backup power systems for critical facilities, and updated emergency procedures for winter weather closures. Coordinate with National Weather Service and Carbon County Emergency Management for early warning systems.
    - **Responsible Party:** Carbon School District Facilities Department
    - **Potential Funding Source:** FEMA Building Resilient Infrastructure and Communities (BRIC) Program; School District Maintenance Budget
    - **Estimated Cost:** $75,000 (varies by project)
    - **Timeframe:** Ongoing (2025-2029)
    - **Status:** New
    - **Priority Level:** High
    - **Justification:** School facilities must remain operational during severe weather events to serve as community shelters and ensure student safety. The district's aging infrastructure requires upgrades to withstand winter weather impacts including heavy snow loads, ice storms, and extreme cold temperatures that are common in Carbon County.

Infestation

The district maintains comprehensive pest management protocols within its regular facilities maintenance program, addressing potential infestations before they impact educational operations.

Multi-Hazard

1. Demolition of the 1936 school building and construction of a new middle school in Helper to remove high liability unreinforced masonry structure and create a new building that meets current seismic and other regulations.
    - **Description:** Remove high liability unreinforced masonry structure and replace with a new middle school building that meets current seismic codes and safety standards.

- **Responsible Party:** Carbon School District Facilities Department
- **Potential Funding:** Local school district capital funds
- **Estimated Cost:** $15,000,000 (estimated based on typical school construction costs)
- **Timeframe:** Completed in 2022
- **Status:** Completed
- **Priority Level:** High
- **Justification:** The 1936 school building posed significant seismic safety concerns due to its unreinforced masonry construction and age. This project eliminated a major vulnerability in the district's building inventory by replacing an outdated structure with a modern facility designed to current building and safety codes, substantially improving student and staff safety.

2. Improve the function and resiliency of school district facilities as safe places during an event, and also possible use as a short-term incident command center or long-term place of refuge and supply: Conduct structural engineering review of all district facilities and evaluate for unreinforced and under reinforced masonry structures.
    - **Description:** Conduct comprehensive assessment of all district buildings to identify unreinforced and under-reinforced masonry structures, creating prioritized lists for retrofit or replacement to improve facility resilience during emergencies.
    - **Responsible Party:** Carbon School District Facilities Department
    - **Potential Funding:** FEMA Building Resilient Infrastructure and Communities (BRIC) Program; Utah School Building Program
    - **Estimated Cost:** $425,000 (scoping) and $20+ million (mitigation)
    - **Timeframe:** 2029-2033
    - **Status:** Ongoing
    - **Priority Level:** Medium
    - **Justification:** School buildings serve critical community functions during disasters as potential emergency shelters, command centers, and places of refuge. This assessment identifies specific structural vulnerabilities in the district's facilities, prioritizing improvements that will enhance both everyday occupant safety and the buildings' capacity to serve essential emergency functions during hazard events.
3. Emergency access improvements for first responders
    - **Description:** Establish standardized emergency access protocols across all district facilities including secure key repositories, keyless entry systems for authorized responders, and enhanced communications infrastructure to improve response during crisis events.
    - **Responsible Party:** Carbon School District Administration (lead); Carbon County Emergency Management Services
    - **Potential Funding:** FEMA Building Resilient Infrastructure and Communities (BRIC) Program; School Safety Grant Programs
    - **Estimated Cost:** $50,000
    - **Timeframe:** 2025-2026
    - **Status:** Ongoing

- **Priority Level:** High
- **Justification:** During emergencies, first responders often face access challenges to secured school facilities. This action directly addresses operational vulnerability by creating standardized, reliable access systems across all district buildings, significantly reducing response times during critical incidents and improving coordination between school personnel and emergency services.

7.7.10 Integration of 2018 Plan

1. **Past Integration (2018-2023)**: The School District's integration of the 2018 plan was limited to informal consideration during capital planning:
    a. Facility Capital Improvement Program: While the District referenced the 2018 plan when discussing facilities projects, it was not formally incorporated into the capital planning documents or facility design standards.
2. Site Selection Considerations: Hazard vulnerability information was considered informally during site evaluations, but not through formal policy adoption.
3. **Current Integration:** The District is developing a more formal approach to incorporating hazard mitigation into its planning mechanisms, particularly its upcoming capital improvement program which will explicitly reference and incorporate relevant elements of the updated hazard mitigation plan.

8.0 Specialized Local Districts

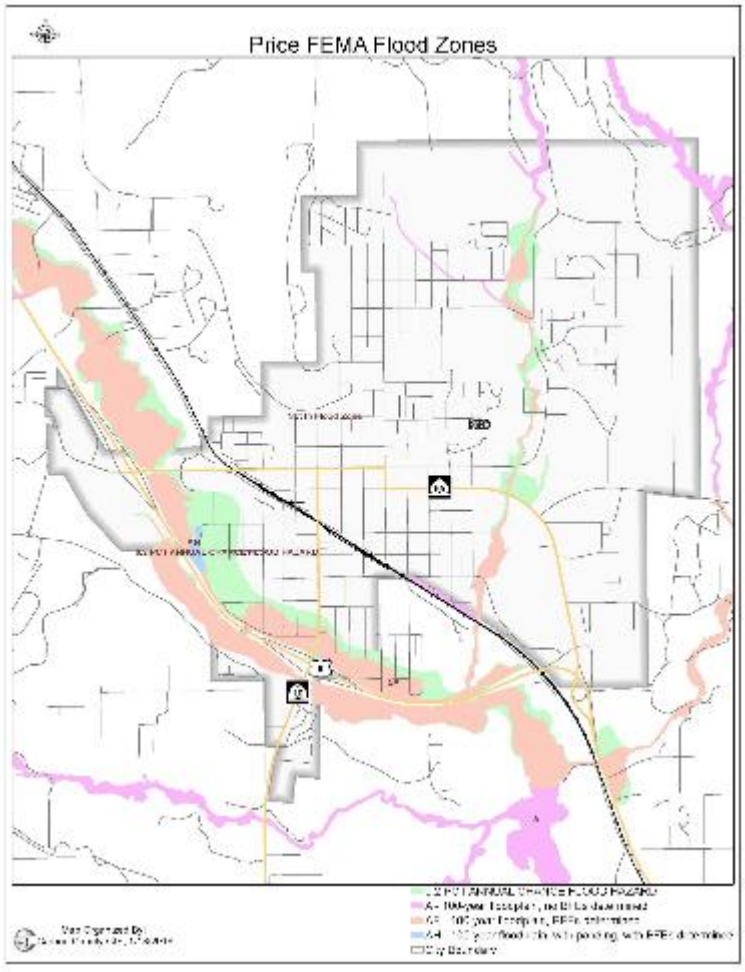
8.1 Price River Water District

8.1.1 Background

Utah State Code, Annotated, Section 17B-1-102, defines Specialized Local Districts (SLD) as a local district that is a cemetery maintenance district, a drainage district, a fire protection district, an improvement district, an irrigation district, a metropolitan water district, a mosquito abatement district, a public transit district, a service area or a water conservancy district. An SLD is a body corporate with perpetual succession, a quasi-municipal corporation, and is a political subdivision of the state. The Price River Water Improvement District (PRWID) is the only specialized local district in Carbon County.

Price River Water Improvement District (PRWID) was created in 1959 and began functioning in 1960. The District provides culinary water to the Price River Basin area, supplements water supplies for Price and Helper Cities and operates a wastewater treatment facility and sewer collection system.

PRWID Wastewater Treatment Plant has an average effluent flow of 1.7 MGD. The treatment consists of screens, aerated grit chamber, pista-grit removal system, 2 rectangular primary clarifiers, 2 rock media trickling filters, 2 solids contact floc formation basins, 2 activated sludge aeration basins, 2 circular clarifiers, chlorine contact chamber followed by dechlorination with SO2. PRWID applies Class B biosolids on its on-farm operation where feed for non-dairy cattle and horses is grown.



8.1.2 Location & Extent

Price River Water Improvement District (PRWID) is headquartered in Price, Utah. It owns and operates a wastewater treatment facility which serves the communities of Helper, Price, Wellington and the majority of residents within the Price River Valley.

8.1.3 Demographic & Population

The Price River Water Improvement District serves all residents of Carbon County.

8.1.4 Vulnerable Populations

Not directly applicable to the District. (See County-level statistics).

8.1.5 Changes Since 2018 Plan

The Price River Water Improvement District has experienced several notable changes affecting hazard vulnerability:

1. Infrastructure Changes:
    a. Completion of major water treatment facility upgrades.
    b. Implementation of new monitoring systems.
    c. Enhanced emergency power backup capabilities.
2. Service Population:
    a. Modified service area requirements due to population changes.
    b. Updated emergency response protocols for vulnerable populations.
    c. Enhanced coordination with other utility providers.
3. Operational Updates:
    a. Implementation of new water quality monitoring systems.
    b. Enhanced drought response capabilities.
    c. Modified emergency response protocols.
4. Risk Assessment:
    a. Updated analysis of infrastructure vulnerabilities.
    b. Enhanced evaluation of drought impacts.
    c. Modified assessment of flood risks to facilities.

8.1.6 Specific Stakeholder Hazards & Vulnerabilities

Analysis of natural hazards in the community of the Price River Water Improvement District revealed that there could be potential losses associated with flooding, and drought. These hazards have varied potential to impact life, property, infrastructure, and other amenities within jurisdictional boundaries.

- **Earthquake:** PRWID's aging water and wastewater infrastructure crosses multiple fault zones with varying seismic risk levels. Critical facilities including treatment plants contain components not designed to current seismic standards, creating vulnerability to operational disruption during seismic events. Water transmission pipelines, particularly older sections installed before modern seismic design standards, are susceptible to rupture and failure during ground shaking. Seismic events could cause multiple simultaneous infrastructure failures, overwhelming repair capabilities and resulting in extended service disruptions.
- **Flooding:** The District's infrastructure includes numerous components located within flood-prone areas, particularly along the Price River and associated drainages. Water treatment facilities near river courses are vulnerable to inundation and operational disruption during flood events. Collection system components in low-lying areas experience infiltration and inflow during flooding, potentially exceeding treatment capacity. Historical flooding has damaged pipelines, access roads to critical facilities, and electrical systems serving water and wastewater operations. The potential impacts include compromised water quality, service interruptions to customers, damage to critical treatment equipment, and increased operating costs for emergency repairs and alternative service provision.

- **Drought:** As the regional water provider, PRWID's operations are directly impacted by drought conditions affecting source water availability and quality. Treatment operations face challenges during drought periods when decreased streamflows contain higher concentrations of contaminants and sediment. The District's water rights portfolio, while diverse, has limitations during extended drought periods, potentially requiring usage restrictions or alternate source development. Drought conditions create competing demands between municipal, industrial, and agricultural users that must be managed within available supply constraints. The potential impacts include water supply shortages requiring usage restrictions, increased treatment costs due to degraded water quality, competing demands between user groups requiring difficult allocation decisions, and financial impacts from reduced revenue during conservation periods.

8.1.7 Status of 2018 Mitigation Actions - Price River Water District

The 2018 plan did not assign specific actions to the Water District. However, the District participated in the following countywide initiatives:

2018 Action	Role	Current Status	Explanation
D1: Promote water recycling	Participant	Ongoing	Public education support.
F7: Promote flood insurance	Participant	Ongoing	Infrastructure protection coordination

8.1.8 Development in Hazard-Prone Areas - Price River Water District

Since the 2018 plan, the Price River Water District has implemented several infrastructure projects that have affected its hazard vulnerability. Water treatment facility upgrades have enhanced operational resilience and decreased vulnerability to drought conditions. The installation of backup power systems at critical facilities has reduced vulnerability to service disruptions during severe weather events. Monitoring system improvements have enhanced early detection capabilities for potential infrastructure failures. These targeted infrastructure investments have moderately decreased the District's overall vulnerability to its primary hazards while maintaining consistent vulnerability levels for less significant threats.

8.1.9 Present and Future Mitigation Strategies

The Price River Water District employs a comprehensive mitigation strategy that includes:

- Infrastructure Projects:
  - Water system improvements
  - Treatment facility upgrades
  - Emergency power systems
- Planning & Regulations:
  - Emergency response procedures
  - System maintenance standards
  - Operating protocols
- Natural Systems:
  - Watershed protection
  - Source water management
  - Natural infrastructure

- Education/Awareness:
    - Water conservation
    - Emergency notifications
    - Public safety information

Note: *Each action was selected based on its effectiveness, feasibility, and ability to address multiple hazards where possible. (See Appendix M).*

8.1.9.1 Price River Water District Mitigation Strategies

Earthquake

1. Water Infrastructure Seismic Vulnerability Assessment
    - **Description:** Conduct comprehensive evaluation of all water and wastewater facilities to identify seismic vulnerabilities, with prioritized recommendations for retrofitting or replacement of at-risk components.
    - **Responsible Party:** Price River Water Improvement District Engineering Department (lead); Consulting Structural Engineer
    - **Potential Funding Source:** FEMA Hazard Mitigation Grant Program; EPA Clean Water State Revolving Fund
    - **Estimated Cost:** $75,000-100,000
    - **Timeframe:** 2025-2025
    - **Status:** Planned
    - **Priority Level:** High
    - **Justification:** The District's aging water infrastructure crosses multiple fault zones and includes components not designed to current seismic standards. This assessment addresses this vulnerability by systematically identifying critical weaknesses that could lead to service disruption or contamination during seismic events, providing a foundation for targeted mitigation investments.

Flooding

1. Enhanced Stormwater Management Plan
    - **Description:** Develop and implement a comprehensive stormwater management plan that identifies flood-prone infrastructure and establishes protocols for pre-storm preparation and post-flood response.
    - **Responsible Party:** Price River Water Improvement District (PRWID) Engineering Department
    - **Potential Funding:** Local Storm Water Funds; Utah Division of Water Resources
    - **Estimated Cost:** $35,000-50,000
    - **Timeframe:** 2025-2026
    - **Status:** Ongoing
    - **Priority Level:** High
    - **Justification:** PRWID's infrastructure crosses multiple floodplains, making it particularly vulnerable to flood damage that could disrupt essential water services. This comprehensive planning approach addresses the District's specific vulnerability by

systematically identifying at-risk assets and establishing clear protocols for both prevention and response.

2. Maintain ongoing infrastructure inspections to ensure structures remain sound and water flow paths are not filled with debris.
    - **Description:** Implement systematic inspections of all water and wastewater infrastructure to identify structural issues and remove debris buildup before flood events occur.
    - **Responsible Party:** Price River Water Improvement District (PRWID) Operations Department
    - **Potential Funding:** Local Storm Water Funds; PRWID Maintenance Budget
    - **Estimated Cost:** $10,000
    - **Timeframe:** 2025-2028
    - **Status:** Ongoing
    - **Priority Level:** Medium
    - **Justification:** The District's water conveyance systems are vulnerable to performance degradation from debris accumulation and structural deterioration, particularly during high flow events. This proactive inspection program addresses this vulnerability by ensuring early identification of potential blockages or failures, preventing system overflows and protecting water quality during flood events.
3. Develop and maintain a long-term development plan to ensure new development is adequately connected to the wastewater system.
    - **Description:** Create a comprehensive development plan that maps future service areas, identifies infrastructure capacity needs, and establishes connection standards for new development
    - **Responsible Party:** Price River Water Improvement District (PRWID) Engineering Department (lead); Price City Planning Department
    - **Potential Funding:** Local Developer Fees; PRWID Capital Improvement Fund
    - **Estimated Cost:** $25,000 (estimated based on similar planning projects)
    - **Timeframe:** 2025-2027
    - **Status:** Ongoing
    - **Priority Level:** Medium
    - **Justification:** Unplanned or inadequately connected development creates significant vulnerability for the District's wastewater management capacity, potentially leading to system overflows during flood events. This planning effort directly addresses this vulnerability by ensuring all new connections meet appropriate engineering standards and overall system capacity remains sufficient during peak flow conditions.
4. Property Owner Flood Mitigation Education Program
    - **Description:** Develop and distribute educational materials for property owners on flood-resistant landscaping, drainage improvements, and backflow prevention measures to protect private water/sewer connections.
    - **Responsible Party:** Price River Water Improvement District (PRWID) Public Education Coordinator
    - **Potential Funding:** FEMA Flood Mitigation Assistance (FMA) Program;

- **Estimated Cost:** $10,000
- **Timeframe:** 2025-2028
- **Status:** Upcoming (based on funding)
- **Priority Level:** Low
- **Justification:** Private property connections represent a potential weakness in the District's system during flood events, as improperly maintained or protected connections can allow contamination into the water system. This education program addresses this vulnerability by empowering property owners to implement protective measures, creating an additional layer of system protection during flood events.

Landslide

The Price River Water Improvement District has not prioritized landslide as a hazard because the District has designed its critical water infrastructure with appropriate engineering controls to account for potential slope instability in vulnerable areas, and maintains regular monitoring protocols for transmission lines in steep terrain.

Wildfire

Wildfire is not prioritized as a hazard for the District because water treatment and distribution facilities incorporate fire-resistant design elements and maintain adequate defensible space, while underground infrastructure is naturally protected from direct wildfire impacts.

Problem Soils

The Price River Water Improvement District does not prioritize problem soils as a hazard because its infrastructure design and construction standards already account for soil challenges throughout the service area, with specialized foundation systems and flexible connections in areas with expansive or collapsible soils.

Dam Failure

The Price River Water Improvement District has not prioritized dam failure as a hazard requiring specific mitigation actions because the District has already implemented comprehensive infrastructure redundancy measures that effectively mitigate dam failure risk. The District's water supply infrastructure incorporates multiple independent source water systems across geographically separated locations, ensuring that a single dam failure cannot compromise overall system capacity. Treatment facilities and major transmission infrastructure are located outside potential inundation zones from identified high-hazard dams. The District has invested in automated supply switching capabilities that maintain service during source interruptions, and maintains excess capacity that allows continued operations even with one major source offline. These existing infrastructure investments effectively mitigate long-term vulnerability to dam failure by ensuring the District can maintain water service to customers regardless of dam-related incidents affecting any single source

Drought

1. Water Conservation Education Program
    - **Description:** Develop comprehensive public education materials promoting residential water conservation techniques, including guidance on low-flow fixture installation, efficient irrigation practices, and drought-tolerant landscaping.
    - **Responsible Party:** Price River Water Improvement District (PRWID) Public Education Coordinator
    - **Potential Funding:** Utah Division of Water Resources; Carbon County Water Conservancy District

- **Estimated Cost:** $10,000
- **Timeframe:** 2025-2028
- **Status:** Upcoming (based on funding)
- **Priority Level:** Medium
- **Justification:** During drought conditions, residential water usage becomes a critical vulnerability in the District's overall water management strategy. This education program directly addresses this vulnerability by encouraging voluntary conservation measures that can significantly reduce system-wide demand, extending available water supplies during shortage periods and reducing stress on treatment and distribution infrastructure.

Infestation

The Price River Water Improvement District has not prioritized infestation as its operational procedures include regular monitoring and maintenance to prevent infestations affecting water quality or infrastructure, with comprehensive treatment protocols already in place at all facilities.

8.1.10 Integration of 2018 Plan

1. **Past Integration (2018-2023):** The Price River Water District did not formally integrate the 2018 plan into planning mechanisms such as capital improvement plans, infrastructure design standards, or operational guidelines. While District staff were aware of the plan's contents, integration was limited to informal reference during operational discussions.

2. **Current Integration:** The District is developing a more structured approach to incorporating hazard mitigation into its planning process, with plans to explicitly reference the updated mitigation plan in its next infrastructure master plan update and capital improvements program, particularly regarding drought resilience measures and flood protection for critical facilities.

9.0 Implementation Resources

9.1 Funding Sources

Although all mitigation techniques will likely save money by avoiding losses, many projects are costly to implement. County jurisdictions shall continue to seek outside funding assistance for mitigation projects in both the pre- and post-disaster environment. This portion of the Plan identifies the primary Federal and State grant programs for County jurisdictions to consider, and also briefly discusses local and non-governmental funding sources.

9.1.1 Federal Programs

The following federal grant programs have been identified as funding sources which specifically target hazard mitigation projects:

Title: Legislative Pre-Disaster Mitigation (LPDM) Program / Congressionally Directed Spending

Agency: Federal Emergency Management Agency

The Pre-Disaster Mitigation program has evolved into the Legislative Pre-Disaster Mitigation (LPDM) program, which is now primarily administered through Congressionally Directed Spending (CDS). This program continues to be authorized by Section 203 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act but is now funded through specific congressional appropriations for designated projects.

The program makes federal funds available to state, local, tribal, and territorial governments to plan for and implement sustainable cost-effective mitigation measures designed to reduce risk from future natural hazards while reducing reliance on federal disaster funding. For Fiscal Year 2024, approximately $190.5 million was made available to fund 110 congressionally directed projects.

The funding is generally based upon a 75% Federal share and 25% non-Federal share. Special accommodation continues to be made for "small and impoverished communities," which remain eligible for up to 90% Federal share/10% non-Federal share. The non-Federal match can be fully in-kind or cash, or a combination.

Communities seeking funding through this program must work with their congressional representatives to have their projects included in the annual appropriations process. Once identified for funding, applicants must submit formal applications through FEMA's Mitigation eGrants system in accordance with the Notice of Funding Opportunity (NOFO).

FEMA provides LPDM grants to states, territories, tribal governments, and local communities for:

- State and local hazard mitigation planning
- Technical assistance
- Mitigation projects, including:
    - Acquisition or relocation of vulnerable properties
    - Hazard retrofits
    - Minor structural hazard control or protection projects
    - Community outreach and education

Title: Flood Mitigation Assistance Program

Agency: Federal Emergency Management Agency

FEMA's Flood Mitigation Assistance program (FMA) provides funding to assist states and communities in implementing measures to reduce or eliminate the long-term risk of flood damage to buildings, manufactured homes and other structures insurable under the National Flood Insurance Program (NFIP). FMA was created as part of the National Flood Insurance Reform Act of 1994 (42 USC 4101) with the goal of reducing or eliminating claims under the NFIP.

FMA is a pre-disaster grant program, and is available to states on an annual basis. This funding is available for mitigation planning and implementation of mitigation measures only, and is based upon a 75% Federal share/25% non-Federal share. States administer the FMA program and are responsible for selecting projects for funding from the applications submitted by all communities within the state. The state then forwards selected applications to FEMA for an eligibility determination. Although individuals cannot apply directly for FMA funds, their local government may submit an application on their behalf.

Title: Hazard Mitigation Grant Program

Agency: Federal Emergency Management Agency

The Hazard Mitigation Grant Program (HMGP) was created in November 1988 through Section 404 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act. The HMGP assists states and local communities in implementing long-term mitigation measures following a Presidential disaster declaration.

To meet these objectives, FEMA can fund up to 75% of the eligible costs of each project. The state or local cost-share match does not need to be cash; in-kind services or materials may also be used. With the passage of the Hazard Mitigation and Relocation Assistance Act of 1993, federal funding under the HMGP is now based on 15% of the federal funds spent on the Public and Individual Assistance programs (minus administrative expenses) for each disaster.

The HMGP can be used to fund projects to protect either public or private property, so long as the projects in question fit within the state and local governments' overall mitigation strategy for the disaster area, and comply with program guidelines. Examples of projects that may be funded include the acquisition or relocation of structures from hazard-prone areas, the retro-fitting of existing structures to protect them from future damages; and the development of state or local standards designed to protect buildings from future damages.

Eligibility for funding under the HMGP is limited to state and local governments, certain private nonprofit organizations or institutions that serve a public function, Indian tribes, and authorized tribal organizations. These organizations must apply for HMPG project funding on behalf of their citizens. In turn, applicants must work through their state, since the state is responsible for setting priorities for funding and administering the program.

Title: Public Assistance (Infrastructure) Program, Section 406

Agency: Federal Emergency Management Agency

FEMA's Public Assistance Program, through Section 406 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act, provides funding to local governments following a Presidential Disaster Declaration for mitigation measures in conjunction with the repair of damaged public facilities and infrastructure.

The mitigation measures must be related to eligible disaster-related damages and must directly reduce the potential for future, similar disaster damages to the eligible facility. These opportunities usually present themselves during the repair/replacement efforts.

Proposed projects must be approved by FEMA prior to funding. They will be evaluated for cost effectiveness, technical feasibility and compliance with statutory, regulatory and executive order requirements. In addition, the evaluation must ensure that the mitigation measures do not negatively impact a facility's operation or risk from another hazard.

Public facilities are operated by state and local governments, Indian tribes or authorized tribal organizations and include:

- Roads, bridges & culverts
- Draining & irrigation channels
- Schools, City halls & other buildings
- Water, power & sanitary systems
- Airports & parks

Private nonprofit organizations are groups that own or operate facilities that provide services otherwise performed by a government agency and include, but are not limited to the following:

- Universities and other schools
- Hospitals & clinics
- Volunteer fire & ambulance
- Power cooperatives & other utilities
- Custodial care & retirement facilities
- Museums & community centers

Title: Small Business Administration (SBA) Disaster Assistance Program

Agency: U.S. SBA

The SBA Disaster Assistance Program provides low-interest loans to businesses following a Presidential disaster declaration. The loans target businesses to repair or replace uninsured disaster damages to property owned by the business, including real estate, machinery and equipment, inventory and supplies. Businesses of any size are eligible, along with non-profit organizations.

SBA loans can be utilized by their recipients to incorporate mitigation techniques into the repair and restoration of their business.

Title: Community Development Block Grants

Agency: US Department of Housing and Urban Development

The Community Development Block Grant (CDBG) program provides grants to local governments for community and economic development projects that primarily benefit low- and moderate-income people. The CDBG program also provides grants for post-disaster hazard mitigation and recovery following a Presidential disaster declaration.

Funds can be used for activities such as acquisition, rehabilitation or reconstruction of damaged properties and facilities and for the redevelopment of disaster areas.

9.1.2 State Programs

9.1.3 Local

Local governments depend upon local property taxes as their primary source of revenue. These taxes are typically used to finance services that must be available and delivered on a routine and regular basis to the general public. If local budgets allow, these funds are used to match Federal or State grant programs when required for large-scale projects.

9.1.4 Non-Governmental

Another potential source of revenue for implementing local mitigation projects are monetary contributions from non-governmental organizations, such as private sector companies, churches, charities, community relief funds, the American Red Cross, hospitals, land trusts and other non-profit organizations.

Paramount to having a Plan deemed to be valid is its implementation. There is currently no new fiscal note attached to the implementation of this Plan.

9.2 Policy Considerations

Natural disasters are naturally occurring phenomena. They play an integral part in maintaining balance in our world. Meteorological, geological, or hydrological processes have shaped Utah for millions of years and will continue to shape the valley for millions more. These unique phenomena only cause disasters when they affect humans and their structure. Modern engineering has made it possible to mitigate damage from PDM Plan natural hazards. However, the economic and environmental costs can be rather high. Tampering with natural systems can also create an imbalance in the natural environment. Nature provides its own mitigation and measures that need to be identified, protected and/or strengthened. To ensure that our environment is not harmed through mitigation measures, all applicable Carbon County ordinances and state/federal laws pertaining to the environment must be followed. The majority of the proposed mitigation programs in this Plan will be funded through federal programs, and thus tied to federal funding.

“44 CFR 10.8(d)(2)(iii) excludes this rule from the preparation of an environmental assessment or environmental impact statement, where the rule relates to actions that qualify for categorical exclusions under 44 CFR 10.8(d) (2)(iii), such as the development of plans under this section” (United States 2002).

The following acts will be taken into consideration and will be incorporated when needed while organizing and implementing them: Clean Air Act, Clean Water Act, Endangered Species Act, Floodplain Management, National Historic Preservation Act.

9.3 Clean Air Act (CAA) 1970

The Clean Air Act is the comprehensive Federal Law that covers the entire country under the Environmental Policy Act regulating air emissions from area, stationary, and mobile sources. This law sets limits or National Ambient Air Quality Standards (NAAQS), on how much of a pollutant can be in the air anywhere in the United States and the emissions of air pollutants. These limits ensure that all Americans have the same basic health and environmental protections. Maximum pollutant standards were set, though states may have stronger pollution controls than the national standards. Each state explains how it will do its job under the Clean Air Act by developing a mandated “state implementation plan” (SIP) that must be approved by the Environmental Protection Agency (EPA). The 1977 amendment set new dates for areas of the country that failed to meet the initial deadlines for achieving NAAQS. The 1990 amendments addressed problems such as acid rain, ground- level ozone, stratospheric ozone depletion, and air toxins. This act required facilities with

large amounts of certain hazardous chemicals to have a special emergency planning requirement. Based on a facilities potential threat or risk from chemical spills, fires, explosions, etc., facilities prepare a Risk Management Plan (RMP) that includes hazard identification, assessments, design and maintenance of a safe facility, necessary steps to prevent releases and ways to minimize the consequences from an accidental release (United States 1970).

9.4 Clean Water Act (CWA)

The Federal Water Pollution Control Act Amendments of 1972 came about because of the growing awareness for the need to control water pollution. As amended in 1977, this law became known as the Clean Water Act, whose mission is to establish the basic structure for regulating discharges of pollutants into the waters of the United States, and to reduce and maintain the chemical, biological, and physical environments. The act gave the EPA the authority to set wastewater standards for industry. The act also requires that each state adopt water quality standards, act to protect wetlands, and limit industrial and municipal discharges into navigable waters unless permitted. It funded the construction of wastewater treatment plants for nearly every county in the United States through construction grant programs from the EPA and recognized the need for planning for future threats from nonpoint source pollution. (United States 1977a)

9.5 Clean Water Act, Section 404 - Wetland Preservation

This section regulates activities in wetland areas and authorizes the EPA to restrict or prohibit the use of an area as a disposal site for dredged or fill material if the discharge will have adverse effects on municipal water supplies, shellfish beds and fishery areas, wildlife or recreational areas. A permit must be issued that is based on regulatory guidelines developed in conjunction with the U.S. Army Corps of Engineers and the EPA. (United States 1977a)

9.6 Endangered Species Act of 1973

This act provides a plan for the protection of threatened or endangered plants and animals and the habitats in which they are found. Congress declared that various species of fish, wildlife, and plants in the United States have been caused to become extinct, or are so depleted in numbers they are in danger of becoming extinct as a result of economic development and expansion without adequate concern for conservation. Aesthetic, ecological, educational, historical, recreational, and scientific importance come from these species and are a value to our nation and its people. The U.S. will conserve, to a practicable extent, the species that face extinction and will encourage the States through federal assistance to develop and maintain conservation programs. The reason for the Act is to provide a means by which ecosystems with endangered and threatened species will be conserved. It is also declared that all state and local agencies resolve water resource issues in connection with conservation of endangered species (United States 1973).

9.7 Floodplain Management Policy

The main points of this policy are to reduce the loss of life and property and the disruption of societal and economic pursuits caused by flooding or facility operations as well as to restore, sustain and enhance the natural resources, ecosystems and other functions of the floodplains. Activities will search for a balance between the sometimes competing uses of floodplains in a way that provides the most benefit to society. Activities will pursue and encourage the appropriate use of floodplains, avoid long and Short-Term negative impacts associated with the development and modification of floodplains, and avoid direct and indirect

support of floodplain development whenever there is a practicable alternative. “Functions of floodplains include natural moderation of floods; fish, wildlife, and plant resources and habitat; groundwater recharge; and water quality maintenance. Uses of floodplains include stormwater management, erosion control, open space, natural beauty, the opportunity for scientific study, outdoor education, recreation, and cultural preservation, and compatible economic utilization of floodplain resources by human society.” (United States 1977b).

9.8 National Historic Preservation Act Of 1996 (NHPA)

This act was enacted by Congress because “the spirit and direction of the Nation are founded upon and reflected in its historic heritage…the historical and cultural foundations of the Nation should be preserved as a living part of our community life and development in order to give a sense of orientation to the American people.” Another main point of the act mandates the awareness of historic properties that are being lost or substantially altered. The preservation will continue a legacy of cultural, educational, aesthetic, inspirational, economic and energy benefits for future generations. The knowledge of historic resources and the encouragement of their preservations will improve the planning and execution of Federal and federally-assisted projects and will assist economic growth and development. The act uses measures that will foster conditions in which historic resources can exist in productive harmony with present and future generations (United States 2000).

Section 106 of NHPA “requires all Federal agencies to take into account the effects of their actions on historic properties, and provide ACHP with a reasonable opportunity to comment on those actions and the manner in which Federal agencies are taking historic properties into account in their decisions” beginning at the early stages of planning to mitigate any adverse effects on historic properties (United States 2000).

9.9 Public Policy

Under Utah State law, local cities and counties are responsible for setting land use policy in their areas. Utah State Statute provides for the development of County-level plans under Title 17-27a-401. Components which are required to be addressed within these plans include: land use, transportation, environmental issues, public services and facilities, rehabilitation and redevelopment, economic concerns, recommendations for plan implementation, and "any other elements that the County considers appropriate". In 2015, the Utah Legislature amended Title 17-27a-401 to also require that County general plans include a “resource management plan” to provide a basis for communicating and coordinating with the federal government on land and resource management issues.

A significant portion of Carbon County is currently zoned for low-density agriculture and residential development. Additional commercial land use nodes are dispersed throughout southern Carbon County to serve adjoining residential communities. An extension of the existing transportation network will provide needed highway and transit service to newly developed land. As land use changes, so will the type and size of facilities needed to meet increased travel demand.

Public policy is the greatest contributing factor in development. This report has briefly mentioned the general development trends in the region and County as well as the contributing and limiting influences on development. Ultimately, the many development constraints and influences are measured, weighed, compared, and balanced in public policy.

Development public policy is articulated in Master Plans (sometimes referred to as General Plans, Land Use Management Codes, and other planning documents). Master Plans and Land Use Management Codes are formally adopted by City or County councils whereas other planning documents may not receive formal

adoption. All Region counties continue to update their Master Plans and Land Use Management Codes. This Plan gives each County guidelines for the responsible use of currently open spaces.

9.10 Severe Weather Mitigation Programs

9.10.1 StormReady

The National Weather Service, in partnership with emergency management officials, businesses, volunteer organizations, academia, and the media is focused on fostering a Weather-Ready Nation, where society is prepared for and responds appropriately to weather- dependent events. A key component of this is ensuring that community leaders make informed decisions, and that is where the StormReady program comes into play.

StormReady encourages communities to take a proactive approach to improving local hazardous weather operations and public awareness. Of course, the end result being the protection of lives and livelihoods.

To be recognized as StormReady, a community must 1) establish an effective communications system, complete with a 24-hour warning point and emergency operations center; 2) have multiple ways to receive severe weather forecasts and warnings; 3) create a network for monitoring local weather and water events; 4)

have multiple ways to disseminate weather and weather-related information; 5) engage in community preparedness efforts, including the promotion of public readiness and response through community seminars; and 6) develop a formal hazardous weather plan, which includes training severe weather spotters and holding emergency exercises.

To get started, visit the NWS StormReady® Program page at https://www.weather.gov/stormready or contact the NWS Weather Forecast Office serving your area.

9.10.2 Weather-Ready Nation Ambassador

NOAA's Weather-Ready Nation (WRN) initiative is about helping our nation become more resilient to increasing extreme weather, water, and climate events. NOAA is working to keep these threats from becoming disasters with greater accuracy in forecasts and warnings, evolving services to community decision makers, and better ways to communicate risk to stakeholders and the public. As part of the WRN initiative, NOAA partners with emergency management officials, businesses, volunteer organizations, academia, and the media to motivate individuals and communities to prepare for potential weather disasters. And these actions can save lives – at home, in schools, and in the workplace.

Building a WRN requires the participation and commitment of a vast nationwide network of "Ambassadors" – organizations contributing in the best ways they can:

- Broadcasters advocating preparedness on-air
- Schools/universities teaching about the risks associated with severe weather and resiliency best practices
- Companies within the weather enterprise building the technological infrastructure for weather information and alerts
- Insurance companies providing discount incentives to policyholders who meet certain mitigation criteria

WRN Ambassadors partner with the National Weather Service to improve readiness, responsiveness, and overall resilience against extreme weather, water, and climate events in their communities. WRN

Ambassadors agree to promote WRN messages, collaborate on outreach and education efforts, share success stories, and serve as an example.

To learn more about the WRN initiative or becoming a WRN Ambassador, visit the Weather- Ready Nation page at http://www.weather.gov/wrn or e-mail NOAA's Weather-Ready Nation team at wrn.feedback@noaa.gov.

To register, visit the Welcome to the WRN Ambassador Submission Process page at https://www.weather.gov/wrn/amb-tou. NWS National Seasonal Safety Campaign: Preparing the public for hazardous weather year-round.

NOAA's National Weather Service (NWS) wants you to be prepared for hazardous weather year-round. The aim of the National Seasonal Safety Campaign is to build a Weather-Ready Nation, one that is prepared for extreme weather, water, and climate events.

Each campaign includes seasonal resources that provide information that is vital to keeping you and your loved ones safe. These materials include websites, articles, social media, infographics, videos and other content around the weather hazards most common during the current season. Visit the NWS National Seasonal Safety Campaign: Preparing the public for hazardous weather year-round page at http://www.weather.gov/safetycampaign, then click on one of the seasonal buttons for material relevant to that season.

A.0 APPENDIX (A) - Glossary Of Terms

A.1 Glossary

Abutment (dam) – the valley side against which a dam is constructed.

Acre-foot of Water – approximately 326,000 gallons of water, or approximately a football field covered by one foot of water.

Active Faults – An active fault is defined as a fault displaying evidence of displacement along one or more of its traces during Holocene time (about the last 11,000 years).

Aftershocks – earthquakes during the seconds, hours, days to months following a larger earthquake (main shock) in the same general region.

Alluvial Fan – a cone-shaped deposit of stream sediments, generally deposited at the base of a mountain where a stream encounters flatter terrain.

Amplitude (seismic waves) - the maximum height of a wave crest or depth of a trough. The amount of ground moves as a seismic wave passes, as measured from a seismogram.

Avalanche Path – the area in which a snow avalanche runs; generally divided into starting zone, track, and runout zone.

Basin and Range Physiographic Province – consists of north-south-trending mountain ranges separated by valleys, bounded by the Rocky Mountains and the Colorado Plateau to the east and the Sierra- Cascade Mountains to the west (includes western Utah).

Bearing Capacity – the load per unit area, which the ground can safely support without excessive yield.

Bedrock – solid in-place rock, sometimes exposed and sometimes concealed beneath the soil.

Block Faulting – see normal fault

Collapsible Soil (hydrocompaction) – loose, dry, low-density soil that decreases in volume or collapses when saturated for the first time following deposition.

Critical Areas – Environmentally sensitive areas which include wetlands, fish and wildlife habitat conservation areas; geologically hazardous areas; areas with a critical recharging effect on aquifers used for potable water; and frequently flooded areas. Critical areas have measurable characteristics which, when combined, create a value for or potential risk to public health, safety and welfare.

Critical/Essential Facilities – Structures meeting one or more of the following criteria:

- Fire stations, police stations, storage facilities for vehicles/equipment needed after a hazard event, and emergency operation centers.
- Hospitals, nursing homes, and housing which are likely to contain occupants who may not be sufficiently mobile to avoid injury or death as a result of a hazardous event.
- Public and private utility facilities, which are vital to maintaining or restoring normal services to damaged areas after a hazardous event.
- Structures or facilities that produce, store, or use highly flammable, explosive, volatile, toxic and/or water reactive materials.

Debris Flow – involves the relatively rapid, viscous flow of surface material that is predominantly coarse grained.

Debris Slide – involves predominantly coarse-grained material moving mainly along a planar surface.

Drought (Agricultural) – lack of water for crop production in a given area.

Drought (Hydrologic) – lack of water in the entire water supply for a given area. Drought (Meteorological) – lack of precipitation compared to an area's normal. Drought (Socioeconomic) – lack of water sufficient to support an area's population.

Earth Flow – Involves fine-grained material that slumps away from the top or upper part of a slope, leaving a scarp, and flows down to form a bulging toe.

Earthquake – a sudden motion or trembling in the earth as fracture and movement of rocks along a fault release stored elastic energy.

Earthquake Fault Zone – earthquake fault zones are regulatory zones around active faults. The zones are used to prohibit the location of critical facilities and structures designed for human occupancy from being built astride an active fault. Earthquake Fault Zones are plotted on topographic maps at a scale of 1-inch equals 2,000 feet. The zones vary in width, but average about one-quarter mile wide.

Earthquake-induced Seiche – Earthquake generated water waves causing inundation around shores or lakes and reservoirs.

Epicenter – the point on the earth's surface directly above the focus of an earthquake.

Epoch – geologic time unit lasting more than an age but shorter than a period (Epoch 2008).

Erosion – the removal of earth or rock material by many types of processes, for example, water, wind, or ice action.

Expansive Soil and Rock – soil and rock which contain clay minerals that expand and contract with changes in moisture content.

Fault – a break in the earth along which movement occurs.

Fault Segment – section of a fault that behaves independently from adjacent sections.

Fault Zone – an area containing numerous faults.

Federal Emergency Management Agency (FEMA) – authorized under Section 404 of the Stanford Act. Provides funding for hazard mitigation projects that are cost-effective and comply with existing post-disaster mitigation programs and activities. These projects cannot be funded through other programs to be eligible.

Fill – material used to raise the surface of the land generally in a low area.

Fire-resistant Vegetation – plants that do not readily ignite and burn when subjected to fire because of inherent physiological characteristics of the species such as moisture content, fuel loading, and fuel arrangement.

Floodplain – an area adjoining a body of water or natural stream that has been or may be covered by floodwater.

Floodplain (100-year/500-year) – Floodplains that have the potential to flood once every 100 or 500 years or that has a 1% (100-year) or 0.2% (500-year) chance of flooding equal to or in excess of that in any given year.

Floodway – An area of land immediately adjacent to a stream or river channel that, in times of flooding,

becomes an enlarged stream or river channel and carries the floodwater with the highest velocity.

Fluvial – concerning or pertaining to rivers or streams.

Focus – the point of origin of an earthquake within the earth, and the origin of the earthquake's seismic waves.

Formation (geologic) – a mappable rock unit consisting of distinctive features/rock types separate from units above and below.

Frequency (seismic waves) – the number of complete cycles of a seismic wave passing a point during one second.

Fuel (fire) – vegetation, building material, debris, and other substances that will support combustion.

Fuel Break – a change in fuel continuity, type of fuel, or degree of flammability of fuel in a strategically-located strip of land to reduce or hinder the rate of fire spread.

Fuel Type – a category of vegetation used to indicate the predominant cover of an area.

Glacial Moraine – debris (sand to boulders) transported and deposited by glacial ice along a glacier's sides or terminus.

Graben – a block of earth dropped between two faults.

Gradient (slope) – a measure of the slope of the land surface.

Ground Failure – a general term referring to any type of ground cracking or subsidence, including landslides and liquefaction-induced cracks.

Ground Shaking – the shaking or vibration of the ground during an earthquake.

Ground Water – that portion of subsurface water which is in the zone of saturation. Gypsiferous Deposits – soil or rock containing gypsum, which can be subject to dissolution. Gypsum – a mineral composed of hydrated calcium sulfate. A common mineral of evaporites.

Hazard Mitigation Plan – The Plan resulting from a systematic evaluation of the nature and extent of vulnerabilities posed by a hazard present in society that includes the strategies needed to minimize future vulnerability to hazards.

Hazard Mitigation – Any action taken to reduce or permanently eliminate the long-term risk to human life and property and the environment posed by a hazard.

HAZUS-MH – Hazards United States – Multihazards; Earthquake loss estimation software using GIS databases developed by FEMA.

Head (landslide) – the upper parts of the slide material along the contact between the disturbed material and the main scarp.

Holocene – geologic epoch covering the last 10,000 years (after the last Ice Age).

Igneous Rocks – rocks formed by cooling and hardening of hot liquid material (magma), including rocks cooled within the earth (for example, granite) and those that cooled at the ground surface as lavas (such as basalt).

Impermeable – materials having a texture that does not permit water to move through.

Interfluve – land between two streams in the same drainage basin (Interfluve 2004).

Intermountain Seismic Belt (ISB) – zone of pronounced seismicity, up to 120 miles wide and 800 miles long,

extending from Arizona through central Utah to northwestern Montana.

Lacustrine – concerning or pertaining to lakes.

Lake Bonneville – a large, ancient lake that existed 30,000 to 12,000 years ago and covered nearly 20,000 square miles in Utah, Idaho, and Nevada. The lake covered many of Utah's valleys, and was almost 1,000 feet deep in the area of the present Great Salt Lake.

Lake Bonneville Sediments – sediments deposited by Lake Bonneville, found in the valleys, which range from gravels and sands to clays.

Landslide – a general term for a mass of earth or rock, which moves down slope by flowing, spreading, sliding, toppling, or falling (see slope failure).

Lateral Spread – lateral down slope displacement of soil layers, generally several feet or more, above a liquefied layer.

Levee (flood) – a berm or dike used to contain or direct water, usually without an outlet or spillway.

Liquefaction – sudden large decrease in shear strength of a cohesionless soil (generally sand or silt) caused by collapse of soil structure and temporary increase in pore-water pressure during earthquake ground shaking.

Magnitude (earthquake) – a quantity characteristic of the amplitude of the ground motion of an earthquake. The most commonly used measurement is the Richter magnitude scale; a logarithmic scale based on the motion that would be measured by a standard type of seismograph 60 miles from the earthquake's epicenter.

Metamorphic Rocks – rocks formed by high temperatures and/or pressures (for example, quartzite formed from sandstone).

Mitigation – the act of reducing or preventing hazards which affect society or those things deemed important to society

Modified Mercalli Intensity (MMI) – the most commonly used intensity scale in the U.S.; it is a measure of the severity of earthquake shaking at a particular site as determined from its effect on the earth's surface, man, and man's structures.

Montmorillonite – a clay mineral characterized by expansion upon wetting and shrinking upon drying.

Natural Vegetation – native plant life existing on a piece of land before any form of development.

Normal Fault (block faulting) – fault caused by crustal extension in which relative movement on opposite sides is primarily vertical; for example, the Wasatch Fault.

Oolite – spherical grains of carbonate sand with a brine shrimp fecal pellet nucleus.

Outlet (dam) - a conduit through which controlled releases can be made from the reservoir.

Palmer Drought Severity Index (PDSI) – developed by Wayne Palmer in 1965; measures drought severity using temperature, precipitation and soil moisture (Utah Division of Water Resources 2007).

Peat – unconsolidated surficial deposit of partially decomposed plant remains.

Period (geologic) – a standard (world-wide) geologic time unit.

Permeability – the capacity of a porous rock or soil for transmitting a fluid.

Physiographic Province – a region whose pattern of relief features or landforms differs significantly from

that of adjacent regions.

Piping (problem soil and rock) – a weak incoherent layer in unconsolidated deposits that acts as a channel directing the movement of water. As the layer becomes saturated it conducts water to a free face (cliff or stream bank for example) that intersects the layer, and material exits out a "pipe" formed in the free face. Piping can occur in a dam as the result of progressive development of internal erosion by seepage.

Pore Space – the open spaces in a rock or soil between solid grains. The spaces may be filled with gas (usually air) or liquid (usually water).

Porosity – the ratio of the volume of pore space in rock or soil to the volume of its mass, expressed as percentage.

Probable Maximum Flood (PMF) – a flood that would result from the most severe combination of critical meteorological and hydrologic conditions possible in a region.

Probable Maximum Precipitation (PMP) – the maximum amount and duration of precipitation that can be expected to occur on a drainage basin.

Problem Soil and Rock – geologic materials that are susceptible to volumetric changes, collapse, subsidence, or other engineering geologic problems.

Project Impact – An initiative of the Federal Emergency Management Agency intended to modify the way in which the United States handles natural disasters. The Goal of Project Impact from a Federal Government perspective is to reduce the personal and economic costs of hazard events by bringing together the private and public sector to better enable the citizens of a community to protect themselves from natural hazards.

Quaternary – a geologic time period covering the last 1.6 million years.

Recurrence Interval – the length of time between occurrences of a particular event (an earthquake, for example).

Rock Fall – abrupt free fall or down slope movement, such as rolling or sliding, of loosened blocks or boulders from an area of bedrock. The rock-fall runout zone is the area below a rock-fall source which is at risk from falling rocks.

Rock Topple – forward rotation movement of a rock unit(s) about some pivot point.

Runout Zone (avalanche) – where a snow avalanche slows down and comes to rest (deposition zone). For large avalanches, the runout zone can include a powder- or wind-blast zone that extends far beyond the area of snow deposition.

Sand Blow (earthquake) – deposit of sandy sediment ejected as water and sand to the surface, formed when ground shaking has caused liquefaction at depth.

Scarp – a relatively steeper slope separating two more gentle slopes. Scarps can form as a result of earthquake faulting.

Sediment – material that is in suspension, is being transported, or has been moved from its site of origin by water, ice, or wind, and has come to rest on the earth's surface either above or below the sea level.

Sedimentary Rocks – rocks formed from loose sediment such as sand, mud, or gravel deposited by water, ice, or wind, and then hardened into rock (for example, sandstone); or formed by dissolved minerals precipitating out of solution to form rock (for example, tufa).

Seiche – a standing wave generated in a closed body of water such as a lake or reservoir. Ground shaking, tectonic tilting, sub aqueous fault rupture, or landsliding into water can all generate a seiche.

Seismic Waves – vibrations in the earth produced during earthquakes.

Seismicity – seismic or earthquake activity.

Sensitive Clay – clay soil that experiences a particularly large loss of strength when disturbed. Deposits of sensitive clay are subject to failure during earthquake ground shaking.

Shear Strength – the internal resistance that tends to prevent adjacent parts of a solid from "shearing" or sliding past one another parallel to the plane of contact. It is measured by the maximum shear stress that can be sustained without failure.

Shear Stress - a stress causing adjacent parts of a solid to slide past one another parallel to the plane of contact.

Slope Failure – a general term referring to any type of natural ground movement on a sloping surface (see landslide).

Slump – a slope failure that slides along a concave rupture surface. Generally slumps do not move very far from the source area.

Snow Avalanche – a rapid downslope movement of a mass of snow, ice, and debris.

Spectral Acceleration – measurement for approximate horizontal force experienced in a model earthquake. Measurements are specific to the frequency of shaking found to affect buildings during and earthquake. A 0.2- second period affects primarily one- and two-story buildings while 1.0- second period of spectral acceleration affects buildings approximately 10 stories in height.

Stafford Act – Robert T. Stafford Disaster Relief and emergency Assistance Act, PL 100-707, signed into law November 23 1988: amended the Disaster Relief Act of 1974, PL 93-288.

Starting Zone (avalanche) – where the unstable snow or ice breaks loose and starts to slide.

Subsidence – a settling or sinking of the earth's crust.

Sunny-Day Failure – the failure of a dam with the water level at the normal pool elevation and no rainfall.

Surface fault rupture (surface faulting) – propagation of an earthquake-generated fault rupture to the ground surface, displacing the surface and forming a scarp.

Tectonic Subsidence – subsidence (down dropping) and tilting of a basin on the down dropped side of a fault during an earthquake.

Toe (landslide) – the margin of disturbed material most distant from the main scarp.

Track (avalanche) – the slope or channel down which a snow avalanche moves at a fairly uniform speed.

Unconsolidated Basin Fill – un-cemented and non-indurated sediment, chiefly clay, silt, sand, and gravel, deposited in basins.

Urban Area – a geographical area, usually of incorporated land, covered predominately by engineered structures including homes, schools, commercial buildings, service facilities, and recreational facilities.

Velocity (ground motion) – the rate of displacement of an earth particle caused by passage of a seismic wave.

Wasatch Fault – a normal fault that extends over 200 miles from Malad city, Idaho to Fayette, Utah, and trends along the western front of the Wasatch Range.

Watershed – the area of land above a reference point on a stream or river, which contributes runoff to that stream.

Weathering – a group of processes (such as the chemical action of air, rain water, plants, and bacteria and the mechanical action of temperature changes) whereby rocks on exposure to the weather change in character, decay, and finally crumble into soil.

Wildfire – uncontrolled fire burning in vegetation.

Wildland Area – a geographical area of unincorporated land covered predominately by natural vegetation.

Wildland Urban Interface (WUI) – Wildland vegetation and forested areas adjacent to or intermingled with residential developments.

Zone of Deformation (earthquake) – the width of the area of surface faulting over which earth materials have been disturbed by fault rupture, tilting, or subsidence.

A.2 List Of Acronyms And Recognized Abbreviations

AARC - Average Annual Rate of Change

AGRC - Automated Geographic Reference Center

APHIS - Animal and Plant Health Inspection Service

BCEGS - Building Code Effectiveness Grading System

BOR - Bureau of Reclamation

CDBG - Community Development Block Grant

CERCLA - Comprehensive Environmental Response Compensation and Liability Act

CERT - Community Emergency Response Team

CFR - Code of Federal Regulations

CFS - Cubic Feet per Second CRS - Community Rating System

DB - Detention Basin

DFIRM - Digital Flood Insurance Rate Map

DEM - Division of Emergency Management

DMA 2000 - Disaster Mitigation Act of 2000

EAP - Emergency Action Plan

EM - Emergency Management

EOC - Emergency Operations Center

EOP - Emergency Operations Plan

FEMA - Federal Emergency Management Agency

FIRM - Flood Insurance Rate Map

FIS - Flood Insurance Study

FMA - Flood Mitigation Assistance

G - Gravity

GIS - Geographic Information Systems

GOMB - Governor's Office of Management and Budget

GPS - Geographic Positioning System

GSL - Great Salt Lake

HAM - Handheld Amateur Radio

HAZMAT - Hazardous Materials

HAZUS-MH Hazards United States – Multi-Hazards

HMGP - Hazard Mitigation Grant Program

LEPC - Local Emergency Planning Committee

LUST - Leaking Underground Storage Tank

M - Magnitude

MSL - Mean Sea Level

MOU - Memorandum of Understanding

NCDC - National Climatic Data Center

NFIP - National Flood Insurance Program

NIMS - National Incident Management System

NWS - National Weather Service

PDM - Pre-Disaster Mitigation

PDSI - Palmer Drought Severity Index

piC/L - picoCuries per Liter

PL - Public Law

PSC - Public Safety Communications

RCRA - Resource Conservation and Recovery Act

SA - Spectral Acceleration

SBA - Small Business Administration

SHELDUS - Spatial Hazard Events and Losses Database for the United States

SPI - Standardized Precipitation Index

SR - State Route

STAPLEE - Social, Technical, Administrative, Political, Legal, Economic, Environmental

SWSI - Surface Water Supply Index

TAZ - Transportation Analysis Zone

TRAX - Transit Express

TRI - Toxic Release Inventory

UCAN - Utah Communication Agency Networks

UDAF - Utah Department of Agriculture and Food

UDOT - Utah Department of Transportation

UEDV - Utah Economic Data Viewer

UFFSL - Utah Division of Forestry, Fire, and State Lands

UGS - Utah Geological Survey

USGS - United States Geological Survey

USACE - United States Army Corps of Engineers

USC - United States Code

USDA - United States Department of Agriculture

USFS - United States Forestry Service

USU - Utah State University

UUSS - University of Utah Seismic Stations

WFZ - Wasatch Fault Zone

WUI - Wildland-Urban Interface

B.0 APPENDIX (B) - 2018 Carbon County Mitigation Plan

Please visit https://hazards.utah.gov/carbon-county/ for more information

C.0 APPENDIX (C) - References & Works Cited

Background information and data for this plan was obtained from the sources listed below. From these sources, the Planning Consultant extracted relevant information and data. That information and data was subsequently submitted to the County Work Groups for their consideration and approval for inclusion into the Plan.

See also Appendix H for GIS sources.

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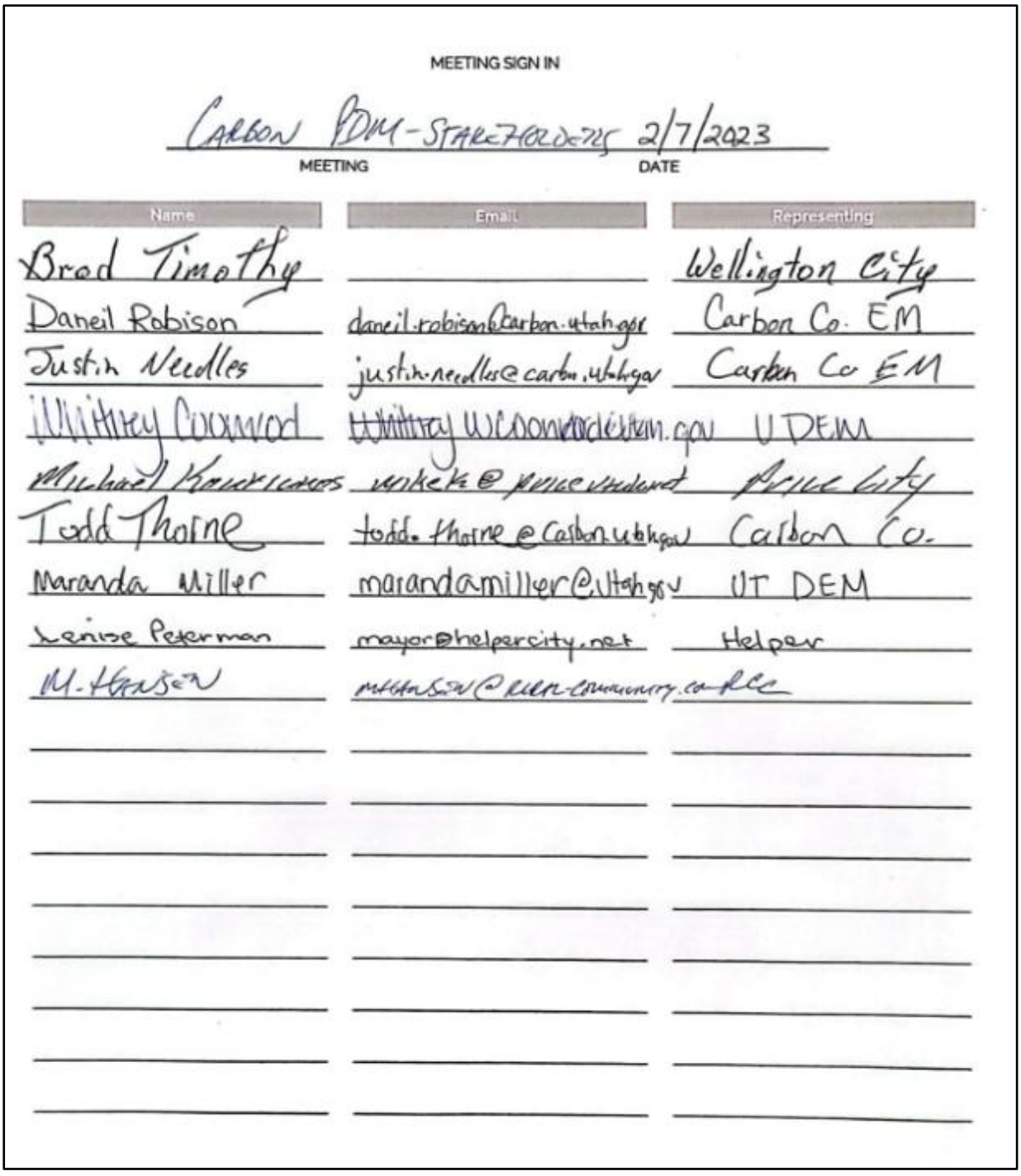
D.0 APPENDIX (D) - Meeting Agendas & Attendance Lists

While there are relatively few physical attendance sheets from stakeholder meetings, this should not be interpreted as a lack of engagement. Early on, the planning team recognized that most stakeholder organizations faced staffing constraints that made prolonged group meetings difficult to coordinate and attend. As a result, we prioritized having more productive one-on-one meetings with individual stakeholders. This allowed us to solicit focused input tailored to each party's role, resources, and areas of expertise. Additionally, we leveraged online collaboration tools like a publicly-accessible Google Doc for the plan draft and an initiative website with self-paced assignments. Stakeholders could easily access these resources on their own schedule to provide input and stay updated on the latest plan drafts. This flexible approach promoted broader participation by accommodating stakeholders' limited availability while still ensuring their voices were incorporated throughout the planning process.

D.1 Attendance Sheets for Group Meetings of Stakeholders

Note that the following meeting was the initial introductory meeting held at the Carbon Fairgrounds.



MEETING SIGN IN

Carbon PDM - Stakeholders 2/7/2023

MEETING DATE

Name	Email	Representing
Brad Timothy		Wellington City
Daneil Robison	daneil.robison@carbon.utah.gov	Carbon Co. EM
Justin Needles	justin.needles@carbon.utah.gov	Carbon Co EM
Whitney Coxwood	whitney.w@carbon.gov	UDEM
Michael Kourianos	mikek@pricecity.net	Price City
Todd Thorne	todd.thorne@carbon.utah.gov	Carbon Co.
Maranda Miller	marandamiller@utah.gov	UT DEM
Denise Peterman	mayor@helpercity.net	Helper
M. Hansen	mhansen@huntington-cleveland.com	HCC

LEPC

Local Emergency Planning Committee
Carbon County
19-Sep-22
Hosted by: Rural Community Consultants

Please Print

Name	Phone	Representing	Email
Paul Bodnar	435-630-6264	Utah FFSL	bodnarpaul@gmail.com
David Jelin	435 630 8474	VETERANS	VETERANS@AMERICANLEGIONPOST3.ORG
Jeff Richens	435 636 9402	PRWID	jrichens@prwid.com
Bill Civish	435 828 7126	BLM	wcivish@blm.gov
Scott Nelson	435-630-0158	MWP	Scott.Nelson@mwpipe.com
Jeff Weddle	801-618-9978	CUH	jeff.weddle@hpat.net
Jaren Powell	(435) 749-0930	Emery Telcom	tpowell@emerytelcom.com
Brittney Garff	435-650-6606	SEUHD	bgarff@utah.gov
Chet Ingram	435-650-3335	SEUHD	Chetingram@utah.gov.
Justin Barrington	435-630-6287	State of Utah	jbarrington@utah.gov
Justin Needles		CCEM	
Daneil Robison	435-820-1835	CCEM	daneil.robison@carbon.utahgov
Kevin Barjenbruch	801-386-0842	NWS	kevin.barjenbruch@noaa.gov

Please Print

Name	Phone	Representing	Email
Ryan Toone	online	enviro Care	
John Rokich	on line	211	
Todd Thorne	online	Planning / Zoning.	
Matt Perea	on line	wellington Fire	
Nettie Martinez	435-650-8818	CCEMS	Jonett.Martinez@Carbon.Utah.Gov
Brandi Davis	435-636-3746	CCEMS	Brandi.davis@carbon.utah.gov

D.2 Sample Stakeholder Invitation Letter

RURAL COMMUNITY CONSULTANTS

801.550.5075
rural-community.com
775 W 1200 N, #200
Springville UT, 84663

Mayor David Avery
East Carbon / Sunnyside
PO Box 70
East Carbon, UT 84520

13 May 2023

RE: INFORMATION NEEDED FOR CARBON COUNTY HAZARD PLAN

East Carbon / Sunnyside is listed as a stakeholder in the Carbon County Pre-Disaster Hazard Mitigation Plan (PDM) initiative that is currently underway. As you know, the purpose of this plan is to identify threats to the community, and to then create mitigation strategies that address those threats by establishing planning goals and objectives. **Communities that don't participate in this process will not be eligible to receive different FEMA funding.**

Our firm has been helping the County gather and compile information, and we are hoping that we can have a draft of the plan available for public review in the next 30 days. In order to maintain their participation status, we have asked each stakeholder entity to provide the following information, **and we need more information from your jurisdiction**:

1. Contact information *(not submitted)*
2. A formal resolution of support from your Council / Board *(not submitted)*
3. Brief status report on the goals that were in the previous plan *(not submitted)*
4. A simple inventory of the jurisdiction's adopted plans and policies *(not submitted)*
5. High-level estimate of where future development will take place in your area *(not submitted)*
6. Copies of local documents *(not submitted)*
7. A basic list of your critical infrastructure assets *(not submitted)*
8. Identification of new goals for the jurisdiction *(not submitted)*

The draft plan can be found on the initiative website: **CarbonHazardPlan.org.** Details about what information is needed from you is included with this letter, and is also available on that website (password to the login is **CarbonPDM**).

We invite you to provide the requested information through the links on that site, or to participate in a stakeholder workshop meeting that will be held on May 25th (1:00pm). This meeting will be held in the Carbon County Ambulance Garage at 1550 East Airport Road in Price. The intent of this meeting is to gather all missing local input so that the other participating jurisdictions can proceed through the process.

If you would rather participate in this meeting via videoconference, please let me know at the email address below.

Respectfully submitted,

Mike Hansen, Rural Community Consultants
mhansen@rural-community.com

Sample letter from the plan-writing team to stakeholders to invite participation.

D.3 Invited Jurisdictions, Local Operators, and Specialized Local Districts

Invited Jurisdictions	**Jurisdiction / Entity**	**Contact Name & Information**	**2023 Participation (Y/N/Invited)**
	East Carbon/ Sunnyside City	Dave Avery djavery971@gmail.com	Yes
	Helper City	Lenise Peterman mayor@helpercity.net	Yes
	Price City	Mike Kourianos mikek@priceutah.net	Yes
	Wellington City	Brad Timothy mayor@wellingtonutah.org	Yes
	Scofield Town	Jim Levanger jlcl07@gmail.com	Yes
	Southeastern Utah Association of Local Governments	Todd Thorne todd.thorne@carbon.utah.gov	Yes
	Duchesne EM	Mike Lefler mlerfler@duchesne.utah.gov	Invited
	Emery EM	Janalee Luke janalee.luke@ecso.utah.gov	Invited
	Grand EM	Jennifer Swenson jswenson@grandcountysheriff.org	Invited
	Sanpete EM	Jayson Albee jalbee@sanpetecountyutah.gov	Invited
	Uintah EM	Heidi Lundberg hlundberg@uintah.utah.gov	Invited
	Utah EM	Peter Quittner peterq@utahcounty.gov	Invited
	Wasatch EM	Jeremy Hales jhales@wasatch.utah.gov	Invited
Invited Specialized Local Districts	**Jurisdiction / Entity**	**Contact Name & Information**	**2023 Participation (Y/N/Invited)**
	Carbon County School District	Micha Salas - Superintendent salasm@carbonschools.org	Yes
	NOAA	kevin.barjenbruch@noaa.gov	Invited
	Price River Water Improvement District (PRWID)	Jeff Richens jeffprwid@emerytelcom.net	Yes
	Redtail Aviation	info@flyredtail.com	Invited
	Utah DEM	marandamiller@utah.gov	Yes

	Utah Geological Survey (UGS)	billkeach@utah.gov	Invited

D.4 Invited Nongovernmental Organizations and State and Federal Government Stakeholders (Non-participatory)

Invited Non-Governmental Organizations (Non-Participatory)	**Jurisdiction / Entity**	**Contact Name & Information**	**2023 Participation (Y/N/Invited)**
	American Red Cross - Utah	Kristy Denlein kristy.denlein@redcross.org	Invited
	Carbon Chamber of Commerce	Corporate.communications@dominionenergy.com	Invited
	Castleview Hospital	CCCom2@pacificorp.com	Invited
	Dominion Energy (Enbridge Gas)	"Contact Us" website at: https://www.enbridgegas.com/utwyid/contact-us	Invited
	Rocky Mountain Power	fema-capssse@fema.dhs.gov	Invited
State & Federal Government Stakeholders (Non-Participatory)	**Stakeholder Entity**		**2023 Participation (Y/N)**
	FEMA Region 8 Office Community Assistance Program – State Support Services Element		N
	Military	Carl Wiggins, Hill Air Force Base Emergency Manager carl.wiggins.1@us.af.mil Barbara Fisher, PIO barbara.fisher.1@us.af.mil	N
	National Weather Service	Kevin Barjenbruch	N
	State Dam Safety	Joel Williams, Deputy Director joelwilliams@utah.gov	N
	State Department of Transportation	Rob Wight, Region 1 Director contactudot@utah.gov, rwight@utah.gov	N

	State Fire and Forestry Agency	Rick Cooper, Weber County Fire Warden/Utah Division of Forestry, Fire, and State Lands, rcooper@weberfd.com	N
	State Fire and Forestry Agency State Geological Survey	Bill Keach, UGS Director/State Geologist billkeach@utah.gov	N
	State National Flood Insurance Program	Jamie Peterson (Utah DEM)	N
	State Planning Office	Laura Hanson, State Planning Coordinator gopb@utah.gov	N
	State Water Resources Agency	Kyle Stevens, Chair of Water Resources Board krstephens08@gmail.com	N
	US Army Corps of Engineers	Sacramento Civil Works Region spk-pao@usace.army.mil	N
	US Department of Housing and Urban	Kelly Jorgensen, Field Office Director UT_Webmanager@hud.gov	N
	US Department of Transportation	Utah Field Office-FMCSA	N
	US Environmental Protection Agency	Region 8 Field Office r8eisc@epa.gov	N
	US Geological Survey	Region 7 usgsstore@usgs.gov	N
	USFS	Tawny Myers, LE Supervisor tawnylynn.myers@usda.gov	N
	Utah Department of Emergency Management	Jamie Peterson, State DEM Region 1 Liaison	N
	Ute Indian Tribe of the Uintah and Ouray Reservation	Greg Buxton, PE	Provided draft for review during FEMA review period

D.5 Community Representatives

Jurisdiction	Contact Name And Information	2023 Participation (Yes/No)	Adoption Date
East Carbon/ Sunnyside City	Dave Avery, Mayor djavery971@gmail.com	Yes	TBD
Helper City	Lenise Peterman, Mayor mayor@helpercity.net	Yes	TBD
Price City	Mike Kourianos, Mayor mikek@priceutah.net	Yes	TBD

Wellington City	Brad Timothy, Mayor mayor@wellingtonutah.org	Yes	TBD
Scofield Town	Jim Levanger, Mayor jlcl07@gmail.com	Yes	TBD

D.6 Attendance List for One-on-One Stakeholder Meetings

Stakeholder and Participants	Date	Form at	Purpose and Participation
Carbon School District *(Jared Hansen, Engineer)*	2023.11.08	online	Request missing information on new goals and content review.
Helper *(Mayor Peterman)*	2023.11.19	online	Information exchange on capital projects.
Helper *(Ashely Ellison, Public Works Director)*	2024.02.15	in-person	Request new contact for information on status of previous and new goals.
Southeast Utah Association of Governments *(Todd Thorne, Regional Planner)*	2024.02.15	in-person	Request for support for information gathering initiative.
Wellington City *(Rebecca Evans, City Council Member)*	2024.02.15	in-person	Request new information on status of previous and new goals.
East Carbon / Sunnyside *(Patricia Morris, City Clerk)*	2024.02.15	in-person	Request new information on status of previous and new goals.
Helper *(Brittany Hansen, Public Works Director)*	2024.03.13	in-person	Gather missing information on new goals and content review from the public works director.
Price City *(Miles Nelson and John Procarione, City Public Works Director and Staff)*	2024.03.13	in-person	Discussion about capital projects with public works staff.
Wellington City *(City Council)*	2024.03.13	in-person	Presentation / discussion with City Council.
East Carbon / Sunnyside *(Liz Holt, City Recorder)*	2024.03.14	in-person	Gather missing information on goals, review past projects, review critical facilities.
Southeast Utah Association of Local Governments *(Todd Thorne, Regional Planner)*	2024.03.20	online	Verification of capital projects on SEUALG list.
Carbon School District *(Jared Hansen, Engineer)*	2024.03.22	online	Gather missing and verify existing information on new goals and content review.
Scofield *(Mayor Levanger)*	2024.03.22	online	Gather missing information on new goals and content review.
East Carbon / Sunnyside *(Liz Holt, City Recorder)*	2024.03.22	online	Gather missing information on new goals and content review.
Helper *(Brittany Hansen, Planning Administrator)*	2024.03.22	online	Review draft profile.
Price City *(Miles Nelson, Public Works Director)*	2024.03.22	online	Gather missing information on new goals.

Price River Water *(Jeff Richens and Mica Marrelli, Director and Assistant)*	2024.03.22	online	Gather missing information on new goals and content review.
Wellington (Nicole Oveson, City Clerk)	2024.03.22	online	Gather missing information on new goals and content review.

D.7 Core Planning Team Meetings

While individual stakeholder meetings were emphasized, the core planning team met throughout the project to coordinate on the project and address specific issues. The core team met both virtually and in-person.

A list of scheduled meetings and unique agenda items follows. Note that this list does not include the numerous exchanges via email and phone.

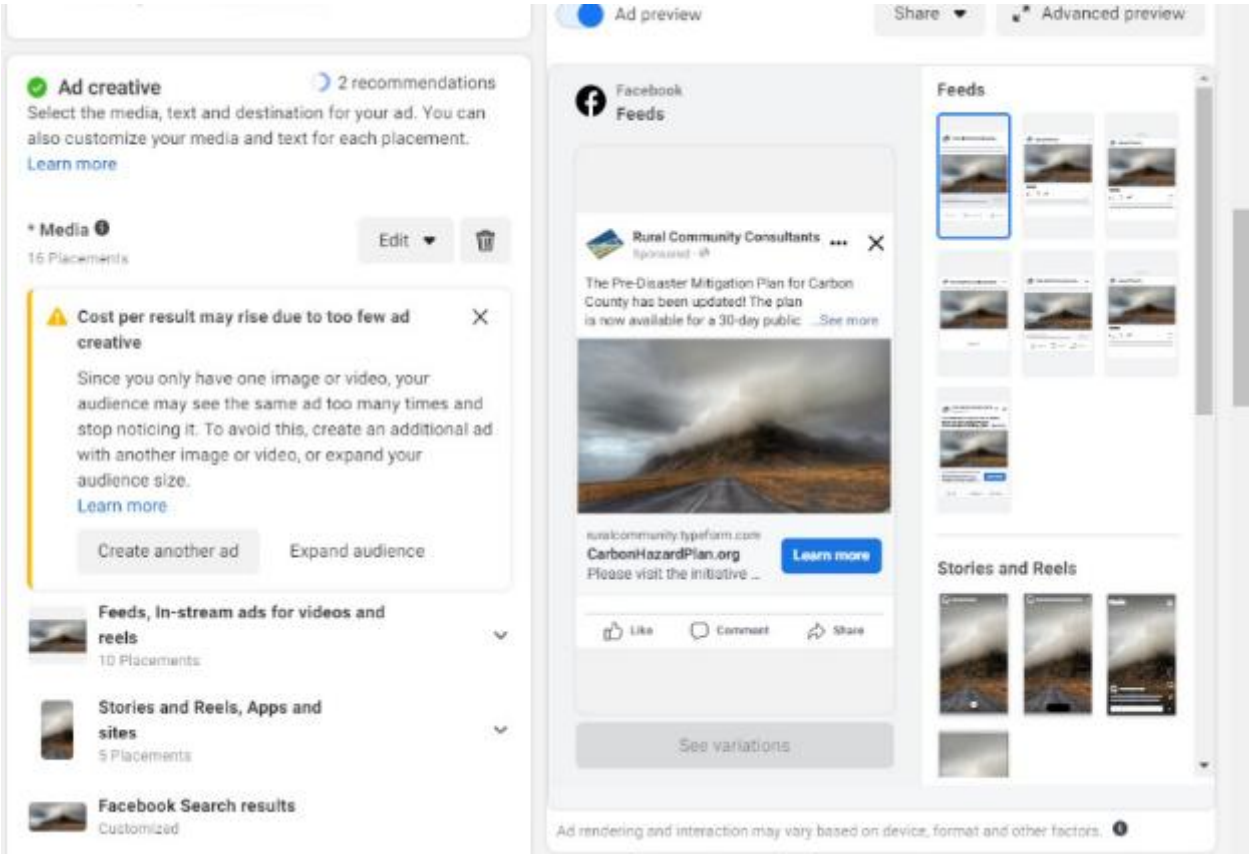
Figure D.7.1 Dates and Agenda of Core Planning Team Meetings

Date	Unique Agenda Item(s)
6/15/2022	Kickoff Meeting with Carbon County Emergency Manager and Rural Community Consultants, General Team Introduction, Project Management Plan + Timeline Overview
9/19/2022	Stakeholder kickoff meeting
11/28/2022	LEPC meeting
1/23/2023	Include state GIS modeling / mapping staff
1/27/2023	include hazard modeling staff from University of Utah
2/7/2023	Stakeholder meeting
5/25/2023	in-person and online meeting, stakeholders invited
6/6/2023	focus on capital improvement lists
2/2/2024	project update discussion
2/9/2024	project update discussion (follow-up), new partnership with BRAG AOG
2/15/2024	draft readthrough
2/16/2024	(new team) coordination meeting
2/23/2024	coordination meeting
3/1/2024	coordination meeting
3/8/2024	coordination meeting
3/11/2024	update meeting for county (in-person)
3/15/2024	coordination meeting
3/22/2024	coordination meeting
3/29/2024	coordination meeting

4/5/2024	coordination meeting
4/12/2024	coordination meeting
4/26/2024	coordination meeting
5/3/2024	coordination meeting
5/17/2024	coordination meeting
5/31/2024	coordination meeting
6/11/2024	review all public comments

D.8 Public Announcement(s)

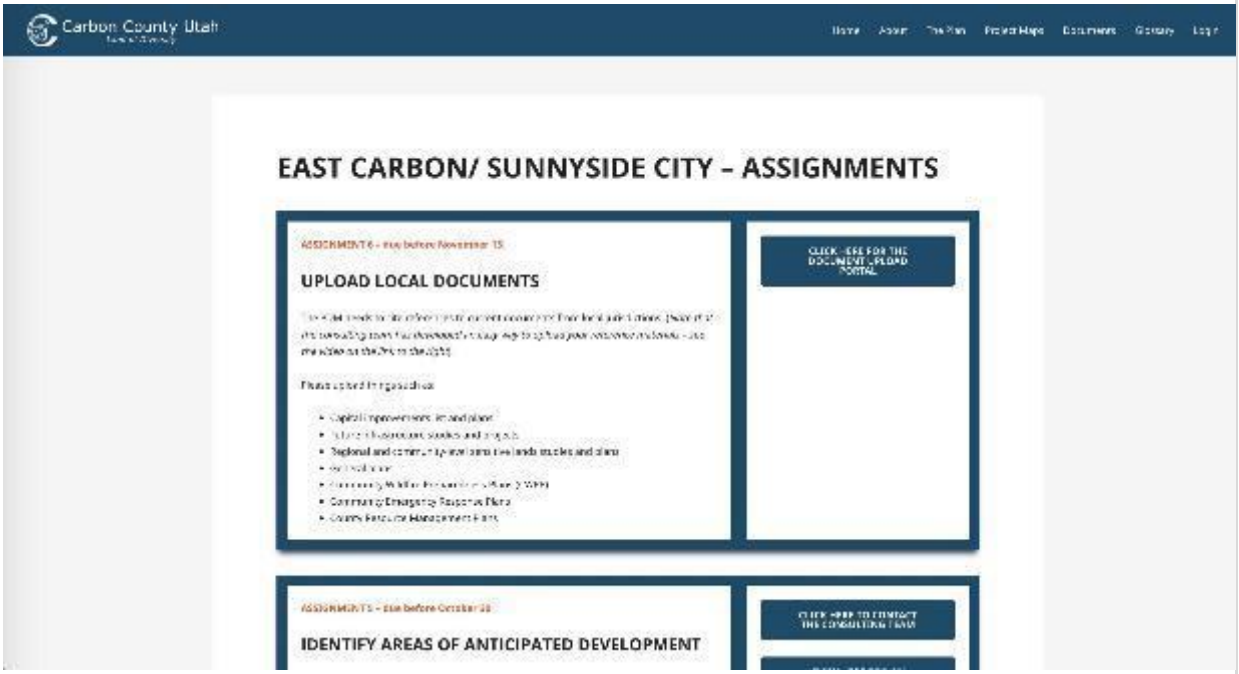
Screen capture of the initiative website that was advertised publicly and used to gather information from stakeholders.



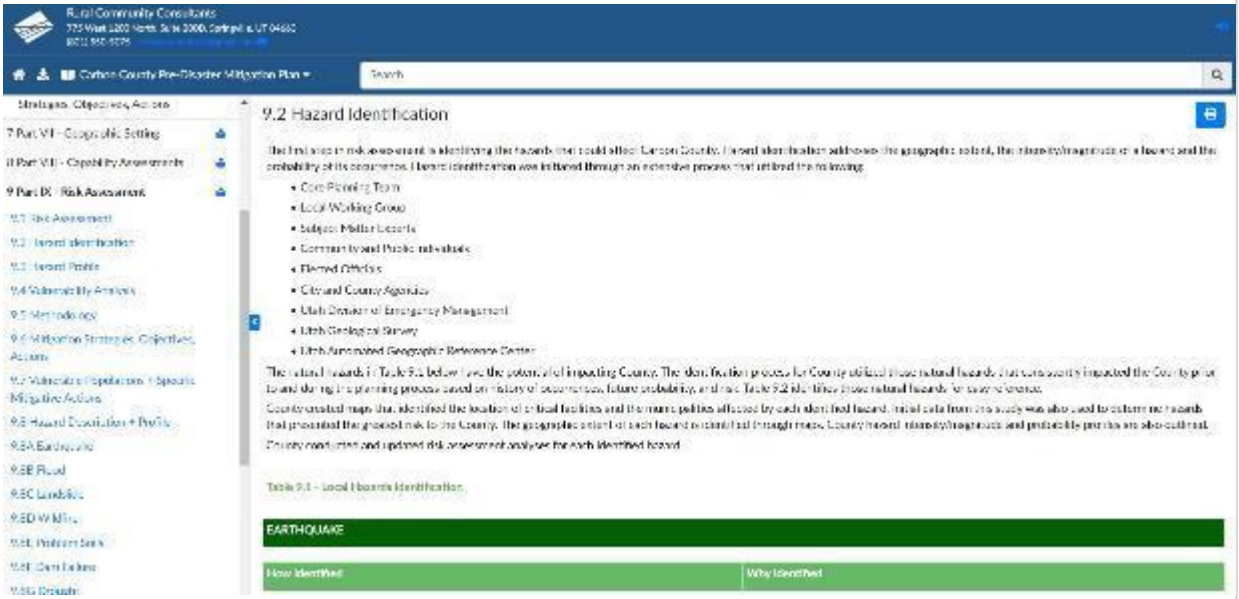
Screen capture image of a social media campaign used to inform the public about the initiative.

D.9 Stakeholder Information Portal

In order to facilitate communication between stakeholders and plan writers, a web portal was incorporated into the initiative website.



Screen Capture of the "assignment pages" on the secured section of the initiative website. Stakeholders were provided specific instructions and individual folders to upload their response materials.



Screenshot of typical edits provided by stakeholders and captured by the document (before committee acceptance). (civiclinQ.com)

E.0 APPENDIX (E) - Authority

E.1 Authority

E.1.1 Federal

Public Law (PL) 93-288 as amended, established the basis for federal hazard mitigation activity in 1974. A section of this Act requires the identification, evaluation and mitigation of hazards as a prerequisite for state receipt of future disaster assistance outlays. Since 1974, many additional programs, regulations and laws have expanded on the original legislation to establish hazard mitigation as a priority at all levels of government. When PL 93-288 was amended by the Stafford Act, several additional provisions were added that provide for the availability of significant mitigation measures in the aftermath of Presidential declared disasters. Civil Preparedness Guide 1- 3, Chapter 6- Hazard Mitigation Assistance Programs, places emphasis on hazard mitigation planning directed toward hazards with high impact and threat potential.

President Clinton signed the Disaster Mitigation Act of 2000 (DMA 2000) into law on October 30, 2000. Section 322 defines mitigation planning requirements for state, local and tribal governments. Under Section 322, states are eligible for an increase in the federal share of hazard mitigation, if they submit a mitigation plan (which is a summary of local and/or regional mitigation plans) that identifies natural hazards, risks, vulnerabilities and actions to mitigate risks.

E.1.2 State

Some examples of legislation enhancing the ability of government and persons to mitigate, respond and recover from natural disasters include the Governor's Emergency Operation Directive, The Robert T. Stafford Disaster Relief and Emergency Assistance Act, amendments to Public Law 93-288, as amended, Title 44, CFR, Federal Emergency Management Agency Regulations, as amended, State Emergency Management Act of 1981, Utah Code 53-2a-101, Disaster Response Recovery Act, 53-2a-201, Executive Order of the Governor 2020-1, and the Emergency Interim Succession Act, 53-2a-801.

E.1.3 Local

Local governments play an essential role in implementing effective mitigation. For the purposes of this Plan, local governments include not only cities and counties, but also special service districts with elected boards. Each local government will review all present or potential damages, losses and related impacts associated with natural hazards to determine the need or requirement for mitigation action and planning. In the cities making up Carbon County, the local executives responsible for carrying out plans and policies are the County commissioners and Cities or mayors and administrators. The Southeast Association of Local Governments is a regional planning and coordination agency that serves as a platform for local governments to collaborate on a range of issues including pre-disaster mitigation.

Local governments must be prepared to participate in the post-disaster hazard mitigation team process and pre-disaster mitigation planning as outlined in this document in order to effectively protect their citizens. All jurisdictions in Carbon County participated in the development of this plan.

F.0 APPENDIX (F) - Critical Facilities

FEMA's definition of a Critical Facility is as follows:

For some activities and facilities, even a slight chance of flooding is too great a threat. Typical critical facilities include hospitals, fire stations, police stations, storage of critical records, and similar facilities. These facilities should be given special consideration when formulating regulatory alternatives and floodplain management plans (https://www.fema.gov/glossary/critical-facility).

F.1 Natural Hazard Impact Legend

Carbon County's summary for the risk assessment for all the critical facilities by hazard (DF = Dam Failure, DR = Drought, EQ = Earthquake, FL = Flood, IN= Infestation, LS= Landslide, SW= Severe Weather, PS= Problem Soils, WF= Wildfire).

Each hazard has its own criteria for risk:

Wildfire categories of Very, Very Low (VVL), Very Low (VL), Low (L), Low-Moderate (L-M), Moderate (M), Moderate-High (M-H, High (H), Very High (VH), Extreme (E), and Urban, Agriculture, Water, or Barren (W). (DNR for the Utah Wildfire Risk Assessment Portal has identified)

Dam Failure has High (H) = facility is in inundation area, Moderate (M) = facility is within 0.10 mile of inundation area, and Low (L) = facility is >0.10 mile of inundation area.

Earthquake Peak Ground Acceleration has High (H), Moderate (M) and Low (L) based on data from USGS.

Landslide has High (H), Moderate (M), Low (L) and Very Low (VL) based on USGS.

Drought has Exceptional Drought (D4), Extreme Drought (D3), Severe Drought (D2), Moderate Drought (D1), Abnormally Drought (D0), None: No Drought.

National Integrated Drought Information System

Flood has High (H), Moderate (M), LW (L), Very Low (VL) Based on Flood Plain Maps and input from the County Emergency Manager.

Infestation has High (H), Moderate (M), Low (L) and Very Low (VL).

Severe Weather has High (H), Moderate (M), Low (L) and Very Low (VL).

Problem Soils High has (H), Moderate (M), Low (L) and Very Low (VL).

If a hazard does not affect any facility (such as infestation) it is left off the table or N/A is utilized.

F.2 Carbon County Critical Facilities (2018 - 2023)

Carbon County Critical Facilities (2018)									
Facility Name	DF	DR	EQ	FL	IN	LS	SW	PS	WF
Castleview Hospital *Price, UT*	L	D2	M	L	L	VL	M	M	L
Eastern Utah Surgical Center *Price, UT*	VL	D2	M	L	L	VL	M	M	L
Carbon Medical Service Association *East Carbon, UT*	L	D2	H	L	L	VL	M	M	L
Helper Clinic *Helper, UT*	H	D2	M	M	L	VL	M	M	L
Utah State University—College of Eastern Utah *Price, Utah*	VL	D2	M	L	L	VL	M	M	L
Carbon High School *Price, UT*	VL	D2	M	L	L	VL	M	M	L
Castle Heights *Price, UT*	VL	D2	M	L	L	VL	M	M	L
Castle Valley Center *Price, UT*	VL	D2	M	H	L	VL	M	M	L
Creekview Elementary School	H	D2	M	H	L	VL	M	M	L

Price, UT									
Lighthouse Learning Center *Price, UT*	VL	D 2	M	L	L	VL	M	M	L
Mount Harmon Junior High School *Price, UT*	VL	D 2	M	L	L	VL	M	M	L
Wellington Elementary School *Wellington, UT*	VL	D 2	L	L	L	VL	M	M	L
Helper Junior High School *Helper, UT*	VL	D 2	M	L	L	VL	M	M	L
Pinnacle Canyon Academy *Price, Utah*	VL	D 2	M	L	L	VL	M	M	L
Sally Mauro Elementary School *Helper, UT*	VL	D 2	M	L	L	VL	M	M	L
Bruin Point Elementary *Sunnyside, UT*	L	D 2	H	M	L	VL	M	M	L
Carbon County Children's Justice Center *Price, UT*	VL	D 2	M	L	L	VL	M	M	L
Carbon County Sheriff Office and Carbon County Jail	L	D 2	M	L	L	VL	M	M	L

Price, UT									
Juvenile Justice Center and Castle County Youth Center	VL	D 2	M	L	L	VL	M	M	L
Price, UT									
Price Water Treatment Plant	V VH	D 2	M	H	L	VL	M	M	M
Price, UT									
Price River Water Improvement District—Water Treatment Plant	V VH	D 2	M	H	L	VL	M	M	M
Water Storage & Treatment Plant	L	D 2	M	L	L	VL	M	M	L
Water Storage	VL	D 2	M	L	L	VL	M	M	L
Wood Hill-buried									
Northeast Price- above ground									
Sunnyside Cogeneration Association	M	D 2	H	L	L	VL	M	M	L
Sunnyside, UT									
Carbon County Airport	VL	D 2	M	L	L	VL	M	M	M
Price, UT									
County Road Department	VL	D 2	M	H	L	VL	M	M	L
Price, Utah									

Three-State of Utah DOT Facilities *Price, Utah 84501*	VL	D 2	M	M	L	VL	M	M	L
Helper UT 84526	M	D 2	H	M	M	VL	M	M	L
Wellington, UT	VL	D 2	L	L	L	VL	M	M	L
Road Departments *Price, UT*	M	D 2	M	H	L	VL	M	M	L
Helper, UT	M	D 2	M	M	L	VL	M	M	L
Sunnyside, UT	L	D 2	H	M	L	VL	M	M	L
Savage Coal Terminal (SCT) Savage Services Corporation Wildcat Loadout Facility - Andalex Resources Inc.	M	D 2	L	L	L	VL	M	M	L
Compressor Facilities Consumer Site Consumer Site	VL	D 2	M	L	L	VL	M	M	M
-Pinnacle Peak Location *Price, UT 84501*	VL		M	L	L	VL	M	M	M
-Dominion Energy Plant *Price, UT*	VL		M	L	L	VL	M	M	M

84501									
Substations	VL	D 2	M	L	L	VL	M	M	L
-80 North 200 East									
Price, UT 84501									
-533 North 1200 East	VL		M	H	L	VL	M	M	L
Price UT 84501									
-50 North 50 East	VL		M	H	L	VL	M	M	L
Price, Utah 84501									
- 641 West Price River Drive	H		M	M	L	VL	M	M	L
Price UT									
Substation	L	D 2	M	L	L	VL	M	M	L
-Helper Substation									
Helper, UT									
-Martin Sub Station	V H	D 2	M	H	L	VL	M	M	L
Helper, UT									
Substation	VL	D 2	H	L	L	VL	M	M	L
Columbia, UT									
Substation	VL	D 2	M	M	M L	VL	M	M	M
Helper, UT									
Substation	VL	D 2	M	H	M	VL	M	M	M
Price, UT									
East Carbon Fire Dept	H	D 2	H	H	L	VL	M	M	L
East Carbon, UT									

Helper Fire Department *Helper, Utah*	H	D 2	M	M	L	VL	M	M	L
Scofield Fire Department *Helper, UT*	VL	D 2	M	M	L	VL	M	M	L
Wellington Volunteer Fire Department *Wellington, UT*	L	D 2	L	L	L	VL	M	M	L
East Carbon Police Department *East Carbon, UT*	VL	D 2	H	L	L	VL	M	M	L
Helper Police Department *Helper, UT*	H	D 2	M	M	L	VL	M	M	L
Price Police Department *Price, UT*	VL	D 2	M	L	L	VL	M	M	L
Highway Patrol *Price, UT*	VL	D 2	M	L	L	VL	M	M	L
Wellington Police Department *Wellington, Utah*	L	D 2	L	L	L	VL	M	M	L
Eastern Utah Broadcasting KOAL 750AM KARB 98.3FM	M	D 2	M	M	L	VL	M	M	L

KRPX 95.3FM *Helper, UT*									
Emery Telcom ETV News *Price, UT*	VL	D 2	M	L	L	VL	M	M	L
AJB Broadcasting KUSA 100.1FM KSLL 104.9FM KARB 1080AM *Price, UT*	VL	D 2	M	L	L	VL	M	M	L
Sun Advocate *Price, UT*	VL	D 2	M	L	L	VL	M	M	L

County, Amateur Radio Resources, 2021

Note: Data is forthcoming. We will update this section when data is available from stakeholders.

County, Electric Generation Facility Vulnerability, 2021

Note: Data is forthcoming. We will update this section when data is available from stakeholders.

County, Emergency Operations Centers Vulnerability, 2023

Note: Data is forthcoming. We will update this section when data is available from stakeholders.

Carbon County, Oil Refining Facility Vulnerability, 2021

Note: Data is forthcoming. We will update this section when data is available from stakeholders.

County, Fire Station Vulnerability, 2021

Note: Data is forthcoming. We will update this section when data is available from stakeholders.

County, Hospital Vulnerability, 2021

Note: Data is forthcoming. We will update this section when data is available from stakeholders.

County, Law Enforcement Facility Vulnerability, 2021

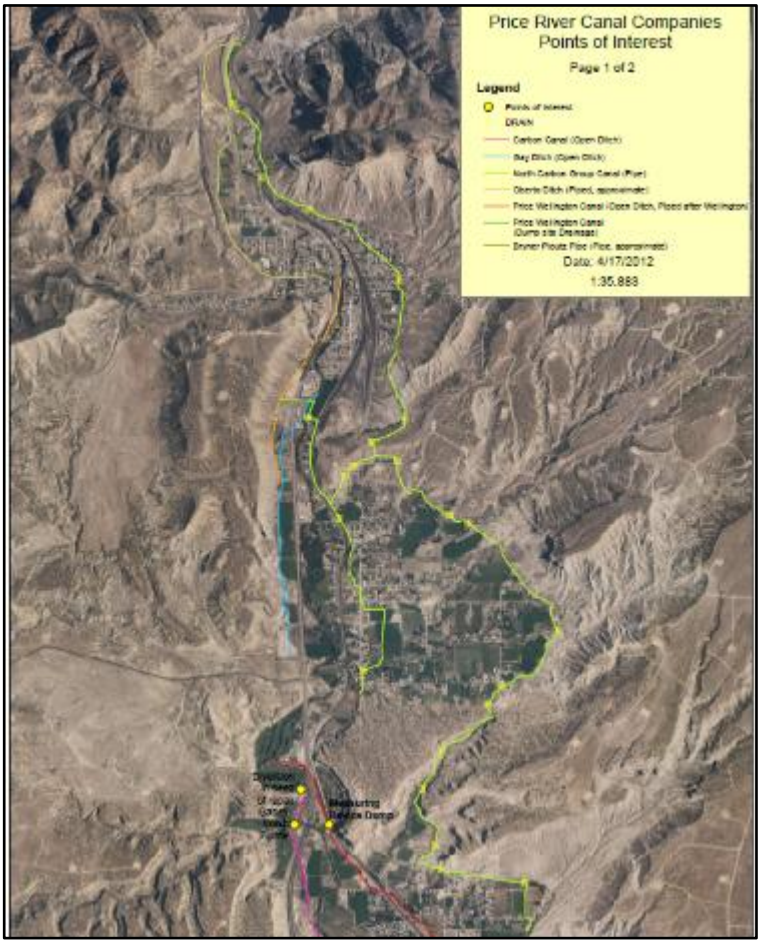
Note: Data is forthcoming. We will update this section when data is available from stakeholders.

County, School Facility Vulnerability, 2021

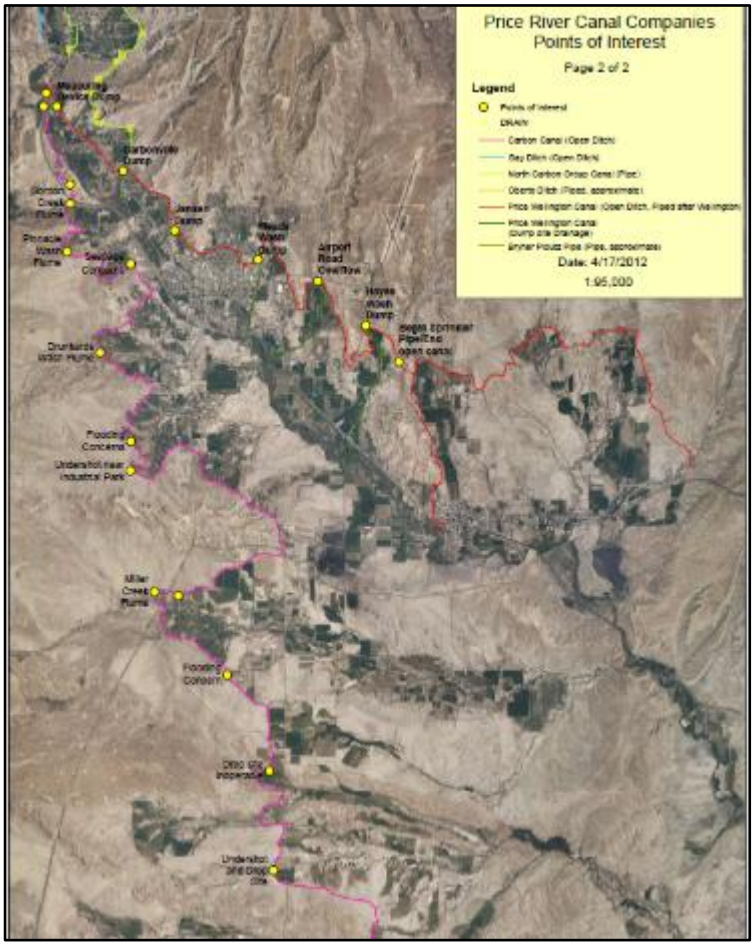
Note: Data is forthcoming. We will update this section when data is available from stakeholders.

County, Water + Wastewater Facility Vulnerability, 2021

Note: Data is forthcoming. We will update this section when data is available from stakeholders.



Carbon County Canals



Carbon County Canals (2)

G.0 Appendix (G) - Detailed Risk Assessment Methodology

G.1 GIS Methodology

Geographic Information System (GIS) software was used as an analysis tool to complete the hazard analysis for the County Natural Hazards Pre-Disaster Mitigation Plan. For most hazards a comparison was made between digital hazard data and Transportation Analysis Zone (TAZ) demographic information.

Statewide digital data was obtained from Utah Automated Geographic Reference Center (AGRC) for problem soils only. The vulnerability assessment for the County estimates the number of homes, business, infrastructure and population vulnerable to each hazard and assigns a replacement dollar value to residential structures and infrastructure in each hazard area. All the analysis takes place within the spatial context of a GIS. With the information available in spatial form, it is a simple task to overlay the natural hazards with census data to extract the desired information.

The methodology used to determine vulnerability for hazards was identical. The number of households and population vulnerable to each hazard was determined using WFRC Transportation Analysis Zone (TAZ) data and Block Data from the 2020 Census data. The Block Data from the 2020 Census database, or TAZ data, was intersected with each of the mapped hazard layers in order to determine the number and location of residential housing units and population at risk from hazards. The methodology used assumes an even distribution of residential housing units and population across each census block. Point data from HAZUS-MH was used to determine the number of businesses, and the annual sales of each business in each hazard area.

The number of acres for all hazards was determined for each City and the unincorporated County. Once an acre total was identified it was overlaid on the Census Block data or TAZ data to determine the total number of homes impacted. The number of homes impacted was then multiplied by the average housing value to determine the total value of potential loss. 2020 average house values from the U.S. Census Bureau were used for Carbon County. Content values are not included, which would raise the potential loss numbers for housing by approximately 50%.

In addition to the above methodology, earthquake risk was profiled using HAZUS-MH, which is shorthand for Hazards United States - Multihazards. The data used in this report is from a model that was run in 2024.

The HAZUS-MH Earthquake Model is designed to produce loss estimates for use by federal, state, regional and local governments in planning for earthquake risk mitigation, emergency preparedness, response and recovery. The methodology deals with nearly all aspects of the built environment and a wide range of different types of losses.

Extensive national databases are embedded within HAZUS-MH, containing information such as demographic aspects of the population in a study region, square footage for different occupancies of buildings, and numbers and locations of bridges. Embedded parameters have been included as needed. Using this information, users can carry out general loss estimates for a region. The HAZUS-MH methodology and software are flexible enough that locally developed inventories and other data that more accurately reflect the local environment can be substituted, resulting in increased accuracy.

Uncertainties are inherent in any loss estimation methodology. They arise in part from incomplete scientific knowledge concerning earthquakes and their effects upon buildings and facilities. They also result from the approximations and simplifications that are necessary for comprehensive analyses.

Incomplete or inaccurate inventories of the built environment, demographics and economic parameters add to the uncertainty. These factors can result in a range of uncertainty in loss estimates produced by the HAZUS-MH Earthquake Model, possibly at best a factor of two or more.

The methodology has been tested against the judgment of experts and, to the extent possible, against records from several past earthquakes. However, limited and incomplete data about actual earthquake damage precludes complete calibration of the methodology. Nevertheless, when used with embedded inventories and parameters, the HAZUS-MH Earthquake Model has provided a credible estimate of such aggregated losses as the total cost of damage and numbers of casualties. The Earthquake Model has done less well in estimating more detailed results - such as the number of buildings or bridges experiencing different degrees of damage.

Such results depend heavily upon accurate inventories. The Earthquake Model assumes the same soil condition for all locations, and this has proved satisfactory for estimating regional losses. Of course, the geographic distribution of damage may be influenced markedly by local soil conditions. In the few instances where the Earthquake Model has been partially tested using actual inventories of structures plus correct soils maps, it has performed reasonably well.

The HAZUS Model estimates building losses, numbers of shelters required for displaced households, amounts of debris generated, and numbers of casualties. A HAZUS report was completed for each of the counties covered in this Plan.

The potential impact of natural hazards on transportation and utilities was determined in a similar method as described above. Roads and utilities were overlaid on the hazard areas and the impacted utility and road segments were inventoried. Once the length of vulnerable infrastructure was determined it was multiplied by cost estimate information from HAZUS-MH.

In addition to the linear features, point data for critical facilities, dams, care facilities, schools, power generation facilities and substations were analyzed to determine if the feature was within a hazard area.

Limited availability of digital data presented a problem in completing the vulnerability assessment. Due to the availability of HAZUS data, potential loss numbers were only determined for earthquakes and flood. Additional limitations to the above described analysis method include:

- Assuming random distribution
- Limited data sets for water, gas, electrical, resulting in incomplete numbers for these features
- Relied on state-wide data not intended for manipulation at the scale it was used
- Data was not field checked, resulting in an analysis wholly dependent on accuracy of data

- Metadata was lacking on some of the used data sets

In this document, maps were created to provide a graphical illustration of location. These maps are done at a scale, which allows them to fit on a standard letter sized page. Data manipulation and maps were created as a planning tool, to be used by interested persons within Carbon County. This information should not take the place of accurate field verified mapping from which ordinances need to be based.

Effort to analyze hazards related to potential future development areas was also addressed where applicable. This proved to be a very difficult exercise and at best can only identify areas which need additional research before development should be allowed. No viable source of data exists for this study area to facilitate analysis of future development. Limited zoning data was available, but this data does not necessarily indicate which areas will be developed and which will not.

G.2 Vulnerable Populations Methodology

Per the 2020 United States Census, there were 20,571 people, 9,651 households, and 7,762 families in the county. The racial makeup of the county was 94.3%% White, 0.7% Black or African American, 1.7% Native American, 0.8% Asian, 0.3% Native Hawaiian or Pacific Islander, and 2.2% from two or more races. 13.8% of the population were Hispanic or Latino of any race. 6.0% of households indicated that they primarily used a language other than English at home.

There were 9,651 households, and people under the age of 18 made up 25.4% of the population. Meanwhile, 18.6% of people living in Carbon County were 65 years old or older. 25.50% of all households were made up of individuals (one person), and 11.07% had someone living alone who was 65 years of age or older. The average household size was 2.55, and the average family size was 3.14.

Traditionally underserved populations are more likely to face hardships and difficulties when faced with the impacts of a disaster. In order to identify the different vulnerable populations in Carbon County, a number of data points were gathered from the most recent Census. These include:

1. Median Age
2. Median Household Income
3. Population by Poverty Status
4. Population by Educational Attainment
5. Population by Marital Status
6. Disabled Persons
7. Home Ownership Rate
8. Housing Units

Combining these data points and comparing them against the area's hazard profile provides a picture of the area's vulnerable populations. Populations at risk are more likely to experience adverse social, health, and economic outcomes due to their race, age, gender, poverty status, and other socioeconomic measures. Headwaters Economics (headwaters.org) used US Census data (ACS 2021) and found that within Carbon County's five municipalities the highest percentage of vulnerable populations are typically:

- Populations over 65
- Population that 'Did Not Work'
- Rentals where Gros Rent Exceeds 30% of Household Income
- Populations with Disabilities

G.3 HAZUS Data Points Needed for Plan Maintenance

- Debris Generated / Number of Loads
- Potential Casualties
- Number of Structures in Floodplains
- Agricultural Losses, June 15 Scenario
- Vehicle Losses
- Debris Generation and Removal
- County Infrastructure Vulnerable to Dam Failure

H.0 Appendix (H) - GIS Data Sources

Carbon County PDM (2009-052) GIS Data Source Citation

Exhibit 1 – Location Overview and all other exhibits:

All reference layers (municipalities, roads, hydrology, and boundaries) were sourced from Utah Geospatial Resource Center (UGRC) – Utah SGID:

https://gis.utah.gov/data/sgid-index/

Exhibit 2 – Dam Failure:

Dams (points): UGRC – Utah SGID – Utah Dam Inventory - https://opendata.gis.utah.gov/datasets/utahDNR::utah-dam-inventory/explore?location=39.742084%2C-110.585755%2C-1.00

Inundation Areas (polygon): UGRC – Utah SGID – Utah Dam Inundation - https://opendata.gis.utah.gov/datasets/utahDNR::utah-dam-inundation-/explore?location=39.726053%2C-110.583446%2C-1.00

Exhibit 3 – Drainage Basins:

Drainage Basin Boundaries (polygon): UGRC – Utah SGID – Utah Watersheds Area - https://opendata.gis.utah.gov/datasets/utah-watersheds-area/explore?location=39.396451%2C-110.804390%2C-1.00

Exhibit 4 – Floodplains:

500-Year Flood Extents (polygon): Federal Emergency Management Agency (FEMA), National Flood Hazard Layer (NFHL), Product ID: NFHL_49007C, effective date: 20190815 - FEMA Flood Map Service Center | Search All Products

100-Year Flood Extents (polygon): Federal Emergency Management Agency (FEMA), National Flood Hazard Layer (NFHL), Product ID: NFHL_49007C, effective date: 20190815 - FEMA Flood Map Service Center | Search All Products

Exhibit 5 – Fire Risk:

Past Fire Perimeters and Distance from Past Fire Perimeter (polygons): National Interagency Fire Center (NIFC) – Wildland Fire Open Data – Interagency Fire Perimeter History All Years - https://data-nifc.opendata.arcgis.com/datasets/e02b85c0ea784ce7bd8add7ae3d293d0_0/explore?location=39.645456%2C-110.788466%2C10.88

Existing Structure Density (heatmap constructed from building footprint polygons): UGRC – Utah SGID – Utah Buildings - https://opendata.gis.utah.gov/datasets/utah-buildings/explore?location=39.518391%2C-110.808622%2C-1.00

Land Ownership: UGRC – Utah SGID – Land Ownership - State of Utah Trust Lands Administration: https://opendata.gis.utah.gov/datasets/SITLA::land-ownership/explore?location=39.568972%2C-110.757864%2C-1.00

Exhibit 6 – Earthquake Epicenter:

Magnitude of Earthquake and Year of Earthquake: UGRC – Utah SGID - Utah Earthquake Epicenters 1850 to 2016: https://opendata.gis.utah.gov/datasets/utah-earthquake-epicenters-1850-to-2016/explore?location=39.517311%2C-111.500000%2C-1.00

Quaternary Fault Types: UGRC – Utah SGID – Utah Quaternary Faults: https://opendata.gis.utah.gov/datasets/utahDNR::utah-quaternary-faults/explore?location=39.531402%2C-111.568529%2C-1.00

Existing Structure Density (heatmap constructed from building footprint polygons):

UGRC – Utah SGID – Utah Buildings - https://opendata.gis.utah.gov/datasets/utah-buildings/explore?location=39.518391%2C-110.808622%2C-1.00

Exhibit 7 – Landslide Susceptibility:

Landslide Depositions: UGRC – Utah SGID – Utah Landslide Compilation Polygons: https://opendata.gis.utah.gov/datasets/utah-landslide-compilation-polygons/explore?location=39.710550%2C-110.531672%2C-1.00

NFIP Coverage

"NFIP Multiple Loss Properties - V1." *FEMA.gov*, 29 Feb. 2024, www.fema.gov/openfema-data-page/nfip-multiple-loss-properties-v1

I.0 APPENDIX (I) - Community Technical Capabilities

Jurisdiction	Current Capability Gaps	Planned Improvements	Resources Needed + Timeline
Carbon County	• Limited GIS capacity for hazard analysis	• Staff training, software upgrades	• Training budget, software licenses • Timeline: 2025-2026
East Carbon / Sunnyside	• Limited planning staff	• Contract planning services	• Operating budget increase • Timeline: 2026-2027
Helper	• Limited floodplain management capacity	• Staff certification, updated procedures	• Training funds, technical assistance • Timeline: 2025-2026
Price City	• Outdated emergency response protocols	• Update EOP, enhance staff training	• Staff time, consultant support • Timeline: 2026
Scofield	• Limited staffing and technical capacity	• Share services with County	• Interlocal agreement • Timeline: 2025-2026
Wellington	• No dedicated emergency manager	• Share services with County	• Interlocal agreement • Timeline: 2025-2026
Carbon School Dist	• Facility assessment tools	• New facility management system	• Software, training • Timeline: 2025-2026
Price River Water	• Emergency response protocols (updated)	• Update emergency procedures	• Staff time, technical assistance • Timeline: 2025-2026.

J.0 APPENDIX (J) - Historical Hazard Events Database

Due to size constraints, please view the Historical Hazard Events at: https://hazards.geology.utah.gov/

For more information, or for a copy of the original spreadsheet, contact Michael Hansen at (801-550-5075), or (mhansen@rural-community.com).

K.0 APPENDIX (K) - Utah Repetitive Loss Properties

Carbon County, Helper City, Price City, Wellington City, East Carbon/Sunnyside City, and Scofield Town have no repetitive loss properties and no severe repetitive loss properties. This information was confirmed by the Utah State Floodplain Program Manager in December 2025.

See Section 6.7.3 for further discussion of NFIP participation.

https://www.fema.gov/openfema-data-page/nfip-multiple-loss-properties-v1

The Carbon County Zoning Administrator is the FloodPlain Administrator established by Carbon County Ordinance 10.1.1. The Carbon County Floodplain Administrator enforces the Carbon County Flood Plain Overlay Zone Ordinance 4.2.22.

The City of Helper FloodPlain Administrator is a City Council Member and enforces the City of Helper Flood Plain Overlay Ordinance 11.5.10.

The City of Price FloodPlain Administrator is the City Engineer and enforces the FloodPlain Ordinance 12.21.11 revised and adopted 1/25/2012.

The City of Wellington Flood Plain Administrator is the City Recorder and enforces the Land Use Codes

The City of East Carbon/ Sunnyside FloodPlain Administrator is the Mayor.

The Town of Scofield Floodplain Administrator is the Mayor.

L.0 APPENDIX (L) - HAZUS Model Findings

This plan attempted to utilize the HAZUS 5.1 model to get a better understanding of Carbon County's risk for earthquake and flooding. These findings were incorporated into the draft plan, but were not relied upon as the only source of information because of difficulties in some of the data sources.

The County is anticipating that the Utah Division of Emergency Management will be able to help refine these findings, and will update this plan when they are available.

The reports referenced in this plan are available at the following link:

https://drive.google.com/drive/folders/1K0jm0WAIHvFucmiObjGV0C0oQxxjUk1q?usp=sharing

M.0 APPENDIX (M) - Comprehensive Range of Mitigation Actions

This appendix presents a comprehensive range of potential mitigation actions that were considered by participating jurisdictions during the planning process. These actions represent different mitigation approaches spanning four categories as defined by FEMA:

1. **Local Plans and Regulations**: Government authorities, policies, or codes that influence the way land and buildings are developed and built.
    - Comprehensive plans
    - Land use ordinances
    - Subdivision regulations
    - Building codes and enforcement
    - NFIP Community Rating System
    - Capital improvement programs
    - Open space preservation
2. **Structure and Infrastructure Projects**: Modifying existing structures and infrastructure to protect them from a hazard or remove them from a hazard area.
    - Acquisitions and elevations of structures in flood prone areas
    - Utility undergrounding
    - Structural retrofits
    - Floodwalls and retaining walls
    - Detention and retention structures
    - Culverts
    - Safe rooms
3. **Natural Systems Protection**: Actions that minimize damage and losses and preserve or restore the functions of natural systems.
    - Sediment and erosion control
    - Stream corridor restoration
    - Forest management
    - Conservation easements
    - Wetland restoration and preservation
    - Green infrastructure
4. **Education and Awareness Programs**: Actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them.
    - Radio or television spots

- Websites with maps and information
- Real estate disclosure
- Presentations to schools or neighborhood organizations
- Mailings to residents in hazard-prone areas
- StormReady program
- Firewise Communities

The table below provides specific examples of mitigation actions that were considered for each identified hazard:

Hazard	Local Plans and Regulations	Structure and Infrastructure Projects	Natural Systems Protection	Education and Awareness Programs
Drought	• Develop drought contingency plans • Update water conservation ordinances • Implement water use restrictions • Create water recycling programs • Develop groundwater management plans	• Modify plumbing systems for water efficiency • Develop new water supply sources • Install rainwater collection systems • Create water storage facilities • Improve irrigation efficiency	• Protect and restore water-retaining ecosystems • Implement xeriscaping • Develop aquifer storage and recovery systems • Protect and restore riparian areas • Support agricultural soil moisture management	• Promote water conservation practices • Educate farmers on drought-resistant crops • Create drought awareness campaigns • Teach rainwater harvesting techniques • Provide information on low-water landscaping
Dam Failure	• Develop dam safety regulations • Update emergency action plans • Map inundation areas • Incorporate dam failure into evacuation plans • Restrict development in dam inundation zones	• Strengthen and retrofit dams • Install early warning systems • Improve dam monitoring equipment • Enhance spillway capacity • Develop redundant flood protection systems	• Create and maintain natural buffers in inundation zones • Preserve open space downstream of dams • Restore wetlands that provide flood storage • Implement flood attenuation measures downstream	• Educate residents in inundation zones • Develop notification systems • Conduct evacuation drills • Create hazard awareness materials • Train emergency responders
Earthquake	• Adopt and enforce building codes	• Retrofit or replace unreinforced	• Land use planning to reduce development in	• Educate homeowners on securing items

	• Incorporate seismic risk into land use planning • Require seismic retrofitting for public buildings • Develop inventories of at-risk structures • Review infrastructure utility resilience	masonry buildings • Secure utility infrastructure • Install flexible pipe fittings • Brace generators and HVAC in critical facilities • Reinforce bridges and overpasses	high-risk areas • Slope stabilization projects in landslide-prone areas • Soil stabilization techniques	within structures • Promote earthquake insurance • Develop family and business emergency plans • Create "Drop, Cover, and Hold" drills • Train contractors on seismic retrofitting
Flooding	• Adopt stricter floodplain regulations • Incorporate flood mitigation into local planning • Improve stormwater management regulations • Adopt freeboard requirements • Create stream buffer ordinances	• Install/maintain stormwater systems • Elevate or relocate critical facilities • Construct flood control structures • Install backup generators at critical facilities • Retrofit public buildings to withstand flooding	• Preserve floodplains as open space • Restore/maintain wetlands • Use green infrastructure techniques • Improve river channel maintenance • Stabilize stream banks	• Educate property owners about flood mitigation techniques • Develop warning systems • Provide NFIP information • Install high-water mark signage • Develop evacuation plans
Infestation	• Develop invasive species management plans • Create rapid response protocols • Implement monitoring programs • Establish quarantine regulations • Develop collaboration with state and federal agencies	• Install physical barriers against pests • Create monitoring and detection systems • Construct washing stations at entry points • Develop treatment facilities • Install screening system	• Implement biological control methods • Conduct regular monitoring and early detection • Preserve natural predators • Maintain healthy ecosystems • Restore native vegetation	• Educate the public about invasive species • Develop reporting systems • Create identification guides • Promote prevention practices • Educate tourists and visitors
Landslide	• Adopt steep slope ordinances • Implement slide-	• Construct retaining walls and soil	• Maintain and restore vegetative cover	• Educate residents about landslide warning signs

	prone area development restrictions • Require geotechnical review for construction in high-risk areas • Map and assess vulnerability to landslides • Develop hillside development regulations	stabilization infrastructure • Relocate critical facilities from slide-prone areas • Reinforce roads and bridges in slide-prone areas • Install warning systems; Improve drainage systems	in slide-prone areas • Install erosion control measures • Use properly engineered containment basins • Manage surface drainage • Practice revegetation of disturbed slopes	• Create real-time monitoring websites • Develop emergency evacuation plans • Educate developers about best practices • Provide information on insurance options
Problem Soils	• Require soil studies before development • Adopt building codes specific to soil hazards • Develop special foundation requirements • Create setbacks from problem soil areas • Require geological assessments	• Implement specialized foundations in problem soil areas • Reinforce existing structures • Install drainage systems • Stabilize collapsible soils • Use engineered fills	• Maintain vegetation cover on sensitive soils • Implement erosion control measures • Manage surface water drainage • Create buffer zones • Restore native vegetation in disturbed areas	• Educate property owners about risk signs • Inform developers about construction techniques • Create homeowner maintenance guidance • Develop real estate disclosure requirements • Provide information to contractors
Severe Weather (including Lightning, Heat Wave, Cold Wave, Avalanche, Ice Storm, Tornado, Hail, and Strong Wind)	• Adopt and enforce building codes for wind, snow load, and ice • Update emergency response plans • Develop extreme temperature plans • Implement snow and ice removal strategies • Develop community sheltering plans	• Install lightning protection systems • Reinforce/retrofit buildings for wind resistance • Bury power lines • Install backup power for critical facilities • Develop cooling centers and warming shelters	• Maintain urban tree canopy for heat reduction • Create wind breaks • Implement snow catchment strategies • Manage snow-shedding areas • Develop avalanche control measures	• Create severe weather alert systems • Educate about lightning safety • Develop check-in systems for vulnerable populations • Provide safety information for recreational areas • Create emergency preparedness campaigns
Wildfire	• Adopt wildland-	• Create defensible	• Implement forest	• Educate property

	urban interface codes • Establish defensible space requirements • Update building codes for fire-resistant materials • Develop community wildfire protection plans • Incorporate wildfire mitigation into comprehensive plans	space around structures • Install fire-resistant roofing and building materials • Develop secondary water sources • Create fire breaks • Implement ignition-resistant retrofitting	management techniques (thinning, prescribed burns) • Create fuel breaks • Implement grazing practices to reduce fuel • Conduct regular fuel reduction maintenance • Restore fire-adapted ecosystems	owners about Firewise techniques • Conduct hazardous fuel reduction awareness campaigns • Develop emergency communication systems • Provide evacuation route information • Promote fire safety education

Based on this comprehensive range of potential actions, each jurisdiction selected actions that were most appropriate based on their specific vulnerabilities, capabilities, and priorities. The selected actions appear in the "Present & Future Mitigation Strategies" sections of each jurisdiction's profile in Part 7 of this plan.

CARBON COUNTY, UTAH

THE CARBON COUNTY PRE-DISASTER MITIGATION PLAN 12/17/2025

WHEREAS the Carbon County Commission recognizes the threat that natural hazards pose to people and property within Carbon County; and

WHEREAS Carbon County has prepared a multi-hazard mitigation plan, hereby known as Carbon County Pre-Disaster Mitigation Plan in accordance with federal laws, including the Robert T. Stafford Disaster Relief and Emergency Assistance Act, as amended; the National Flood Insurance Act of 1968, as amended; and the National Dam Safety Program Act, as amended; and

WHEREAS Carbon County Pre-Disaster Mitigation Plan identifies mitigation goals and actions to reduce or eliminate long-term risk to people and property in Carbon County from the impacts of future hazards and disasters; and

WHEREAS adoption by the Carbon County Commission demonstrates its commitment to hazard mitigation and achieving the goals outlined in the Carbon County Pre-Disaster Mitigation Plan (Date).

NOW THEREFORE, BE IT RESOLVED BY CARBON COUNTY, UTAH, THAT:

Section 1. In accordance with (local rule for adopting resolutions, e.g., Utah Code § 17-53-208), the Carbon County Commission adopts the Carbon County Pre-Disaster Mitigation Plan (Date). While content related to Carbon County may require revisions to meet the plan approval requirements, changes occurring after adoption will not require Carbon County to re-adopt any further iterations of the plan. Subsequent plan updates following the approval period for this plan will require separate adoption resolutions.

ADOPTED by a vote of

_3___ in favor and
_0___ against and
_0___ abstaining, this 17 day of December 2025.

Carbon County Commission Chair, Larry Jensen

ATTEST:

Carbon County Clerk; Seth Marsing

APPROVED AS TO FORM

Carbon County Attorney, Christian Bryner

RESOLUTION 2026-18

A RESOLUTION OF THE PRICE MUNICIPAL CORPORATION (PRICE CITY) ADOPTING THE CARBON COUNTY PRE-DISASTER MITIGATION PLAN 12/10/25.

Whereas Carbon County has prepared the Carbon County Pre-Disaster Mitigation Plan 12/10/25 in accordance with federal laws, including the Federal Disaster Mitigation and Cost Reduction Act, the Robert T. Stafford Disaster Relief and Emergency Assistance Act, as amended, the National Flood Insurance Act as amended, and the National Dam Safety Act, as amended; and

WHEREAS, to be eligible to receive Federal Emergency Management Agency (FEMA) post-disaster funds, Price City (City) must adopt a Pre-Disaster Hazard Mitigation Plan; and

WHEREAS, the Carbon County Pre-Disaster Mitigation Plan 12/10/25, attached hereto as "Exhibit A" and incorporated by reference, identifies mitigation goals and actions to reduce or eliminate long-term risk to people and property within the City from the impacts of future hazards and disasters; and

WHEREAS, adoption by the Price City Council demonstrates the City's commitment to hazard mitigation and achieving the goals outlined in the Carbon County Pre-Disaster Mitigation Plan 12/10/25; and

WHEREAS, the Price City Council has reviewed and finds that it is in the best interest of the City and the community to adopt the Carbon County Pre-Disaster Mitigation Plan 12/10/25.

NOW, THEREFORE, be it resolved by the Price City Council that Price City adopts the Carbon County Pre-Disaster Mitigation Plan 12/10/25 as the City's Pre-Disaster Mitigation Plan, as attached hereto as Exhibit A.

While content related to Price City may require revisions to meet the plan approval requirements, changes occurring after adoption will not require Price City to re-adopt any further iterations of the plan. Subsequent plan updates following the approval period for this plan will require separate adoption resolutions.

PASSED AND ADOPTED by the City Council of Price City, State of Utah, this _____ day of _____ 2026.

PRICE MUNICIPAL CORPORATION

By_____
Terry Willis, Mayor

ATTEST:

_____
Jaci Adams, City Recorder

RESOLUTION NO. _____

A RESOLUTION ADOPTING A PRICE CITY OWNED SPACE RENTAL FEE SCHEDULE AND POLICY

WHEREAS, Price City (hereinafter referred to as "City") owns and operates meeting and event venue space (hereinafter referred to as "Spaces") in certain of its owned buildings/facilities; and,

WHEREAS, from time-to-time City authorized use of Spaces by the general public, including non-profit and community-based organizations, via rental and usage agreement; and,

WHEREAS, City authorized use of Spaces includes fees, such as business hours facility rental, after-hours facility rental, business hours staffing costs, after-hours staffing costs, cleaning and security deposits to be paid to City by user(s); and,

WHEREAS, City desires to remain consistent in its imposition of fees and policy with all individuals and users of Spaces; and,

WHEREAS, from time-to-time City reviews and evaluates its fee schedule and policy requirements (hereinafter referred to as "Schedule") regarding general public use of Spaces; and,

WHEREAS, a committee of City staff, elected officials and Space user interests has evaluated and recommended an update of the Schedule; and,

WHEREAS, the Price City Council finds that it is in the best interest of the health, safety and welfare of the community to adopt an updated Schedule;

NOW, THEREFORE BE IT HEREBY RESOLVED BY THE PRICE CITY COUCIL AS FOLLOWS:

Section 1. Adoption. That the Schedule attached herewith in **Exhibit 1** and by this reference made a part hereof is herby adopted.

Section 2. Severable. That any part of this resolution or the Schedule that is found to be invalid may be severed from the remaining portions and those portions shall remain in full force and effect.

Section 3. Repealer. That any prior actions in conflict with this resolution and action are hereby repealed.

Section 4. Effective Date. This resolution and the attached Schedule shall become effective on the date approved and entered below.

PASSED AND ADOPTED BY THE PRICE CITY COUNCIL THIS _____ DAY OF _____, 2026.

_____
Terry Willis, Mayor

ATTEST:

_____
Jaci Adams, City Recorder

EXHIBIT 1
PRICE CITY SPACE USAGE FEE SCHEDULE AND POLICY

Price Municipal Corporation

Facility Rental Agreement

P.O. Box 893~~~185 East Main Street, Price, UT 84501 Phone: 435-636-3193 Fax: 435-637-2905 Email: utilities@priceutah.gov

Organization Name: _____

Person Responsible for Event: _____

Phone: _____ Cell: _____

Address: _____ City, State ZIP _____

Reservation Start Date(s) _____ Start Time(s) _____ End Time(s) _____

Reservation End Date(s) _____ Start Time(s) _____ End Time(s) _____

RENTAL FEES CANNOT BE REFUNDED

Rental Fees

(Monday-Thursday 8:00 AM - 5:00 PM. After 5:00 PM, weekend rates apply)

	Fees		Total
	Per Hour	Per Day	
Meeting Room #106	$15.00	$50.00	
Meeting Room #207	$15.00	$50.00	
Peace Garden	$15.00	$50.00	
Civic Auditorium	$40.00	$240.00	

Total $ _____

Rental Fees (Monday-Thursday after 5:00 PM and Friday-Sunday)

	Fees		Total
	Per Hour	Per Day	
Meeting Room #106	$30.00	$100.00	
Meeting Room #207	$30.00	$100.00	
Peace Garden	$30.00	$100.00	
Civic Auditorium	$100.00	$325.00	

Total $ _____

Equipment Rental	Cost
Package #1	
Staff/Operators	$450.00
Large Projector	
Front Projection Hard Screen	
Package #2	
Staff/Operators	$650.00
25' Inflatable Screen	
Speaker/Projector Pkg	
Individual Equipment Rental	
Hard Projection Hard Screen	$300.00
25' Inflatable Screen	$500.00
Microphone(s)	$10.00
Class Room Projector	$25.00

Total Equipment Rental Fees: $ _____

DEPOSITS (REFUNDABLE)

Deposit applies regardless if rental fee is charged.

Cleaning Deposits	Cost
1- 50 People	$200.00
51+ People	$400.00

Cleaning Deposit $ _____

Other Items Needed	QTY		QTY
Seminar Table(s)		Dry Erase Board	
Work Table(s)		Electronic Board	
Chairs		TV/DVD/VCR	
Network		Extension Cords	

Sub-Total: $ _____

Reduction: $ _____

Total Rental Fee: $ _____

Please read and sign the Terms and Conditions on the Back of this Page

TERMS AND CONDITIONS FOR AUDITORIUM, PEACE GARDEN AND MEETING ROOM RENTAL

1) No alcoholic beverages are permitted on the premises unless otherwise expressly provided herein.
2) No food or beverages allowed in the Auditorium.
3) Any broken glass, food or beverage spills (in conference rooms, meeting rooms or dressing rooms) that may result in personal injury or damage to the facility or furnishings shall be addressed immediately.
4) All washrooms utilized shall be left in clean condition.
5) All items brought in for the event shall be removed from the facility by the end of the event, unless otherwise expressly provided herein.
6) Price City staff will clean and clear the rental space in its entirety, in accordance with its standard practices prior to the event set up.
7) All children must be under the supervision of an adult.
8) Do not stach anything on the sound booth.
9) No glitter or confetti may be used. If used, the deposit will not be refunded.
10) Keys to Price City Hall will not be provided to non-employees.
11) All fee waiver requests must go before Price City Council for review/approval 30 days prior to the reservation date. To be placed on the agenda, please call the City Recorder at 435-636-3183.
12) Fee waivers will not be accepted for reservation times after 5:00 PM. Rates will be assessed for all reservations after 5:00 PM at the weekend rental rate.
13) Security deposits will **NOT** be waived even if a fee waiver has been issued.

By signing this application and agreement, the Applicant agrees to be responsible for any and all damage, repair or replacement of said facility used and rented; to hold harmless Price City and its officers, employees and agents (Indemnities) from and against all claims, suits and costs, including attorneys' fees for injury or damage of any kind arising out of the Applicant's or its negligent acts, errors or omissions in the performance of this use and rental. **The Applicant agrees that a "preliminary walk through" of the facility was conducted and observed that said facility and equipment was clean and functioning properly.**

Signature **Date**

OFFICE USE ONLY

Total $$	**Refund Purchase Order Number #**

Event Being Held in the Auditorium:_____

Dates of the Event:_____

AUDITORIUM WALK THROUGH BEFORE EVENT

Date: _____

- ☐ Floors and aisles are clean and free of garbage.
- ☐ Stage is clean and free of garbage and tape.
- ☐ Stage lights are to their original positions.
- ☐ Stage equipment is in its original location.
- ☐ All sound equipment and settings are to their original positions.
- ☐ All rooms in the dressing area below are clean and free of garbage including the bathroom.
- ☐ Reviewed and signed the "Auditorium Rules and Regulations" Form.

Signature of Price City Representative: _____.

Name of Price City Representative: _____.

Signature of Reservation Representative:_____.

Name of Reservation Representative: _____.

AUDITORIUM WALK THROUGH AFTER EVENT

Date: _____

- ☐ Floors and aisles are clean and free of garbage.
- ☐ Stage is clean and free of garbage and tape.
- ☐ Stage lights are to their original positions.
- ☐ Stage equipment is in its original location.
- ☐ All sound equipment and settings are to their original positions.
- ☐ All rooms in the dressing area below are clean and free of garbage including the bathroom.

Signature of Price City Representative: _____.

Name of Price City Representative: _____.

Signature of Reservation Representative:_____.

Name of Reservation Representative: _____.

Minutes of the Price City Council Workshop
Conference Room 106
July 08, 2026 – 4:30 p.m.

Present:
Mayor Willis

Councilmembers:
Councilmember Richardson
Councilmember Root
Councilmember Seeley
Councilmember Urbanik

Excused: Councilmember Miller

Present: See Public Meeting Sign-In Sheet

Safety Seconds/Councilmember Root/proper kitchen knife skills, make sure knives are not dull.

Director's Reports:
Items discussed:

Mayor Willis: Discussion about extra half hour added to workshop meeting, beginning August 12, 2026, City Council Workshop will begin at 4:00 p.m., Jaci Adams, City Recorder will publish amended time change of meeting in ETV news/minimize volume of printing.

Nick Tatton:

International Days Golf Tournament – full
Real Property Manual update, Price City received grant – RFP
Price City owns billboard near hospital, USUE advertises on it, declare as surplus and give to USUE, they will also advertise "Welcome to Price".
Purchase power adjustment – software problem
Anticipated new dorms near college, had open house twice to answer questions from neighboring residents, possibly will be attending Planning & Zoning in September.
Planning & Commission Retreat scheduled for November 23, 2026, RSVP with Jaci.
Sidewalk inspection on app.

Kelly Maynes:

Stats for June – 925 dispatched incidents, numbers are starting to equal out – system tracks dispatch incidents, each crew is consistent and busy with calls/incidents, fully staffed one attending academy/QR code will be set up for "Shop with a Cop".

DRAFT

Lisa Richens:

All budget notices have been posted, new payroll next week for beginning of fiscal year, finalizing grants, etc.

Tina Urbanik:

Inquired when Master Plan was last updated, (3-4 years ago)

Richard Root:

Inquired who was on Transportation Committee and the process of when new police vehicles can be purchased, committee reviews mileage, year of vehicle, repair totals, etc., actively seeking grants and looking for solutions.

Adjourned: 5:29 p.m.

APPROVED:

Terry Willis, Mayor

ATTEST:

Jaci Adams, City Recorder

DRAFT

Minutes of the City Council Meeting
City Hall
Price, Utah

July 8, 2026

Present:

Mayor Willis	Jaci Adams, City Recorder
Councilmembers:	Nick Tatton, Administrative Director
Tanner Richardson	Kelly Maynes, Sergeant Price City Police Department
Richard Root	David Johnson, Fire Chief
Russell Seeley	
Tina Urbanik	

Excused: Councilmember Miller, Miles Nelson, Public Works Director, Lisa Richens, Finance Director

Staff/Others: See Public Meeting Sign-In Sheet

1. PLEDGE OF ALLEGIANCE
Mayor Willis called the regular meeting to order at 5:32 p.m. Mayor Willis led the Pledge of Allegiance.

2. ROLL CALL
Roll was called with the above Councilmembers and staff in attendance.

3. SAFETY SECONDS
Councilmember Root reminded everyone the proper use of kitchen knives, make sure they are sharp and not dull when using.

4. GENERAL BUSINESS/DISCUSSION

a. QUARTERLY SAFETY PRIZE DRAWING. Drawing for the quarterly safety prize for qualifying employees.

The winner of the quarterly safety prize was Jaci Adams.

b. ARCHERY TEAM RECOGNITION. Recognition and certificates for the winning archery team members.

Mayor Willis and City Council recognized the Mont Harmon Middle School Archery team which won first place in both Bullseye and 3D Target categories at the World Championship in Daytona Beach, Florida. Each team member was presented with a certificate and a Price City pin.

DRAFT

c. RESOLUTION NO. 2026-16. Consideration and possible approval of A Resolution of the Price City Council Adopting a Price City Sidewalk Management, Maintenance and Inspection Program and Related Matters.

Nick Tatton, Administrative Director explained the resolution and noted the Community Progress Committee will be involved with the program.

MOTION.
Councilmember Seeley moved to approve Resolution No. 2026-16 adopting a Price City sidewalk management, maintenance and inspection program and related matters. Councilmember Urbanik seconded and motion carried.

d. COOPERATIVE AGREEMENT AND 2026 PARTICIPATION COMMITMENT STANDARD. Consideration and possible approval of a Cooperative Agreement between Price City and the Utah Division of Forestry, Fire and State Lands, including the 2026 Participation Commitment Statement, David Johnson, Price City Fire Chief.

David Johnson, Fire Chief, explained that years ago, Price City used to be part of the cooperative agreement and would like to be part of it again.

MOTION.
Councilmember Root moved to approve a cooperative agreement between Price City and the Utah Division of Forestry, Fire and State Lands, including the 2026 Participation Commitment Statement. Councilmember Richardson seconded and motion carried.

e. MEMORANDUM OF UNDERSTANDING. Consideration and possible approval of the Utah Wildlife Resource Memorandum of Understanding Between Utah Division of Forestry, Fire and State Lands and Price City, David Johnson, Price City Fire Chief.

David Johnson, Fire Chief explained the MOU meaning that Price City is in agreement to keep city vehicles and equipment maintained with permission to go on state land to fight fires when needed.

MOTION.
Councilmember Urbanik moved to approve the Utah Wildlife Resource Memorandum of Understanding between Utah Division of Forestry, Fire and State Lands and Price City. Councilmember Root seconded and motion carried.

5. CONSENT AGENDA

Mayor Willis explained the Union Pacific Pipeline Crossing agreement on behalf of Miles Nelson, Public Works Director. David Johnson, Fire Chief explained the cooperative wildfire system that Price City contracts with Carbon County.

MOTION.
Councilmember Seeley moved to approve consent agenda items a. through d. Councilmember Ricardson seconded and motion carried.

a. MINUTES for 06-24-2026 City Council and CDURA.

DRAFT

b. UNION PACIFIC 24" PIPELINE CROSSING LICENSE AGREEMENT. Consideration and possible approval of an agreement to construct a 24" water transmission line under Union Pacific's rail line near Colton Springs, including a permit fee of $10,000.00.

c. COOPERATIVE WILDFIRE SYSTEM CONFIRMATION. Confirmation that Price City contracts with the Carbon County Building Department for Building Permit and Building Inspection services and that Price City adopt the current WUI building standards per Utah Code 65A-8-203 (4)(f). Effective date retroactive to January 1, 2026.

d. BUSINESS LICENSES. Advantage Transport, LLC at 621 E 100 S for Travis Donathan. Rivian Adventure Network at 120 North Carbonville Rd. Rebel Oil Company at 352 W Main. Randall Aquatics at 315 N 100 W for Waco Brandon Randall.

6. PUBLIC COMMENTS (LIMITED TO TWO MINUTES PER PERSON/NO ACTION TAKEN ON DISCUSSED ITEMS)
No public comment was discussed or reported.

7. UNFINISHED BUSINESS
No unfinished business was discussed or reported.

Mayor Willis asked for a motion to close the regular City Council meeting.

Councilmember Richardson moved to close the regular City Council meeting. Councilmember Urbanik seconded and motion carried.

The regular City Council meeting was adjourned at 5:49 p.m.

APPROVED: ATTEST:

Terry Willis, Mayor Jaci Adams, City Recorder

DRAFT

PRICE CITY DECLARATION OF SURPLUS PROPERTY

DATE: July 8th, 2026

SUBJECT: Billboard along Highway 6 Currently Owned by Price City.

COMMENTS: The identified billboard has been owned by Price City for many years (longer than anyone can recall). Price City has allowed Utah State University-Eastern (USU-E) to place messaging on the billboard for approximately the prior 12-15 years. The billboard is licensed via UDOT as it is situated along a UDOT right-of-way, identified as sign number 4-1499. The UDOT license will be transferred to USU-E upon Price City approval of the declaration of surplus. The billboard is situated on private property owned by Mr. Dennis Ardohain. Mr. Ardohain has agreed to allow USU-E to access the billboard via his property for maintenance and messaging updates. The former access point, across an adjoining property has been rescinded by that property owner. USU-E will be improving the access corridor to accommodate large trucks/equipment necessary for maintenance and signage changes. USU-E has agreed to accept ownership of the billboard upon Price City's declaration of surplus. USU-E will be contacting Mr. Ardohain to confirm the access and improvements independently from Price City.

It is recommended that the following conditions of approval of the declaration of surplus and donation of the billboard to USU-E include:

(1) Only USU-E shall own the billboard;
(2) Only community messaging associated with USU-E shall be placed on the billboard;
(3) Any attempted change in ownership from USU-E or any commercial messaging shall constitute a breech of this approval and immediately revert ownership of the billboard back to Price City.

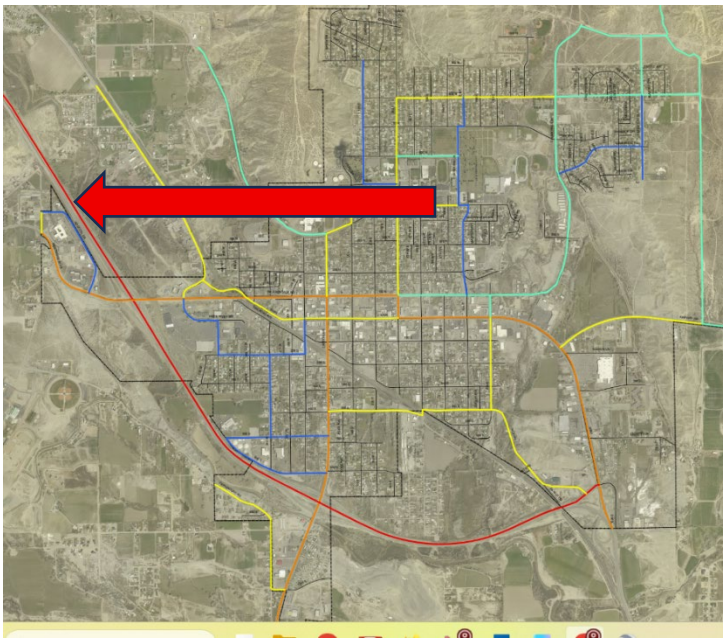
It is hereby declared by the Price City Council, During its' regular meeting held on Wednesday, July 22nd, 2026, that the subject billboard is surplus to the needs of Price City and is authorized for disposal by Price City as a gift to USU-E, including the donation restrictions identified.

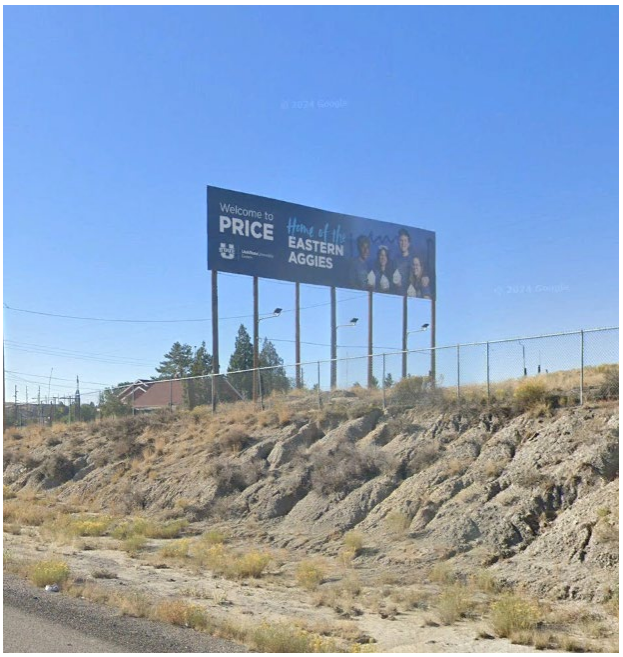
_____
TERRY WILLIS, MAYOR

ATTEST:

_____
JACI ADAMS, CITY RECORDER

BILLBOARD AND LOCATION





AGREEMENT TO PROVIDE MANAGING DEFENDER SERVICES

THIS AGREEMENT is made and entered into by and between PRICE CITY, a Municipal Corporation, hereinafter referred to as CITY, and ROBERT A OLIVER, hereinafter referred to as ATTORNEY.

WHEREAS, CITY has a statutory and constitutionally mandated responsibility to provide public defender services; and

WHEREAS, CITY desires to have legal services performed for eligible persons entitled to representation in the Carbon County Seventh District Court and Carbon County Justice Court; and

WHEREAS, CITY desires to share a Managing Defender with Carbon County to supervise and manage Indigent Defense Service Providers and meet the Indigent Defense Commission standards; and

WHEREAS, ATTORNEY agrees to provide managing defender services to CITY in conjunction with the Carbon County Managing Defender duties; and

WHEREAS, CITY finds that ATTORNEY has sufficient expertise to provide managing defender services; therefore;

IT IS HEREBY AGREED as follows:

1. Definitions.

a. Managing Defender. The term "Managing Defender" shall refer to ATTORNEY acting in the capacity set forth in paragraph 4.

2. Scope of Work as Managing Defender. ATTORNEY agrees to complete the duties of Managing Defender as required by the Indigent Defense Commission, in conjunction with ATTORNEY's Managing Defender Duties in Carbon County, and agrees to act in the capacity as set forth in paragraph 4.

3. Compensation. For the provision of the above-described services, CITY agrees to pay ATTORNEY the monthly sum of **$3,000.00**.

All parties acknowledge that this agreement is based on CITY receiving grant funding from the State of Utah's Indigent Defense Commission (IDC). The parties agree that the allocation of funding is inclusive of funds provided by IDC to reimburse CITY for this expense. Nothing in this agreement shall prevent ATTORNEY from seeking and receiving additional grant funding for compensation or other expenses from the IDC or

other sources. In the event, that compensation amounts change, ATTORNEY shall provide that information to CITY.

The parties agree that in the event grant funding is not secured, or is revoked or reduced prior to the expiration of this agreement, the parties will renegotiate the amount to be paid by CITY under this contract.

4. Designation of Managing Public Defender; Compliance with Requirements of Granting Entities. ATTORNEY shall act as the Managing Defender and fulfill all duties required by the IDC, in conjunction with Managing Defender Duties in Carbon County. As such, ATTORNEY shall be the point of contact with respect to all matters pertaining to the IDC, as well as all matters pertaining to grant funding, grant reporting, grant compliance, and indigent service provider oversight. ATTORNEY will provide general oversight with respect to grant requirements. ATTORNEY will prepare all necessary reports required for grant compliance. ATTORNEY will supervise indigent defense service providers as required by the IDC.

ATTORNEY agrees to account for their provision of services to the Indigent Defense Commission (IDC), or its functional equivalent, as specified by the IDC grant. ATTORNEY agrees to use DefenderData software, or other IDC sanctioned or required software, in tracking and reporting their compliance with the grant. ATTORNEY agrees to monitor compliance with IDC principles, and complete individual attorney performance evaluations as required by the IDC.

5. Term of Agreement. This agreement shall commence from July 1, 2025, and shall continue through June 30, 2026. This agreement will automatically renew for an additional one-year term at the same rate unless either party gives 60 days' written notice prior to the end of the term of the agreement of its intent to terminate or renegotiate the terms of the agreement.

ATTORNEY may terminate this agreement at any time for convenience by giving 90 days' notice.

CITY may terminate this Agreement for cause by giving 30 days' notice in the event that ATTTORNEY materially breaches any of the terms of this Agreement.

6. No assignment of contract. This Agreement shall not be assigned by ATTORNEY without the written approval of CITY.

7. Modification of contract. The terms of this Agreement may be modified by the parties at any time, provided such modifications are made in writing.

DATED this _____ day of _____, 2025.

PRICE CITY, A Municipal Corporation ATTORNEY

_____ _____

Terry Willis, Mayor Robert A. Oliver

INTERLOCAL AGREEMENT FOR THE PROVISION OF INDIGENT DEFENSE SERVICES

This agreement is entered into by and between Carbon County ("Carbon County"), a political subdivision of the State of Utah, and Price City ("City"), a Municipal Corporation in the State of Utah.

RECITALS

WHEREAS, Title 1, Chapter 13 of the Utah Code, commonly known as the Interlocal Cooperation Act, authorizes public agencies to enter joint agreements for their mutual benefit; and

WHEREAS, the parties hereto are public agencies as defined by the Interlocal Cooperation Act; and

WHEREAS, pursuant to the Indigent Defense Act, as set forth in Title 78B, Chapter 2 Utah Code Ann., the parties have the responsibility to provide legal counsel to every indigent person who faces the substantial probability of deprivation of his or her liberty; and

WHEREAS, Carbon County has experienced indigent defense attorneys and is willing to provide such services pursuant to the terms of this agreement; and

WHEREAS, City has determined that it is in its interest to contract with Carbon County for the provision of indigent defense services;

NOW THEREFORE, for the reasons and purposes recited above, and in consideration of the mutual covenants and agreements contained herein, the parties do mutually agree and undertake as follows:

SECTION ONE
EFFECTIVE DATE AND TERM

1. This Agreement shall take effect on July 1, 2026.
2. This Agreement shall remain in effect through June 30, 2027, unless otherwise terminated as provided in this Agreement. This contract shall automatically renew, unless modified or terminated by the parties.
3. Either party may terminate this Agreement at any time by giving 90 days written notice of its intent to withdraw from the Agreement.

SECTION TWO
SCOPE OF SERVICES

4. Carbon County shall provide the following services to City through Carbon County's Indigent Defense Contract System's Contracted Defense Counsel:
    a. **Defense Counsel for District Court Cases**. Defense counsel shall provide competent legal counsel to any person who is charged with a Class A misdemeanor, who is deemed by the court to be indigent, and to whom the court appoints defense counsel to represent. Defense counsel shall represent said individuals in all criminal matters before the court including scheduling conferences, hearings, trials, probation violation hearings, restitution hearings, and all other matters to ensure adequate representation.
    b. **Defense Counsel for Justice Court Cases.** Defense counsel shall provide competent legal counsel to any indigent person charged with a misdemeanor in the Carbon County Justice Court. Defense counsel shall represent indigent defendants in all matters before the justice court including all hearings, trials,

and de novo appeals to the District Court, and all other matters required to ensure adequate representation.

SECTION THREE
COMPENSATION

5. City shall pay Carbon County $8,300 per month for the services listed above in paragraphs 4(a) through 4(b) starting July 1, 2026, with payments made on a monthly basis.

SECTION FOUR
MISCELLANEOUS

6. Amendment. This Agreement may be amended by written agreement of the parties, upon adoption of a resolution by each of the parties and approval as to form by each party's respective attorney, and upon meeting any other applicable requirements of the Interlocal Cooperation Act.
7. Captions and Headings. The captions and headings herein are for convenience of reference only and in no way define or limit the scope or intent of any sections or provisions of this agreement.
8. Counterparts. This agreement may be executed in counterparts, each of which shall be an original and all of which together shall constitute the same instrument.
9. Documents on File. Executed copies of this Interlocal Agreement shall be placed on file in the office of the keeper of the records of each party and shall remain on file for public inspection during the term of the agreement.
10. Employee Status and Legal Responsibility. Unless otherwise provided by law:

a. All independent contractors or personnel employed by City are City's contractors or employees and not contractors or employees of Carbon County, and are obligated to abide by all of the rules and regulations of City.

b. All independent contractors and personnel employed by Carbon County are Carbon County contractors or employees and not contractors or employees of City, and are obligated to abide by all of the rules and regulations of Carbon County.

c. Each party retains full legal responsibility, in every way, for its contractors and employees, including employment claims by employees and all other claims related to its employees.

11. Entire Agreement. This agreement shall constitute the entire agreement between the parties. Any prior agreement or understanding regarding the subject matter of this agreement is made null and void by the execution of the agreement.

12. Indemnification. Each of the parties agrees to indemnify and hold harmless the other party against any and all liabilities, claims, costs, and liabilities arising out of or related to this agreement that result from the wrongful or negligent acts or omissions of the indemnifying party, or anyone for whose actions the indemnifying party is responsible. The Governmental Immunity Act of Utah shall apply fully to each party, and neither party waives any protections available to it under that Act.

13. Laws of Utah. It is understood and agreed by the parties hereto that this agreement shall be governed by the laws of the State of Utah both as to interpretation and performance.

14. Non-Assignability. Neither party shall transfer or delegate any of its rights, duties, powers, or obligations under this agreement without the consent of the other party.
15. Severability of Provisions. If any provision of this agreement is found to be invalid or unenforceable, the remainder of the agreement shall remain enforceable and in effect, unless the invalidation of the provision materially alters the agreement. If the invalidation of the provision materially alters the agreement, the parties shall negotiate in good faith to modify the agreement to match, as closely as possible, the original intent of the parties.
16. Additional Interlocal Cooperation Act Provisions. In satisfaction of the requirements of the Interlocal Cooperation Act ("Act"), the Parties agree as follows:
    a. This agreement shall be submitted to the attorney authorized to represent each party for review as to proper form and compliance with applicable law before the agreement may take effect.
    b. This agreement shall be authorized and adopted by resolution by the legislative body of each party pursuant to and in accordance with § 11-13-202.5 of the Act.
    c. Immediately upon execution of this agreement by the parties, either party may publish notice regarding this agreement pursuant to § 11-13-219 of the Act.
    d. The parties agree that they are not creating an interlocal or separate entity by virtue of this agreement.
    e. The parties agree that each party shall maintain separate ownership and control over its own real and personal property. Therefore, there will be no need for joint disposal of property upon the termination of the agreement.

f. In accordance with § 11-13-206 and -207 of the Act, City appoints the chair of the executive body and Carbon County Appoints its Managing Defender as its administrator for all matters relating to its participation under the terms of this agreement, unless the party notifies the other party in writing that it is designating a new administrator. To the extent that any administration of this agreement becomes necessary, the parties' administrators named above shall constitute a joint board for such purpose, and each party shall have an equal vote in any decision.

g. There is no joint budget. Each party shall supply at its own cost all contractors, personnel, equipment, supplies, and materials necessary to perform its obligations and intended actions as set forth in this agreement. Each party will be responsible for maintaining its own financial budget for both income and expenditures arising under this agreement.

h. This agreement shall not constitute a joint venture between the parties. No party shall serve as the legal representative or agent of the other party for any purpose. Neither party shall have power to assume or create, in writing or otherwise, any obligation or responsibility of any kind, express or implied, in the name of or on behalf of the other party. Neither party shall have any obligation with respect to the other party's debts or other liabilities.

IN WITNESS WHEREOF, the parties hereto have caused this agreement to be duly executed, with the effective date written above.

CARBON COUNTY COMMISSION

By: _____
COMMISSIONER JARED HADDOCK

Dated:_____

APPROVED AS TO FORM:

_____
CHRISTIAN BRYNER
Carbon County Attorney

Dated:_____

PRICE CITY, a Municipal Corporation

By: _____
MAYOR TERRY WILLIS

Dated:_____

APPROVED AS TO FORM:

_____

Price City Attorney

Dated:_____

LANDOWNER – OPERATOR RESTORATION AGREEMENT

Know All Persons By These Presents:

That the **City of Price** is the legal landowner of the following:

SE/4 SECTION 22, TOWNSHIP 15 SOUTH, RANGE 10 EAST, CARBON COUNTY, UTAH

and hereby releases **Coastal Plains Energy, Inc.**, hereinafter referred to as "Operator", from any future responsibility for clean up and/or any and all restoration to the SURFACE ONLY on the above-described land.

With these signatures placed on this agreement, I hereby accept this property AS IS, on this _____ day of July, 2026.

LANDOWNER: _____
City of Price, a municipal corporation in the State of Utah

Name and title: _____

ACKNOWLEDGMENT

Subscribed and sworn to before me this _____ day of _____, 2026.

_____
NOTARY PUBLIC

My Commission Expires: _____

OPERATOR REPRESENTATIVE: _____
Troy Winter

ACKNOWLEDGMENT

Subscribed and sworn to before me this _____ day of _____, 2026.

_____
NOTARY PUBLIC

My Commission Expires: _____

PRICE MUNICIPAL CORPORATION
185 EAST MAIN
P.O. BOX 893
PRICE UT 84501
Phone: 435-636-3182
Fax:

Purchase Order # 62830

To:	Ship to:
2806 CHRISTENSEN, JENNIFER C.	PRICE MUNICIPAL CORPORATION 185 EAST MAIN P.O. BOX 893 PRICE UT 84501

P. O. Date	Created By	Requested By	Department	Req Number	Terms
07/09/2026	JenniferC		POLICE		

Description	GL Act No.	Invoice No.	Total
PER DIEM $141.00 MEALS ST. GEORGE 9/13, 14, 15, 16	10-60-230		141.00

SHIPPING & HANDLING	0.00
TOTAL PO AMOUNT	141.00

Authorized Signature

ORDERS IN EXCESS OF $1,000 MUST BE APPROVED

Price City Police Department
Travel Request and Authorization

Date: 07/09/2026

Employee: Jennifer Christensen

Purpose of Travel: TAC Conference

Agency Sponsoring Activity: UDPS Bureau of Criminal Identification

Destination: St. George, UT

Dates employee will be involved in training (include travel time): 09/13/26 – 09/16/2026

Expenses will be reimbursed to the City by: _____

_____

Method of Travel:

City Vehicle (gas) $ _____

Personal Vehicle (gas)

Flight + Transportation $ _____

Meals: (3) Lunches @ $19.00
(3) Dinners @ $28.00 $ 141.00

Lodging: (3) Nights (On Visa) $ 392.25

Registration Fees: Conference Registration x1 (on Visa) $ 150.00

Other Expenses: _____ $ _____

Total (estimate): $ 683.25

****

Submitted by: _____

Submitted to City Council for Approval on _____

Department *of* Public Safety
Bureau *of* Criminal Identification

REGISTRATION/PAYMENT FORM
2026 BCI TAC CONFERENCE

$150.00 fee per TAC or Alt-TAC

Agency Name:	Price City Police Department
Agency ORI:	UT0040100
	(This is a *nine-character* identifier that begins with "UT" or "UX" and is unique to your agency. Please contact BCI if you do not know your agency's ORI.)
Person(s) Attending:	Jennifer Christensen
Attendee's e-mail address:	jenniferc@priceutah.gov
Other ORIs you will be representing:	

- This form must be submitted with payment: credit card information (see page two), check, or IAT.
    - Please submit the registration form with credit card information or IAT electronically via email to **wthomsen@utah.gov and mmartinez@utah.gov** Check payments may be mailed with a registration form to the Utah Bureau of Criminal Identification Attn: Field Services, 4315 South 2700 West Suite 1300, Taylorsville, UT 84129
- Please fill out one form per type of payment. (e.g. If you have one check issued by your department for the TAC and Alt-TAC, you would fill out one form and indicate the names of all attendees that the payment is for.)
- **The final day to register is Monday, August 17, 2026**. BCI will not accept payments after August 17th and you will not be able to attend the TAC Conference if you have not paid by that date. *Please be aware that BCI will not be issuing refunds for any reason.*

The following fields are for STATE AGENCIES ONLY			
State agencies paying by IAT *must* fill out *all* of the following fields, or there will be a delay in processing your payment. If paying by IAT you may email your form to mmartinez@utah.gov.			
Fund:	Agency:	Unit:	APP:
Object Code:	Function Code:		
Financial Contact Person:		Financial Contact Phone #:	
Financial Contact Address:			

Credit Card Payments – see next page

BUREAU OF CRIMINAL ID
4315 S 2700 W Suite 1300
TAYLORSVILLE, UT 84129

Transaction 22672421 Transaction Type: Sale
Receipt 2026057164 Cashier: katwood:BCIFRT
Customer: UT0040100 PRICE PD / JENNIFER CHRISTENSEN

TAC CONF REG FEE	1 at 150.00		150.00
		Total	150.00

CREDIT CARD 150.00

VI **********0384 KEYED
Approval: 008481
Trace Number 0

Total Tendered	150.00
Change Due	0.00

All sales are final. No refunds!

Todas las ventas son finales. ¡No reembolsos!

07/08/2026 08:23

Jennifer Christensen <jenniferc@priceutah.gov>

Hotels.com travel confirmation - Sun, Sep 13 - (Itinerary # 73480597195401)

1 message

Hotels.com <hotels@eg.hotels.com> Tue, Jun 23, 2026 at 9:31 AM
Reply-To: No Reply <reply-7THP47SJRP6UHBO5AV4R2JJ3S4.120049@eg.hotels.com>
To: jenniferc@priceutah.gov

Hotels.com

All set, Price Municipal Corp. Your hotel is confirmed.

View full itinerary

Tru By Hilton St George, UT

Hotels.com itinerary: 73480597195401

Check-in

3:00pm

Sun, Sep 13

Check-out

12:00pm

Wed, Sep 16

3 nights, 1 adult, 1 room

Room, 2 Queen Beds

Non Smoking

1251 S Sunland Dr, St. George, UT, 84790 United States of America

Reserved for **Price Municipal Corp Police Department.**

You added stay protection.

Policy number:

View Policy Submit a Claim

Free cancellation until Sep 7 at 11:59pm (property local time)

Change or cancel booking

Plan more of your trip

Your stay is booked!

Add more rooms

Explore more by car

Rent a car

Price details

Stay Protection Plan	$21.33

Collected by property

3 nights x 1 room	$328.05
Taxes on fees	$42.87
Subtotal	**$370.92**

Total	**$392.25**
Paid on Jun 23, 2026 [Visa] ••••• [0384]	$21.33
Due at property	$370.92

Required fees/taxes will be collected at the property.

See information about fees and deposits

Important Information

Additional property fees
These fees and deposits only apply if they are not included in your selected room rate.

The price DOES NOT include any applicable property service fees, charges for optional incidentals (such as minibar snacks or telephone calls), or regulatory surcharges. The property will assess these fees, charges, and surcharges upon check-out.

Rules and restrictions
For rules and restrictions please view your full itinerary.

Cancellations and changes

There is no charge for cancellations made before 11:59pm (property local time) on Sep 7, 2026. Cancellations or changes made after 11:59pm (property local time) on Sep 7, 2026 are subject to a property fee equal to the first night's rate plus taxes and fees.
If you fail to check in for this reservation, or if you cancel or change this reservation after check-in, you may incur penalty charges at the discretion of the property of up to 100% of the booking value.

Guest charges and accommodation capacity
Base rate is for 1 guest.
If rates are listed below, they may be quoted in the currency of the country where the property is located.
Total maximum number of guests per room/unit is 4.
Maximum number of adults per room/unit is 4.
Maximum number of children per room/unit is 3.
Maximum number of infants per room/unit is 3.
This property considers guests aged 17 and under, at time of travel, to be children.
Availability of accommodation in the same property for extra guests is not guaranteed.

Check-in policies
Check-in time starts at 3:00 PM
Check-in time ends at anytime
Minimum check-in age is: 21

Special Instructions
Front desk staff will greet guests on arrival at the property. Information provided by the property may be translated using automated translation tools.

Late arrival instructions
If a late check-in is planned, contact this property directly for their late check-in policy.

Terms and conditions
Please save or print upon receiving this email to maintain a record of the terms and conditions that apply to you.
Terms and conditions

Stay Protection Plan

Sun, Sep 13 - Wed, Sep 16

You have purchased Stay Protection Plan. Please refer to your itinerary number when calling to ask questions or file a claim.

Itinerary # 73480597195401

Where to find help

For special requests and questions about your reserved room or the property, contact Tru By Hilton St George, UT.

Tel: 1 (435) 6347768

If you need help managing this itinerary, contact Hotels.com.

Get support on the Hotels.com app with 24/7 access to our virtual agent.

Manage your itinerary

How helpful was this email?

☆ ☆ ☆ ☆ ☆

Not helpful — Extremely helpful

Download the Hotels.com app

Privacy Help View online

This email and its links may contain your personal information; please only forward to people you trust.

You are receiving this transactional email based on a recent booking, interaction with us, membership or account update on Hotels.com.

Expedia, Inc. 1111 Expedia Group Way West, Seattle WA 98119, USA.

Jennifer Christensen <jenniferc@priceutah.gov>

Generali Global Assistance & Insurance Services Policy #26174X05JL for Price Municipal Corp Police Department

1 message

customersupport@info.generalitravelinsurance.com Tue, Jun 23, 2026
<customersupport@info.generalitravelinsurance.com> at 9:32 AM
Reply-To: customersupport@generalitravelinsurance.com
To: jenniferc@priceutah.gov

GENERALI GLOBAL ASSISTANCE | Hotels.com

Insured: Price Municipal Corp Police Department

Address: Electronic Fulfillment - Address not applicable

Plan Number: 26174X05JL

Travel Protection Plan Cost: $21.33

Travel Reservation Number: 73480597195401

Dear Price Municipal Corp Police Department,

Thank you for choosing Generali Global Assistance for your travel protection needs. Your Travel Protection Plan, detailing the terms and conditions of your plan, is attached. We highly recommend reviewing your plan document carefully and that you take a copy of it with you on your trip.

The plan you have purchased is designed to meet your most pressing travel needs and includes both travel insurance and assistance services. The pricing and outline of these offerings is included in the plan document attached.

To further assist you during you trip, emergency assistance is available 24 hours a day by contacting our Travel Assistance Team within the U.S. at (866) 922-0278 or internationally at (202) 974-6480 (collect calls accepted).

If you have any questions about your plan, please contact our Customer Service Department at (800) 551-9242. Your free look period expires on Jul 07, 2026. If you decide to cancel this plan during your free look period and you have not left for your covered trip or filed a claim, simply visit http://www.hotels.com/trips/73480597195401, or contact your travel provider at 866-316-0357 or internationally at 404-728-8787 to request a full refund.

In the event you need to file a claim, please click here.

Sincerely,

Generali Global Assistance & Insurance Services

This plan is Underwritten by Generali U.S. Branch and Administered by Generali Global Assistance & Insurance Services

This Travel Protection Plan is governed by the laws of the state in which it is delivered.

Travel Protection Plan Summary

See your attached plan for available coverages and services

Insurance Coverages

The insurance policy provides travel insurance benefits as described within the policy document, Declarations and endorsements. The benefits described in the policy are subject to all terms, conditions and exclusions of the policy. The policy serves as proof of insurance coverage.

Assistance Services

Assistance Services **are not** insurance benefits and are not provided by Generali – U.S. Branch. A separate assistance company provides the Assistance Services through coordination, negotiation, and consultation with an extensive network of worldwide business partners and vendors. Expenses for goods and services provided by these third parties are the responsibility of the traveler and are not covered by the insurance policy. The Assistance Services and the terms and conditions that govern the Assistance Services are included in the enclosed Travel Protection Plan fulfillment.

The plan cost includes the Travel Insurance premium and assistance services fee. Travel insurance coverages are underwritten by: Generali U.S. Branch, New York, NY; NAIC # 11231, for the operating name used in certain states, and other important information about the Travel Insurance & Assistance Services Plan, please see Important Disclosures

19COVER0520US.docx

GRHD10062326UT.pdf
2573K

Tru By Hilton St George, UT

St. George
9.0/10 - Wonderful**9.0 out of 10 Wonderful (1,008 reviews)**
(1,008 reviews)
Check-in
Sun, Sep 13, 3:00pm
Check-out
Wed, Sep 16, 12:00pm
Property highlights
PoolPet friendlyAir conditioningGym
2 x Room, 2 Queen Beds
2 Queen BedsSleeps 4Free breakfastFree WiFi

Itinerary #

73480597195401

Contact email

jenniferc@priceutah.gov

PRICE MUNICIPAL CORPORATION
185 EAST MAIN
P.O. BOX 893
PRICE UT 84501
Phone: 435-636-3182
Fax:

Purchase Order # 62829

To:	Ship to:
12277 RIGBY, BRANDON	PRICE MUNICIPAL CORPORATION 185 EAST MAIN P.O. BOX 893 PRICE UT 84501

P. O. Date	Created By	Requested By	Department	Req Number	Terms
07/09/2026	JenniferC		POLICE		

Description	GL Act No.	Invoice No.	Total
PER DIEM $113.OO MEALS SANDY 8/12,13,14/26	10-60-230		113.00

SHIPPING & HANDLING	0.00
TOTAL PO AMOUNT	113.00

Authorized Signature

ORDERS IN EXCESS OF $1,000 MUST BE APPROVED

Price City Police Department
Travel Request and Authorization

Date: 07/09/2026

Employee: Brandon Rigby

Purpose of Travel: Stopping Online Child Predators

Agency Sponsoring Activity: Sandy City Police Department

Destination: Sandy, UT

Dates employee will be involved in training (include travel time): 08/12/26 – 08/14/2026

Expenses will be reimbursed to the City by: Internet Crimes Against Children Utah Attorney General Grant

Method of Travel:

City Vehicle (gas)	$
Personal Vehicle (gas)	
Flight + Transportation	$
Meals: (3) Lunches @ $19.00 (2) Dinners @ $28.00	$ 113.00
Lodging: (2) Nights (On Visa)	$ 865.93
Registration Fees: Conference Registration x1 (on Visa)	$ 395.00
Other Expenses:	$
Total (estimate):	$ 1373.93

****

Submitted by: B Rigby

Submitted to City Council for Approval on

Stopping Online Child Predators

Undercover Investigations & Strategies for Prosecution

Hosted by: Sandy City Police Department
Location: Sandy City Police Department
10000 S. Centennial Parkway, Sandy UT 840
Date: August 13 - 14, 2026
Time: 8:00 a.m. – 5:00 p.m.

Internet Crimes Against Children - Utah Attorney General $7,500.00 grant to pay

*"Hey sir, I just wanted to let you know that th two guys in custody! This sh** works!"*

About the Course

With the rapid growth of social media use a increasingly targeting underage victims fo must take a proactive role in combating th enforcement officers with the tools and str undercover online chatting and sting operations.

Participants will learn how to create undercover personas, navigate current chat applications and lingo, and execute successful sting operations. These topics are covered through a slide presentation, lecture, discussion and practical application. Students will leave prepared to implement these techniques with their own agencies.

Topics Include

- Phones, Websites and Emulators
- Setting Up Your Sting Operation
- House OP vs Car Dates
- Personnel and Assignments
- Interviewing Your Suspect
- Search Warrants and Report Writing
- Training Decoys
- Sting Operation Preparation
- UC Images for Chatting
- Creating Your UC Persona
- Creating Your Backstory
- Creating UC Profiles on Apps
- Chatting Techniques
- Legal Issues and Entrapment

Register Online: www.calibrepress.com
Contact: Madeline Arnold – madeline@calibrepress.com
Registration Fee: $395 per person

Calibre Press

Invoice

Date	Invoice #
3/18/2026	26-163272

Bill To	Ship To
PRICE CITY POLICE DEPARTMENT 910 NORTH 700 EAST PRICE, UT 84501	

P.O. Number	Terms
	Due on receipt

Quantity	Item Code	Description	Price Each	Amount
2	SANDY2026	STOPPING ONLINE CHILD PREDATORS SANDY, UTAH AUGUST 13 - 14, 2026 CAMERON SARTORI BRANDON RIGBY	395.00	790.00
1	SANDY2026	STOPPING ONLINE CHILD PREDATORS SANDY, UTAH AUGUST 13 - 14, 2026 CANCEL - CAMERON SARTORI 07/07/26	-395.00	-395.00
		Out-of-state sale, exempt from sales tax	0.00%	0.00

PLEASE REMIT PAYMENT TO:
CALIBRE PRESS
P.O. BOX 3476 GLEN ELLYN, IL 60138-3476

Total	$395.00
Payments/Credits	$0.00
Balance Due	$395.00

INTUIT quickbooks

Sign in

Paid

Paid invoice

Invoice 26-163272 $395.00

Transaction ID: 10ab20xud88g

Payment details

Download confirmation

Invoice	26-163272
Business	Calibre Press
Email	jenniferc@priceutah.gov
Payment method	VISA****0384
Transaction ID	10ab20xud88g
Due date	August 12, 2026
Invoice amount	$395.00
Total charged	**$395.00**

Your feedback matters

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Feedback

Your booking summary

Itinerary number: R6469008426

Hotel: Hilton Garden Inn Salt Lake City/Sandy

Status: CONFIRMED

Check-in: Wednesday, August 12, 2026,

Check-out: Friday, August 14, 2026

Rooms: 1

Room 1: 1 Adult

Total: $865.93

We sent an email confirmation to brandonrigby@priceutah.gov

If you haven't received it within a few minutes, check your spam folder or contact us directly. Each room in this reservation is subject to the following cancellation policy: Cancellations before 08/11/2026, 11:59 PM (America/Denver) are fully refundable. Bookings cancelled after 08/11/2026, 11:59 PM (America/Denver) are non-refundable. There is no refund for no-shows or early checkouts.

For questions about your booking, please contact us. Our agents are friendly and available 24/7.

Hilton Garden Inn Salt Lake City/Sandy

277 West Sego Lily Drive, Sandy, UT, 84070

Search additional dates at this hotel

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PRICE MUNICIPAL CORPORATION
185 EAST MAIN
P.O. BOX 893
PRICE UT 84501
Phone: 435-636-3182
Fax:

Purchase Order # 62828

To:	Ship to:
16994 WORLEY, DEBBIE	PRICE MUNICIPAL CORPORATION 185 EAST MAIN P.O. BOX 893 PRICE UT 84501

P. O. Date	Created By	Requested By	Department	Req Number	Terms
07/09/2026	DebraW				

Description	GL Act No.	Invoice No.	Total
PER DIEM $113.00 MEALS ST. GEORGE 9/8.9,10/26	10-61-230		113.00

SHIPPING & HANDLING	0.00
TOTAL PO AMOUNT	113.00

Authorized Signature

ORDERS IN EXCESS OF $1,000 MUST BE APPROVED

Price City Police Department
Travel Request and Authorization

Date: 07/07/2026

Employee: Debbie Worley

Purpose of Travel: SWAVO Quarterly Training

Agency Sponsoring Activity: UOVC

Destination: St George

Dates employee will be involved in training (include travel time): 09/08,09,10/2026

Expenses will be reimbursed to the City by: _____

P.O. 62828

Method of Travel:

City Vehicle (gas) $ _____

Personal Vehicle (gas)

Flight + Transportation $ _____

Meals: (3) Lunches @ $19.00
(2) Dinners @ $28.00 $ 113.00

Lodging: (2) Nights @ $124.68 (On Visa) $ 249.32

Registration Fees: $ _____

Other Expenses: (On Visa) _____ $ _____

Total (estimate): $ 362.32

****

Submitted by: _____

Submitted to City Council for Approval on _____

September 2026 SWAVO Registration

SWAVO is a statewide advocacy one day training geared towards victim service providers. This training is a hybrid event and has an in-person or virtual option.

Event Timing:
Wednesday, September 9, 2026 8:30 am - 5:00 pm

Event Address: In Person:
Best Western Plus Abbey Inn
1129 S Bluff St
St. George, UT 84770
435-652-1234

Zoom Link will be provided with registration

Hotel Block Information:
Hotel offering the GSA rate for St. George
Booking link: https://www.bestwestern.com/en_US/book/hotel-rooms.45072.html?groupId=5P0BG4K7

You can use this link to reserve your hotel room until **August 20th!**

Questions or accommodations requests can be sent to Vickie Bushman at vsbushman@utah.gov or Beatriz Herrera at biherrera@utah.gov

worley.debbie@priceutah.gov Switch account

Draft saved

* Indicates required question

Would you like certificate of attendance?

Attendance will be checked

- (●) Yes
- ( ) No

Clear selection

A copy of your responses will be emailed to the address you provided.

Submit Clear form

Never submit passwords through Google Forms.

reCAPTCHA
Privacy Terms

This form was created inside of State of Utah. - Contact form owner

Does this form look suspicious? Report

Google Forms

Debra Worley <worley.debbie@priceutah.gov>

Reservation Confirmation – Sep-08-2026 stay at Best Western Plus Abbey Inn

1 message

Best Western Hotels & Resorts <reserv@cs.bestwestern.com> Tue
To: worley.debbie@priceutah.gov

CONFIRMING YOUR UPCOMING STAY
Confirmation Number: 144179866

Debbie Worley

Best Western Plus Abbey Inn
View Hotel Details

1129 S Bluff Street
Saint George, Utah
84770-5247, United States

Hotel (435) 652-1234
Worldwide Reservation Numbers

Your Stay**

CHECK-IN	CHECK-OUT
03:00 PM	11:00 AM
Tuesday	**Thursday**
08	10
SEPTEMBER 2026	SEPTEMBER 2026

HOTEL AMENITIES

Room 1

Room	Suite-1 King Bed
Rate	Dynamic Group 0611
Maximum Occupancy	1 Adult

Your Room May Include: Non-Smoking, Eurotop Mattress, Wireless High-Speed Internet, Microwave And Refrigerator, Coffee Maker, Full Breakfast

Reservation Amount	
TOTAL CHARGED TODAY	$0.00
TOTAL CHARGED ON ARRIVAL	$249.32
ROOM 1	$ 220.00
PRODUCTS	$0.00
TAXES & FEES	$29.32
TOTAL COST OF STAY	$249.32

Account No: 3892
Business Activity: 454
Fee: $150
CC Approval: ☐ Yes ☐ No Date:
License Sent:
Health Dept:

Price Utah

BUSINESS LICENSE APPLICATION

Send all completed and properly signed forms (including attachments as necessary) along with applicable licensing fees to: Price City Business Licensing, P.O. Box 893, 185 East Main, Price, UT 84501. For questions call (435) 636-3183.

PLEASE TYPE OR PRINT LEGIBLY, ONLY COMPLETED, LEGIBLE APPLICATIONS, WILL BE CONSIDERED FOR APPROVAL.

Business Information

Business Status: ☑ New Business ☐ Location Change ☐ Name Change ☐ Ownership Change

Business Name *(include DBA)*: Tony & Tina Guerras Farms

If Name Change, list previous name:

Business Address: 59 E. 100 N. | Suite/Apt. No.:

City: Price | State: Ut | Zip Code: 84501

Business Telephone: (801) 499-1924 | Business E-mail: antonioguerra1924@gmail.com | Business Fax:

Mailing Address *(if different)*: 760 E Main St. | City: Santaquin | State: Ut | Zip Code: 84655

Property Owner's Name: Chad | Property Owner's Telephone: ( )

Type of Organization: ☐ Corporation ☐ Partnership ☑ Sole Proprietorship ☐ LLC
(Include copy of name registration with the State of Utah)

Type of Business: ☐ Commercial ☐ Home Occupation (complete below also) ☐ Reciprocal
☐ Home Occupation - Office Use Only
☐ Home Occupation - Activity On Site
☐ Home Occupation Office Use Only Fee Waiver Request. Must be documented by applicant and consistent with UCA 10-1-203(7)(b).
☐ Fee Waiver Requested: Price City Staff Completion of Supplemental Review Form and Attach

Nature of Business: ☐ Manufacturing ☐ Retail ☐ Wholesale ☐ Services ☐ Other

Opening Date: 7/16/26 Business Hours: From 9:00 To 6:00 (M) (T) W TH F S SU *(please circle)*

Detailed Description of Business:
selling fresh / locally grown produce, vegetables, fruit
Fresh Produce Stand

State Sales Tax I.D. No. ***(Include copy or proof of exemption)*****:** | **Federal Tax I.D. No.** ***(Include copy)*****:**

State License No. ***(Include copy)*****:** 14710037-0151 | **State License Type:**

THE FOLLOWING LICENSES ARE SUBJECT TO ADDITIONAL REQUIREMENTS. Please contact the Business Licensing Officer (City Recorder) at (435) 636-3183, or 185 East Main, for more information. ***Check all that apply.***
☐ Alcoholic Beverages ☐ Eating Establishment ☐ Amusement Center
☐ Pawnbroker ☐ Sexually Oriented Business

Updated 01-08-2026