



PLANNING & ZONING COMMISSION

REGULAR MEETING AGENDA

June 24, 2025

7:00 PM

Rifle City Hall - Council Chambers

Meeting Type / Acting Body

6:00 PM - Workshop Meeting

Discussion and Review

- a. CO Energy Office - Local Impact Accelerator Grant Opportunity

7:00 PM - Regular Meeting

1. Call to Order

2. Roll Call

3. Pledge of Allegiance

4. Consent Agenda

- 4.a. Consider minutes of the May 27th, 2025 regular P&Z Meeting

5. Action, if any, on Workshop Items

6. Presentation

7. Public Hearing

- 7.a. Discussion and possible action regarding 2025-013 Stillwell Condominiums - Sketch/Preliminary Plan

8. Regular Agenda

- 8.a. Discussion and possible action regarding CO Energy Office - Local Impact Accelerator Grant opportunity

- 8.b. Discussion and possible action regarding Rifle's Energy and Resilience Action Plan

9. Staff Reports

10. Adjournment

The order and times of agenda items listed above are approximate and intended as a guideline for the Planning Commissioners

ACCESSIBILITY STATEMENT

The City of Rifle values full inclusion and access for all of our facilities, programs, activities and services. We are pleased to provide meaningful accommodations to comply with the Americans with Disabilities Act (ADA) and reasonably provide translation, interpretation, modifications, accommodations, alternative formats, auxiliary aids, and services. To request special assistance, call Administrative Assistant Genesis Amaya at 970-665-6493 or email our ADA Team at ADAteam@rifleco.org. Please allow 48 hours for your requests to be met.

La Ciudad de Rifle valora la plena inclusión y acceso para todas nuestras instalaciones, programas, actividades y servicios. Nos complace proporcionar alojamientos significativos para cumplir con la Ley de Estados Unidos con Discapacidades (ADA) y proporcionar razonablemente traducciones, interpretaciones, modificaciones, adaptaciones, formatos alternativos, ayudas auxiliares y servicios. Para solicitar asistencia especial, llame a la Asistente Administrativa al 970-665-6493 o envíe un correo electrónico a el equipo ADA a ADAteam@rifleco.org. Por favor, permita 48 horas para que se atiendan sus solicitudes.

Colorado Local Climate Action Accelerator Overview

In July 2024, the Colorado Energy Office (CEO) was awarded an implementation grant from the Climate Pollution Reduction Grant (CPRG) program from the U.S. Environmental Protection Agency (EPA). \$60M of the awarded funds are for the Local Climate Action Accelerator program which will support local government climate policy adoption in the sectors where local governments can make a significant impact on emissions.

Preliminary program details

- **Total amount available:** \$60M to support local climate policy adoption and implementation.
- **Program administration:** The EPA award is administered by CEO, in close collaboration with the Colorado Department of Public Health and Environment (CDPHE), the Colorado Department of Transportation (CDOT), and the Department of Local Affairs (DOLA).
- **Eligible applicants:** All Colorado local governments and collaborations between local governments.
- **Program design overview:** Statewide program to incentivize widespread progress on equitable climate action at the local level, inspired by similar programs in other states. Local governments can apply for grants for:

1) Technical assistance for policy adoption:

Receive technical assistance (staff and/or consulting assistance) to support local climate policy adoption

2) Incentive opportunities for implementation:

Committing to pursue policy adoption opens eligibility and prioritization for grants for implementation projects

Eligible policies and implementation projects

Colorado’s [Priority Climate Action Plan](#) (PCAP) for the EPA established eligible measures that can be funded by the awarded CPRG grant. The table below summarizes eligible policies and projects, which will be refined in program design.

Table. Eligible policies and projects by sector

Sector	Local Climate Policies	Project incentives
Buildings	<ol style="list-style-type: none"> 1. Adopt state minimum building energy codes, incl. electric, solar, and EV-ready provisions 2. Adopt energy codes and performance standards that exceed state requirements 3. Provide incentives and financing for energy efficiency, electrification, and renewables 	Building energy efficiency and electrification, and on-site renewable energy projects
Land use	<ol style="list-style-type: none"> 1. Encourage accessory dwelling units (ADUs) and attached homes in all residential areas 2. Encourage multi-family housing and mixed-use development near transit and in commercial areas 3. Implement policies to discourage greenfield development 4. Implement robust parking reduction policies 5. Adopt best practices in EV charging permitting 6. Reform utility scale renewable energy permitting 	Infrastructure projects to support multi-family affordable housing development near transit and in infill areas
Transportation	<ol style="list-style-type: none"> 1. Adopt a plan for high quality active transportation infrastructure 2. Adopt a plan for bus rapid transit and other transit priority measures 3. Adopt policies to encourage transit and active transportation use and reduce parking (Transportation Demand Management) 4. Implement differentiated vehicle registration and other fees based on vehicle size or efficiency 	High quality bicycle and pedestrian infrastructure projects
Waste	<ol style="list-style-type: none"> 1. Adopt jurisdiction-wide waste policies 2. Encourage adoption of zero emission vehicles for hauling waste 	Zero emissions waste vehicles and charging equipment

Preliminary schedule

- **October 2024:** Anticipating EPA award to be finalized
- **Fall 2024:** Hiring and procurement
- **Winter 2024:** Program design and stakeholder input
- **By June 2025:** Program launch of first policy adoption grant round
- **Summer 2025:** Launch of first project implementation grant round

Learn More

More information about the Accelerator program will be made available on the [Colorado Energy Office CPRG page](#), including opportunities to provide feedback as program design advances. Please contact Kelly Blynn (kelly.blynn@state.co.us) or Christian Williss (christian.williss@state.co.us) with any comments or questions.



REGULAR PLANNING COMMISSION MEETING & BOARD OF ADJUSTMENT

May 27th, 2025

Chair Marantino led the Planning Commission and audience in the Pledge of Allegiance.

The meeting starts at 7:01 p.m.

MEMBERS PRESENT AT ROLL CALL

Present: Marantino, Caldwell, Carter, Rogers, Steffen, Karzhova, Rodas, Dow

Absent: None

OTHERS PRESENT: PLANNING Director Zach Higgins, Senior Planner Geir Sverdrup, City Assistant Attorney Lawrence Bond, Building and Planning Technician Genesis Amaya, City Attorney Jim Neu, Aaron Reed

APPROVAL OF MINUTES

Commissioner Caldwell moved to APPROVE the December 17th, 2024 to April 29th, 2025 regular P&Z Commission Meeting Minutes.

Commissioner Rogers seconded the motion. The motions CARRIED with the following vote:

ROLL CALL:

YES: Marantino, Caldwell, Carter, Rogers, Rodas, Steffen, Dow

NO:

7:03 pm

Discussion 1:

Conditional Use Permit CUP 2025-007 for 14th Street Marketplace Carwash

Senior Planner Geir presents the Conditional Use Permit CUP – 2025-007 for a tunnel carwash at 14th Street Marketplace PUD property for the approval of the P&Z commission with conditions of breaking ground within one year of approval.

PUBLIC HEARING:

7:08 pm

Chair Marantino opens the public hearing.

Testimony 1: Aaron Reed, Applicant Representative

Mr. Reed provided a comprehensive overview of the proposed tunnel carwash at the 14th Street Marketplace, detailing its design and operational plans. He emphasized how the project would enhance local convenience, support economic growth, and align with community development goals.

COMMISSION DISCUSSION

7:12 pm

There was a discussion between Staff, Applicant, and Commissioners.

7:23 pm

Chair Marantino proposes a motion.

7:24 pm

Commissioner Caldwell moved to APPROVE recommendation for Conditional Use Permit CUP 2025-007 for 14th Street Marketplace Carwash with staff recommendations.

Commissioner Dow seconded the motion. The motions CARRIED with the following vote:

ROLL CALL:

YES: Marantino, Caldwell, Carter, Rogers, Rodas, Steffen, Dow

NO:

COMMENTS AND ADJOURNMENT –7:34 PM

Planning Director Zach Higgins updates commission on housing needs assessment, Energy Resilience Action Plan, and upcoming Third Thursday Event.

Commissioner Rogers announces upcoming events at the Ute Theatre.

_____	_____
Dustin Marantino, Chairman	Date

_____	_____
Genesis Amaya, Building/Planning Tech	Date

** A complete recording of the Meeting is available through the City of Rifle's website**

COMMUNITY DEVELOPMENT DEPARTMENT

202 Railroad Avenue, Rifle, CO 81650

Phone: 970-665-6490



MEMORANDUM

TO: City of Rifle Planning Commission
FROM: Geir H. Sverdrup
DATE: June 24, 2025
SUBJECT: Stillwell Condominiums – Sketch/Preliminary Plan
ADDRESS: 1012-1018 Stillwell Avenue
CASE #: 2025-013
APPLICANT: Ernesto Cuc / Coke Ovens 2 Inc

REQUEST AND SUMMARY

The applicant requests approval of a Sketch/Preliminary Plan for the conversion of an existing 4-Unit apartment building on Stillwell Avenue, zoned Medium Density Residential Redevelopment (MDRX) into a 4-unit condominium.

VICINITY MAP

The property is located at 1012-1018 Stillwell Avenue.



ZONING & LAND USE

The current zoning on the property is Medium Density Residential Redeveloping (MDRX). This zone district is designated for higher density multiple-family dwellings.

The building was built in 1982 as an apartment complex. The applicant proposes to condominiumize the building for separate ownership

REFERRAL COMMENTS AND STAFF COMMENTS

The application was sent out for comments from other City Departments, Colorado River Fire Rescue. Comments that were received were no comment or nothing was received.

Due to the nature of an existing structure changing ownership type the only concerns were that the structure meets Building Code and Fire Code for fire wall separation. The applicant submitted a report showing that the structure met the code for fire walls in-between units.

PLANNING COMMISSION REVIEW CRITERIA

Pursuant to Section 16-5-280.- Review criteria and Planning Commission decision or recommendation, the Commission shall consider the following criteria before approving a project (***staff comments shown in bold italics***):

1. Conformance of the proposal with the City of Rifle Municipal Code;

The applicant has submitted a report showing compliance with building and fire code for fire separation.

2. The compatibility of the proposal with the character of the surrounding area, including but not limited to the architectural character of the neighborhood, the average lot and building sizes in the neighborhood, and the relative value of the proposed structure to the value of other structures in the neighborhood;

The residential use of the properties is not changing; the existing use continues to be compatible with the character of the surrounding area.

3. The desirability for the proposed use in the specific area of the City;

The Comprehensive Plan supports this type of use in this area. The area is designated as Moderate Density Residential at 7-15du/ac. Existing development is a mix of single-family homes and multi-family buildings. Underlying zoning of MDRX encourages higher densities.

4. The potential for adverse environmental effects that might result from the proposed use;

None.

5. Compatibility of the proposed use and the site (or subdivision) plan with the City of Rifle Comprehensive Plan;

This portion of Rifle is identified as being suitable for moderate density residential, which has a suggested density of 7-15 dwelling units per acre. The existing density of this project is 20.6 dwelling units per acre. The recommended du/ac is not site specific, but an overall density for the area.

6. The potential impact of the proposed use upon the value of property and buildings within the surrounding area;

Not applicable. No change in use, just ownership.

7. Conformance of the proposal with the approval requirements concerning water and sewer tap availability for high volume use requests pursuant to Section 13-4-120 of this Code, if applicable.

Not applicable.

STAFF RECOMMENDATION

Staff recommends that Planning Commission **approve** the Sketch Plan / Preliminary Plan for the Stillwell Condominiums Subdivision with the following condition:

1. All representations made by the Applicant in the application and during the public hearing shall be conditions of approval, unless specifically altered by the Planning Commission.

CONDOMINIUM MAP OF STILLWELL CONDOMINIUMS

PURPOSE: TO DIVIDE THE FOLLOWING PROPERTY INTO FOUR CONDOMINIUM UNITS & GENERAL COMMON AREA
 LOT 20 & SOUTH HALF OF LOT 19, BLOCK C, PARK AVENUE ADDITION AS RECORDED AUGUST 24, 1950 AT RECEPTION NO. 173244
 CITY OF RIFLE, COUNTY OF GARFIELD, STATE OF COLORADO

CERTIFICATE OF DEDICATION AND OWNERSHIP:

KNOW ALL MEN BY THESE PRESENTS THAT COKE OVENS 2 INC, A COLORADO CORPORATION, BEING THE SOLE OWNER IN FEE SIMPLE OF THE REAL PROPERTY DESCRIBED HEREIN, AND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

LOT 20 AND THE SOUTHERLY ONE-HALF OF LOT 19, BLOCK C, PARK AVENUE ADDITION ACCORDING TO THE PLAT THEREOF RECORDED AUGUST 24, 1950 AS RECEPTION NO. 173244.

COUNTY OF GARFIELD
 STATE OF COLORADO

HAS BY THESE PRESENTS LAID OUT, PLATTED AND DESCRIBED THE SAME INTO EIGHT CONDOMINIUM UNITS AND APPURTENANT COMMON ELEMENTS AS SHOWN HEREON AND CONSOLIDATE THE SAME AS PART OF THE STILLWELL CONDOMINIUMS PURSUANT TO THE CONDOMINIUM DECLARATION FOR THE STILLWELL CONDOMINIUMS RECORDED ON _____, 2025 AS RECEPTION NO. _____ IN THE REAL PROPERTY RECORDS OF GARFIELD COUNTY, COLORADO, AND THE APPLICABLE PROVISIONS OF THE COLORADO COMMON INTEREST OWNERSHIP ACT, CRS 38-33-3-101 ET SEQ.

EXECUTED THIS _____ DAY OF _____, A.D., 2025.

OWNER:

COKE OVENS 2 INC, A COLORADO CORPORATION

BY:

JAIME ERNESTO CUC BAQUIN, PRESIDENT

STATE OF COLORADO)
) SS
 COUNTY OF GARFIELD)

THE FOREGOING CERTIFICATE OF OWNERSHIP WAS ACKNOWLEDGED BEFORE ME THIS _____ DAY OF _____, 2025 BY JAIME ERNESTO CUC BAQUIN AS PRESIDENT OF COKE OVENS 2 INC, A COLORADO CORPORATION.

WITNESS MY HAND AND OFFICIAL SEAL
 MY COMMISSION EXPIRES: _____

NOTARY PUBLIC

TITLE COMMITMENT:

7. RIGHT OF THE PROPRIETOR OF A VEIN OR LODE TO EXTRACT AND REMOVE HIS ORE THEREFROM, SHOULD THE SAME BE FOUND TO PENETRATE OR INTERSECT THE PREMISES HEREBY GRANTED, AS RESERVED IN UNITED STATES PATENT RECORDED JANUARY 19, 1911, IN BOOK 71 AT PAGE 453. *NOTHING TO PLOT*

8. EASEMENTS, RIGHTS OF WAY AND ALL OTHER MATTERS AS SHOWN ON THE PLAT OF PARK AVENUE ADDITION, FILED AS RECEPTION NO. 173244. *PLOTTED HEREON*

9. ANY AND ALL EXISTING LEASES AND/OR TENANCIES. *NOTHING TO PLOT*

10. ANY LOSS, DAMAGE OR CLAIM ARISING FROM THE FACT THAT THE SUBJECT PROPERTY'S FENCES ARE NOT PROPERLY LOCATED ON ITS BOUNDARIES, AS SHOWN ON THE IMPROVEMENT LOCATION CERTIFICATE PROVIDED BY BOOKCLIFF SURVEY SERVICES, INC. DATED DECEMBER 7, 2020 AS PROJECT NO. 20103-1, INCLUDING BUT NOT LIMITED TO THE FOLLOWING: A) OVERHEAD ELECTRICAL LINES B) GRAVEL ALLEY EXTENDING THROUGH EAST PROPERTY LINES. *ALLEY AND OVERHEAD ELECTRIC PLOTTED HEREON*

TITLE CERTIFICATE

I, _____, AS TITLE EXAMINER OF TITLE COMPANY OF THE ROCKIES TITLE INSURANCE COMPANY, DO HEREBY CERTIFY THAT I HAVE EXAMINED THE TITLE TO THE PROPERTY DESCRIBED HEREON, AND THAT TITLE TO SUCH LANDS IS VESTED IN COKE OVENS 2 INC, A COLORADO CORPORATION, FREE AND CLEAR OF ALL LIENS AND ENCUMBRANCES (INCLUDING MORTGAGES, DEEDS OF TRUST, JUDGMENTS, EASEMENTS, CONTRACTS AND AGREEMENTS OF RECORD AFFECTING THE REAL PROPERTY IN THIS PLAT), EXCEPT AS FOLLOWS:

DATED THIS _____ DAY OF _____, A.D. 2025.

TITLE COMPANY OF THE ROCKIES

BY: _____

AGENT

CITY COUNCIL CERTIFICATE:

THIS SPACE RESERVED FOR COUNCIL CERTIFICATE

CITY OF RIFLE MAYOR

PLANNING COMMISSION CERTIFICATE:

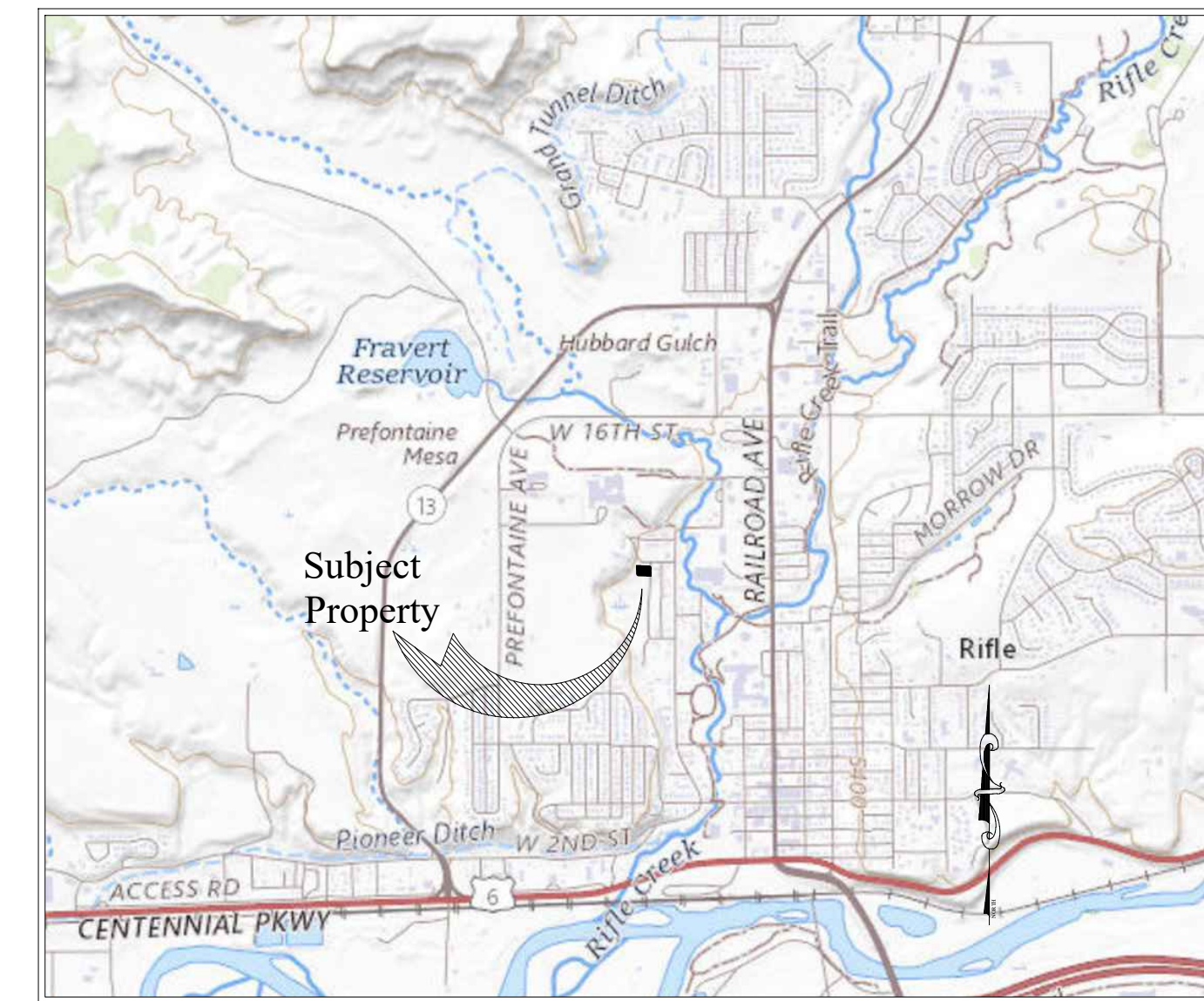
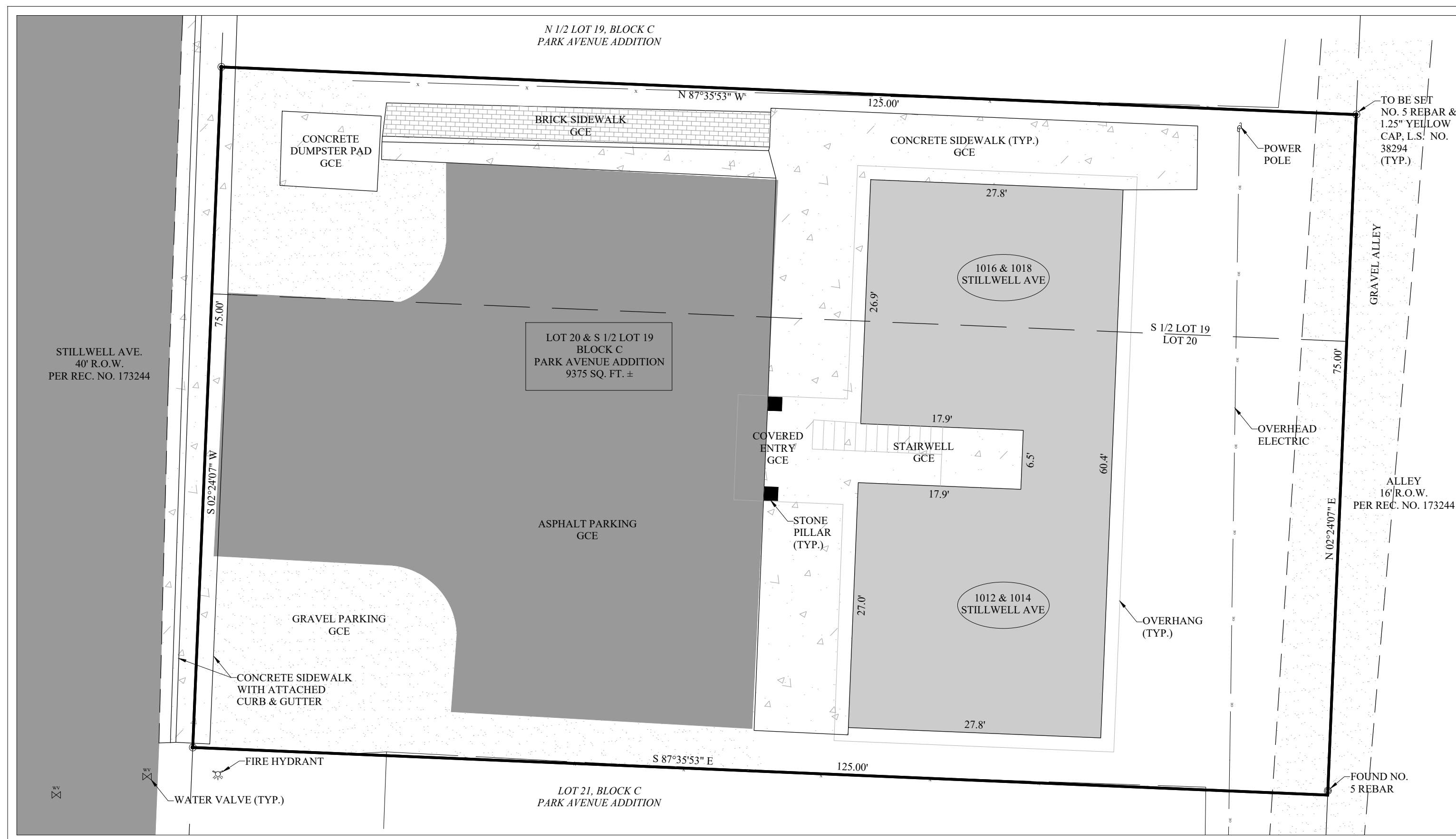
THIS CONDOMINIUM PLAT APPROVED BY CITY OF RIFLE PLANNING COMMISSION THIS _____ DAY OF _____, 2025.

ZACK HIGGINS, PLANNING DIRECTOR

PUBLIC WORKS DIRECTOR'S CERTIFICATE:

THIS SPACE RESERVED FOR PUBLIC WORKS DIRECTOR'S CERTIFICATE.

CITY OF RIFLE PUBLIC WORKS DIRECTOR



VICINITY MAP
 SCALE 1" = 2,000'

NOTES:

- 1) THIS PROPERTY IS SUBJECT TO RESERVATIONS, RESTRICTIONS, COVENANTS, SETBACKS AND EASEMENTS OF RECORD, OR IN PLACE AND EXCEPTIONS TO TITLE SHOWN IN THE TITLE COMMITMENT PREPARED BY TITLE COMPANY OF THE ROCKIES, COMMITMENT NO. 1203675-C2 EFFECTIVE DATE DECEMBER 11, 2020.
- 2) THE DATE OF THIS SURVEY FIELD WORK WAS APRIL 18, 2025.
- 3) BASIS OF BEARING FOR THIS SURVEY IS A BEARING OF N02°24'07"E BETWEEN THE NORTHEAST CORNER OF LOT 24, A NO. 5 REBAR FOUND IN PLACE AND THE SOUTHEAST CORNER OF LOT 20, A NO. 5 REBAR FOUND IN PLACE. BEARINGS ARE BASED ON IMPROVEMENT LOCATION CERTIFICATE 1012-1018 STILLWELL AVENUE DATED 03-28-2025 BY TUTTLE SURVEYING SERVICES.
- 4) UNITS OF MEASURE FOR ALL DIMENSIONS SHOWN HEREON IS U.S. SURVEY FEET.
- 5) THIS SURVEY IS BASED ON THE MAP OF THE PARK AVENUE ADDITION, TOWN OF RIFLE AS RECORDED AUGUST 24, 1950 AS RECEPTION NO. 173244 IN THE GARFIELD COUNTY CLERK AND RECORDER'S OFFICE AND CORNERS FOUND IN PLACE.
- 6) ALL CORNERS, FOUND OR SET, ARE FLUSH WITH THE GROUND UNLESS OTHERWISE NOTED.
- 7) THIS PROPERTY IS ZONED DEVELOPING RESOURCE (DR) PER ZONE DISTRICT MAP OF THE CITY OF RIFLE AMENDED NOVEMBER 18, 2015, ORDINANCE 19, SERIES 2015, REVISED 9/12/18.
- 8) PROPERTY LIES WITHIN ZONE C, AREAS OF MINIMAL FLOODING, ACCORDING TO THE FEMA FLOOD INSURANCE RATE MAP COMMUNITY-PANEL NUMBER 085078 1351 D REVISED JANUARY 3, 1986.
- 12) THIS CONDOMINIUM PLAT IS SUBJECT TO THE CONDOMINIUM DECLARATION OF STILLWELL CONDOMINIUMS RECORDED _____ AT RECEPTION NO. _____.

SURVEYOR'S CERTIFICATE:

I, TRAVIS J. KAISER, DO HEREBY CERTIFY THAT I AM A PROFESSIONAL LAND SURVEYOR LICENSED UNDER THE LAWS OF THE STATE OF COLORADO, THAT I HAVE PREPARED THIS CONDOMINIUM MAP OF STILLWELL CONDOMINIUMS, THAT THE LOCATION AND DIMENSIONS OF THE HORIZONTAL BOUNDARIES OF EACH UNIT AND THAT UNITS IDENTIFYING NUMBER, THE APPROXIMATE LOCATION AND DIMENSIONS OF COMMON ELEMENTS, AND THE LOCATION OF OTHER FEATURES, ARE ACCURATELY AND CORRECTLY SHOWN HEREON; THAT THE SAME WAS MADE FROM AN ACCURATE CONTROL SURVEY OF SAID PROPERTY UNDER MY SUPERVISION IN THE FIELD WHICH BALANCED AND CLOSED IN ALL DIRECTIONS AND THAT THE CONFORMITY WITH COLORADO PROFESSIONAL STANDARDS FOR A LAND SURVEY PLAT AND THE CURRENT ACTING STANDARDS FOR ALL TYPES OF SURVEYS ARE CORRECTLY SHOWN; THAT THE LOCATION AND DIMENSIONS OF THE LOTS, EASEMENTS AND OTHER FEATURES SHOWN ON THIS PLAT ARE IN FULL COMPLIANCE WITH APPLICABLE REGULATIONS GOVERNING THE SUBDIVISION OF LAND, AND THAT THIS CONDOMINIUM MAP MEETS THE REQUIREMENTS OF A LAND SURVEY PLAT AS SET FORTH IN C.R.S. SECTION 38-51-106 AND CONTAINS ALL OF THE INFORMATION REQUIRED BY SECTION 38-33-3-209 OF THE COLORADO REVISED STATUTES.

PRELIMINARY
FOR REVIEW
 04/30/2025

IN WITNESS WHEREOF, I HAVE SET MY HAND AND SEAL THIS _____ DAY OF _____, A.D., 2025.

TRAVIS J. KAISER, P.L.S. #38294
 FOR AND ON BEHALF OF DRAKE CONSULTING, INC.

CLERK AND RECORDER'S CERTIFICATE

THIS CONDOMINIUM MAP OF LOT 2 OLIVER-CARR SUBDIVISION CONDOMINIUMS WAS FILED FOR RECORD IN THE OFFICE OF THE CLERK AND RECORDER OF GARFIELD COUNTY AT _____ O'CLOCK _____ M., ON THE _____ DAY OF _____, A.D. 2025, AND IS DULY RECORDED IN BOOK _____, PAGE _____, RECEPTION NO. _____.

CLERK AND RECORDER

BY: _____

DEPUTY

LAND USE SUMMARY

1012 STILLWELL AVE.	713 SQ. FT. ±
1014 STILLWELL AVE.	713 SQ. FT. ±
1016 STILLWELL AVE.	713 SQ. FT. ±
1018 STILLWELL AVE.	713 SQ. FT. ±
GENERAL COMMON ELEMENTS (GCE)	6523 SQ. FT. ±

TOTAL 9375 SQ. FT. ±

Drake Consulting, Inc.

Land Surveying
 PO Box 709 Rifle, CO 81650
 Phone 970-987-1389
 DrakeConsultingInc.com

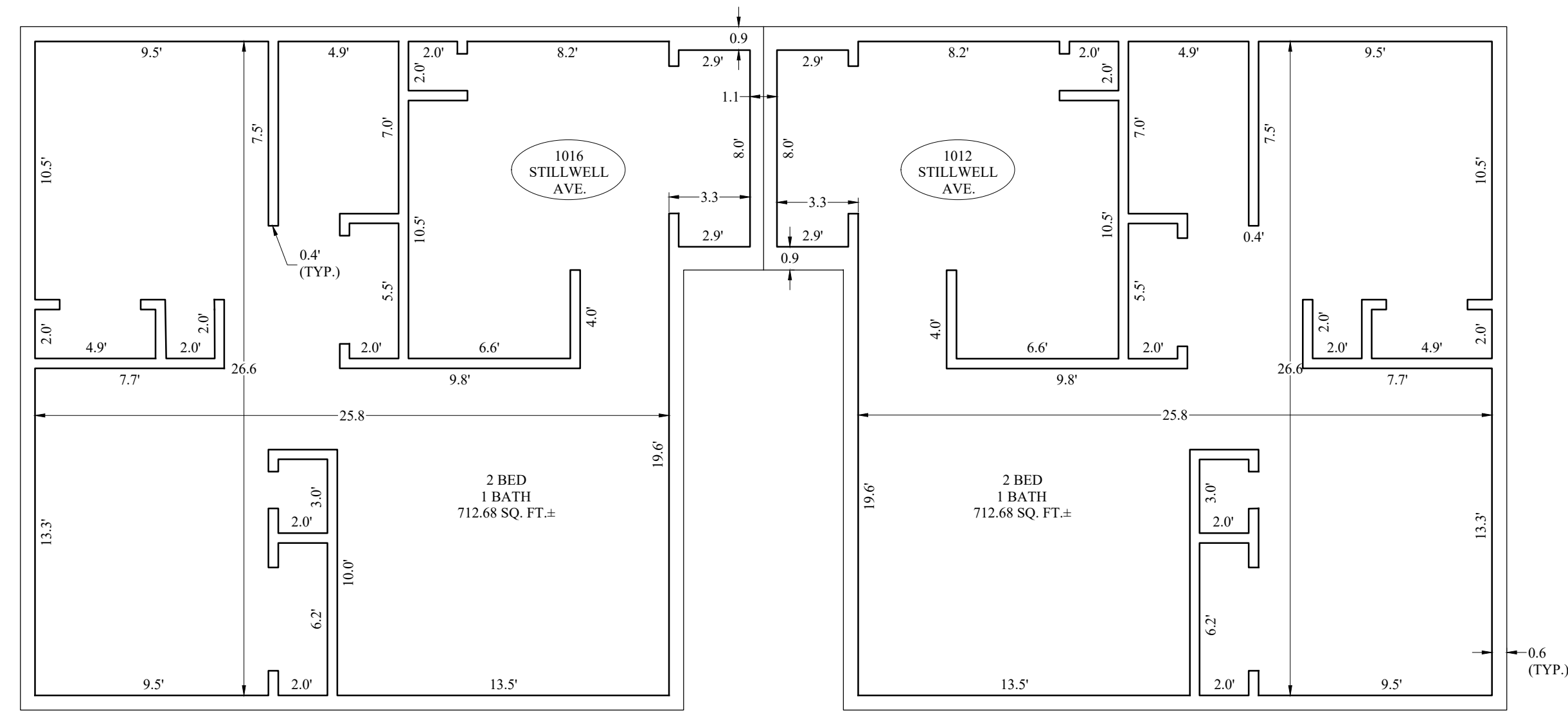
Drawn By:	NO.	Date	Revision	By
ARK				
Checked By:				
TJK				
Date:				
APRIL 30, 2025				
Computer File:				
016-CONDO.DWG				

COKE OVENS 2 INC. 1012-1018 STILLWELL AVE, RIFLE, CO	Project NO. 25016
CONDOMINIUM MAP OF STILLWELL CONDOMINIUMS	1 OF 2

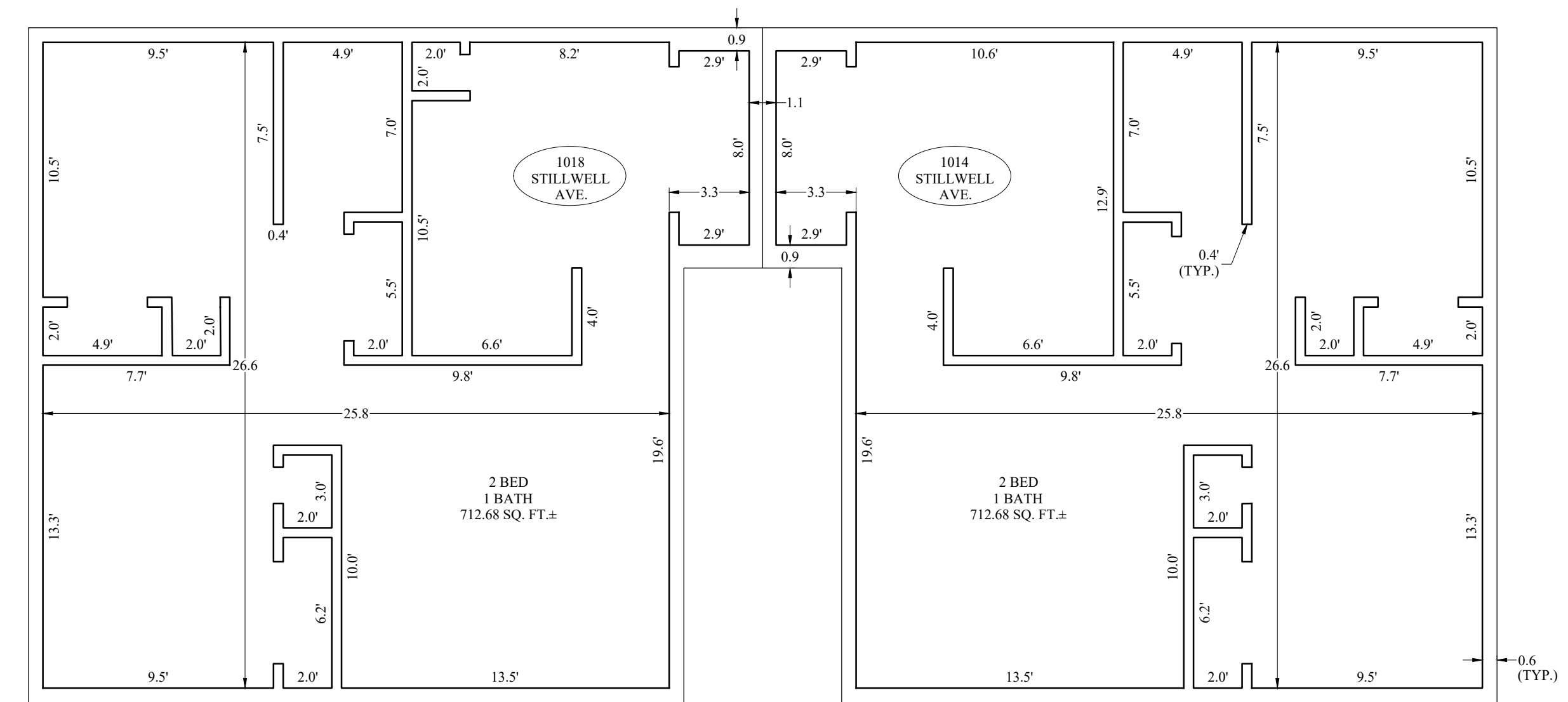
NOTICE: ACCORDING TO COLORADO LAW, YOU MUST COMMENCE ANY LEGAL ACTION BASED UPON ANY DEFECT IN THIS SURVEY WITHIN THREE YEARS AFTER YOU FIRST DISCOVER SUCH DEFECT. IN NO EVENT MAY ANY ACTION BASED UPON ANY DEFECT IN THIS SURVEY BE COMMENCED MORE THAN TEN YEARS FROM THE DATE OF THE CERTIFICATION SHOWN HEREON.

CONDOMINIUM MAP OF STILLWELL CONDOMINIUMS

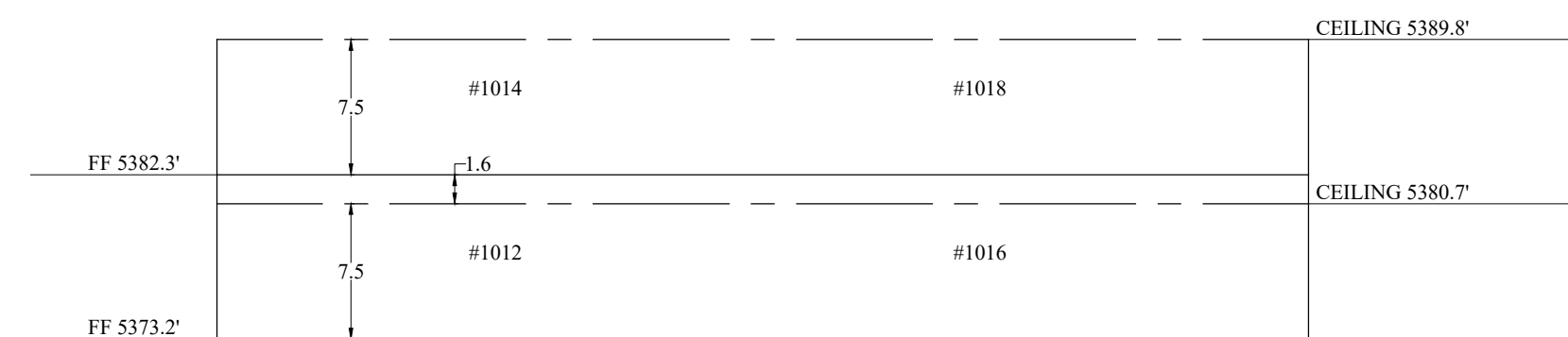
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 CITY OF RIFLE, COUNTY OF GARFIELD, STATE OF COLORADO



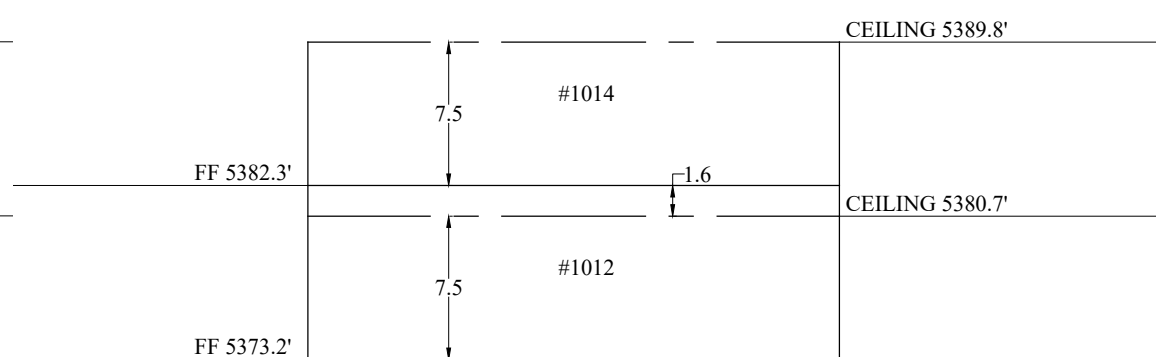
FIRST FLOOR
 SCALE 1" = 5'



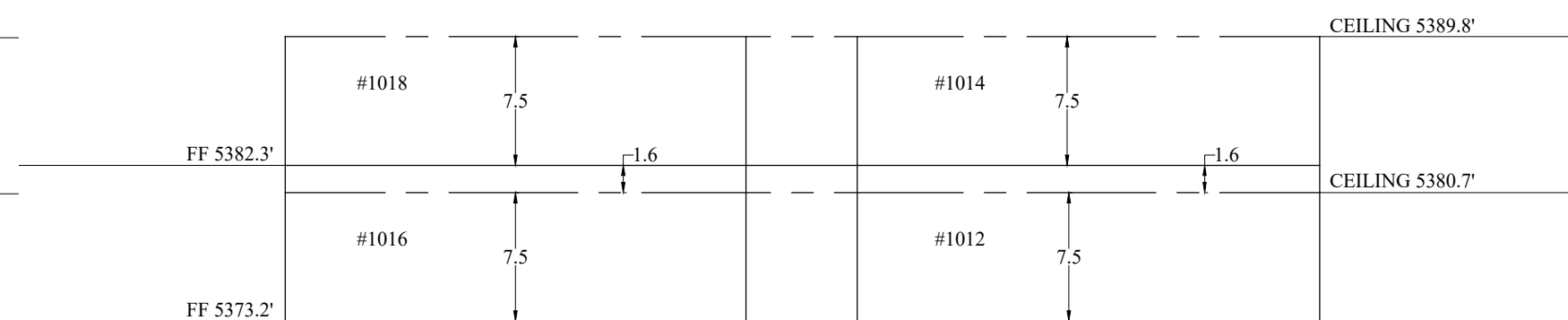
SECOND FLOOR
 SCALE 1" = 5'



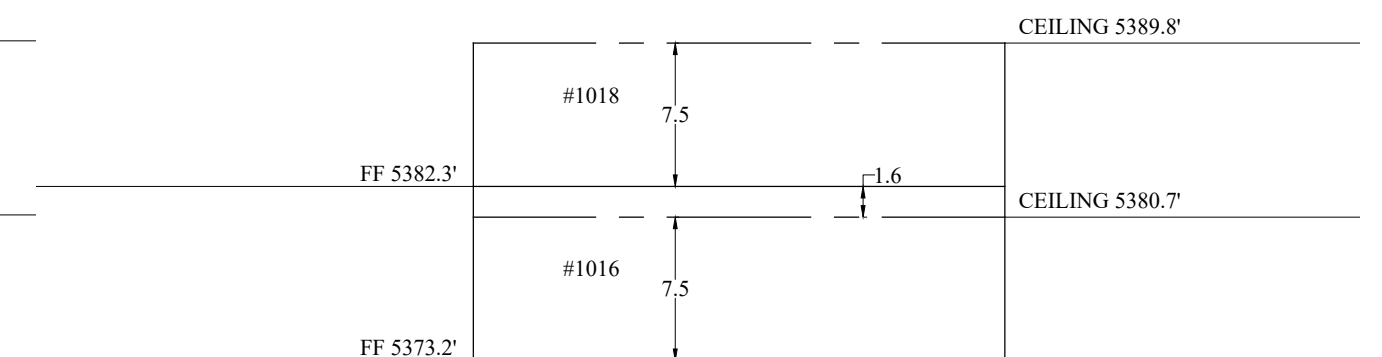
VIEW WEST
 (REAR OF BUILDING)
 SCALE 1" = 10'



VIEW NORTH
 SCALE 1" = 10'



VIEW EAST
 FROM STILLWELL AVE.
 (FRONT OF BUILDING)
 SCALE 1" = 10'



VIEW SOUTH
 SCALE 1" = 10'

SURVEYOR'S CERTIFICATE:

I, TRAVIS J. KAISER, DO HEREBY CERTIFY THAT I AM A PROFESSIONAL LAND SURVEYOR LICENSED UNDER THE LAWS OF THE STATE OF COLORADO, THAT I HAVE PREPARED THIS CONDOMINIUM MAP OF STILLWELL CONDOMINIUMS, THAT THE LOCATION AND DIMENSIONS OF THE HORIZONTAL BOUNDARIES OF EACH UNIT AND THAT UNIT'S IDENTIFYING NUMBER, THE APPROXIMATE LOCATION AND DIMENSIONS OF COMMON ELEMENTS, AND THE LOCATION OF OTHER FEATURES, ARE ACCURATELY AND CORRECTLY SHOWN HEREON; THAT THE SAME WAS MADE FROM AN ACCURATE CONTROL SURVEY OF SAID PROPERTY UNDER MY SUPERVISION IN THE FIELD WHICH BALANCE TO THE SATISFACTION OF THE COLORADO PROFESSIONAL STANDARDS FOR A LAND SURVEY PLAT AND THE CURRENT ACTING STANDARDS FOR ALL SURVEYS AS SET FORTH IN THE COLORADO PROFESSIONAL STANDARDS FOR THE LOCATION AND DIMENSIONS OF THE LOTS, EASEMENTS AND INTERESTS THEREON AS SET FORTH IN THE COLORADO PROFESSIONAL STANDARDS FOR THE LOCATION AND DIMENSIONS OF THE LOTS, EASEMENTS AND INTERESTS THEREON AS SET FORTH IN C.R.S. SECTION 38-51-106 AND CONTAINS ALL OF THE INFORMATION REQUIRED BY SECTION 38-33-3-209 OF THE COLORADO REVISED STATUTES.

IN WITNESS WHEREOF, I HAVE SET MY HAND AND SEAL THIS 04/30/2025 DAY OF APRIL, A.D., 2025.

TRAVIS J. KAISER, P.L.S. #38294
 FOR AND ON BEHALF OF DRAKE CONSULTING, INC.

PRELIMINARY
FOR REVIEW
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NOTICE: ACCORDING TO COLORADO LAW, YOU MUST COMMENCE ANY LEGAL ACTION BASED UPON ANY DEFECT IN THIS SURVEY WITHIN THREE YEARS AFTER YOU FIRST DISCOVER SUCH DEFECT. IN NO EVENT MAY ANY ACTION BASED UPON ANY DEFECT IN THIS SURVEY BE COMMENCED MORE THAN TEN YEARS FROM THE DATE OF THE CERTIFICATION SHOWN HEREON.

Drake Consulting, Inc. Land Surveying PO Box 709 Rifle, CO 81650 Phone 970-987-1389 DrakeConsultingInc.com	Drawn By:	ARK	NO.	Date	Revision	By	COKE OVENS 2 INC. 1012-1018 STILLWELL AVE, RIFLE, CO CONDOMINIUM MAP OF STILLWELL CONDOMINIUMS	Project NO.	25016
	Checked By:	TJK						2 OF 2	
	Date:	APRIL 30, 2025							
	Computer File:	016-CONDO.DWG							



CITY OF RIFLE 2025

ENERGY AND RESILIENCE ACTION PLAN





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LETTER FROM THE CITY

DRAFT



ACKNOWLEDGMENTS

Thank you to the following individuals and their teams who contributed to and were involved in this Energy and Resilience Action Plan process.

CITY COUNCIL

Sean Strode, Mayor
Chris Bornholdt, Mayor Pro Tem
Joe Carpenter, Councilor
Michael Clancy, Councilor

Alicia Gresley, Councilor
Clint Hostettler, Councilor
Karen Roberts, Councilor

CITY OF RIFLE PROJECT TEAM

Patrick Waller, City Manager
Craig Spaulding, City Engineer
Austin Rickstrew, Parks and Recreation Director

Zach Higgens, Planning Director
Geir Svederup, Senior Planner

COMMUNITY STAKEHOLDERS

Natalie Bowman, Rifle Housing Authority
Kate Collins, Middle Colorado Watershed Council
Tinker Duclou, Colorado Mountain College Rifle Campus
Jared Emmert, City of Rifle Utilities
Marina Karzhova, Rifle Planning and Zoning Commission
Kyle Lord, Holy Cross Energy
Brad McCloud, Xcel Energy
Chelsie Miera, Western Slope Colorado Oil and Gas Association

John Oldham, Garfield County RE-2 School District
Chavien Paget, Grand River Health
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PREPARED BY

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ACRONYMS

ACRONYM	DEFINITION
AC	Central air conditioning
CARE	Colorado Affordable Residential Energy
CDPHE	Colorado Department of Public Health and Environment
CH ₄	Methane
CLEER	Clean Energy Economy for the Region
CO ₂	Carbon dioxide
ERAP	Energy and Resilience Action Plan
GHG	Greenhouse gas
HFC	Hydrofluorocarbon
kW	Kilowatt
kWh	Kilowatt hours
LEAP	Low-income Energy Assistance Program
MT CO ₂ e	Metric tons of carbon dioxide equivalent
N ₂ O	Nitrous oxide
PFC	Perfluorocarbon
PPA	Power purchase agreement
SF ₆	Sulfur hexafluoride
WAP	Weatherization Assistance Program





CITY OF RIFLE 2025

ENERGY AND RESILIENCE ACTION PLAN

EXECUTIVE SUMMARY

BENEFITS OF ENERGY AND RESILIENCE ACTION PLANNING

This Energy and Resilience Action Plan (ERAP) works to align the City of Rifle (“the City”), its collaborative partners, and community members around shared goals for clean energy and resilience. It addresses the impacts of a changing climate and advances energy efficiency measures that benefit the community. Finally, it works to develop a diverse economy with quality jobs for Rifle community members, focused on local needs and providing residents options to work, live, and play in Rifle.

SNAPSHOT OF RIFLE

Rifle is a growing community located on the Western Slope of Colorado. As of 2023, it has the largest population in Garfield County. Many residents are proud to call Rifle home and value diverse aspects of the community. When asked what they love about Rifle, respondents in both the ERAP stakeholder group and the public input survey expressed common themes around the “small town feel” and the sense of community, connection, and support.

Major employers in the Rifle area include healthcare, education, construction, and oil and gas development. Ranching and mining have historically been important parts of the economy in the region, as well as outdoor recreation. However, more than 70% of the employed population commutes outside of Rifle for work.

2023 Annual Energy use	Costs
Residential accounts	\$6,567,665
Commercial and Municipal accounts	\$6,573,039
Total cost of energy for Rifle community buildings	\$13,140,704

Residents and businesses in Rifle, like many communities, spend a large share of their annual expenditures on electricity and natural gas. The annual energy bill for the community Rifle is calculated to be over \$13 million. A key way to reduce these costs and support economic development in Rifle is to improve the energy efficiency of buildings and infrastructure.

ENERGY AND RESILIENCE ACTION PLAN (ERAP) GOALS

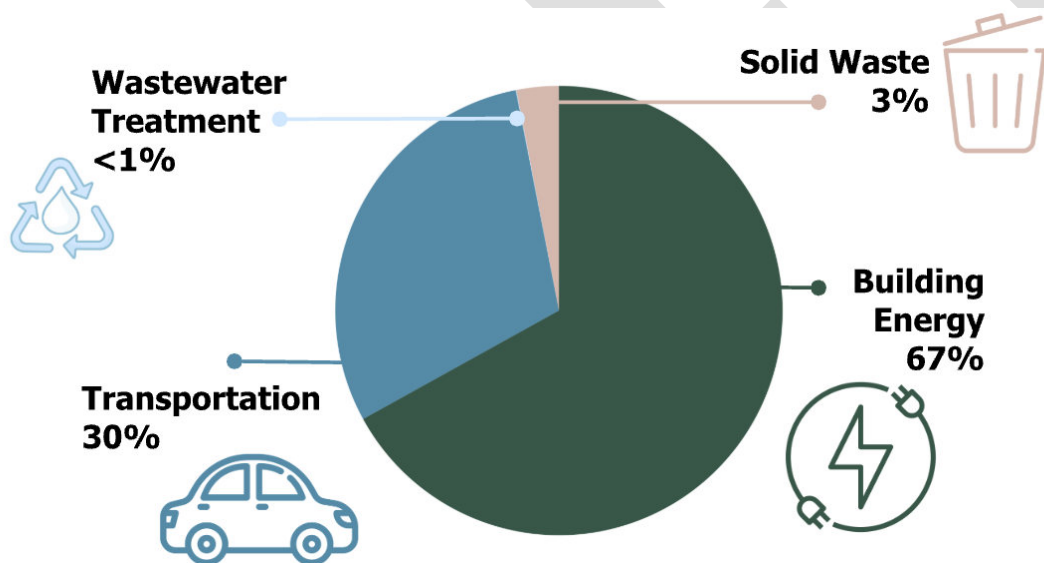
Three overarching goals guide the ERAP. These goals guide the vision of the plan to ensure that it best meets the needs of the City of Rifle and the priorities identified by the stakeholder group.

- 1. Engage community members in energy and resilience action.**
- 2. Provide tangible and achievable recommendations for municipal operations.**
- 3. Create options to reduce emissions, improve quality of life and create economic benefits for residents.**

THE DATA: GREENHOUSE GAS EMISSIONS INVENTORY, SOLAR ANALYSIS, AND VULNERABILITY ASSESSMENT

The ERAP utilized a data-driven approach to evaluate the City's current levels of energy use, emissions, and climate resilience. Three tools were used for this approach: a greenhouse gas emissions inventory, an analysis of Rifle's current solar energy production, and a community vulnerability assessment. The findings help to inform the strategies and action steps identified in the ERAP.

Greenhouse gas emissions (GHG) inventory: This inventory included utility, transportation, and waste data to develop a baseline for emission reductions. The City's greenhouse gas emissions in 2023 totaled 76,209 metric tons of carbon dioxide equivalent (CO₂e, a measurement used to standardize emission calculations for greenhouse gases like methane and nitrous oxide by converting them to the equivalent amount of CO₂ that has the same warming effect). More than two-thirds (67%) of Rifle's emissions were from electricity and natural gas use in buildings.



In Rifle, 70% of the employed population commutes outside the City for work, often for long distances. The emissions counted include only the vehicle's mileage while traveling through the jurisdiction and not the entirety of the trip.

In 2023, the City's municipal operations emitted a total of 1,190 metric tons of CO₂e. This is lower than similarly sized communities due to the significant portion of electricity supplied by Rifle's solar arrays.

Analysis of current solar production: Since 2008, the City of Rifle has prioritized the development of solar energy with the purpose of saving money on municipal energy costs, increasing energy independence, and reducing greenhouse gas emissions. Today, Rifle is a regional leader in municipal solar production.

For the ERAP, production data from the City's on-site solar arrays were reviewed to better understand the degree of energy independence. Based on solar production statements from the utility, the solar arrays produced more than 3 million kilowatt hours of electricity in 2023. Without this solar production, electricity emissions from City operations would be nearly 700 metric tons of CO₂e higher, and electricity costs would be hundreds of thousands of dollars more.

Vulnerability assessment: Colorado is getting hotter and drier, and already seeing the effects of that on communities, natural landscapes, and local economies. The vulnerability assessment examined demographic information and historic and projected climate data to characterize the impacts that these changes may have on Rifle and its residents. This analysis supports efforts to develop plans to protect residents and boost resilience.

The vulnerability assessment found that the impacts of a warming climate affect Rifle in the following ways:

- Extreme **high temperatures and heat waves** are increasing. The projected maximum annual days with temperatures over 95°F are expected to rise from less than 10 days in 2005 to more than 60 days in 2080.
- **Dry periods**, defined as the maximum consecutive days with no precipitation, are increasing. There are also fewer frost-free days in the region, which reduces the accumulation of snowpack.
- **Wildfires and wildfire smoke** are increasing in frequency and intensity.
- **Vulnerable populations** in Rifle are more susceptible to the impacts of climate change. This can include the elderly, non-English speakers, and people with pre-existing health conditions, among others.
- The need for **air purification and cooling** is increasing. Central air conditioning systems are a critical way to protect occupants from both heat and wildfire smoke exposure.

WHERE WE'RE HEADED: FOCUS AREAS, STRATEGIES, AND ACTION STEPS

The strategies and action steps outlined in the ERAP are the heart of the energy and resilience action planning effort. They provide a pathway for the City and its partners to benefit residents, businesses, and local governments – both now and into the future.

A variety of tools were utilized to develop the strategies in the ERAP. City of Rifle staff recommended actions that were valuable to the City and the broader community based on needs that they had identified. Input from stakeholders and the general public was incorporated through a variety of engagement methods, including three stakeholder workshops, two open house events, and a public input survey.

The City's energy and resilience action planning effort is organized around four focus areas. These were selected to group both City and community needs into useful categories that prioritize important sectors. Goal-oriented strategies were then developed along with specific action steps to provide a roadmap to achieve the plan's goals.

The project team identified four focus areas to organize and guide the planning effort. These areas encompass a variety of sectors for the City and its partners to address in their progress toward ERAP implementation.

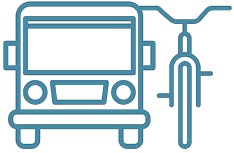


FOCUS AREAS AND STRATEGIES



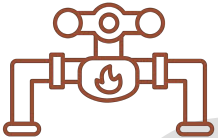
BUILT ENVIRONMENT: residential and commercial buildings and landscapes

- Improve energy efficiency and onsite energy production in buildings
- Reduce water use on properties in the community
- Expand access to innovative heating, cooling, and air purification
- Utilize land use principles for conservation of energy and land
- Prepare community assets and infrastructure for extreme weather and natural disasters



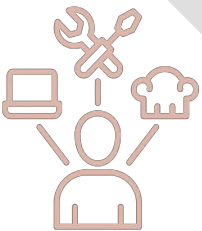
TRANSPORTATION: alternative fuels, city fleets, multimodal transportation

- Encourage biking and walking around the City
- Enhance community-based transit options
- Address impacts of extreme weather to transportation options
- Reduce fuel use by City fleets
- Improve traffic flows within the City
- Support expanded access to electric vehicle charging



MUNICIPAL OPERATIONS: solid waste, water and wastewater treatment, municipal facilities

- Reduce energy use in City facilities
- Improve energy efficiency and resilience of water and wastewater treatment infrastructure and distribution
- Optimize solar production on municipal properties
- Reduce water use on municipal properties
- Address risks of a warming climate to City facilities
- Implement green infrastructure and shade cover in sites throughout the City
- Increase waste diversion and reduction rates within the City



ECONOMIC DEVELOPMENT: workforce, economic diversification, and training

- Support community and private sector partnerships for economic development
- Prioritize local production and small businesses
- Provide clean energy and energy efficiency training opportunities for local workforce
- Invest in clean energy at homes and businesses
- Support workforce health and safety during extreme weather events



INTRODUCTION

- ❖ **BACKGROUND ON RIFLE**
- ❖ **BENEFITS OF ENERGY AND RESILIENCE ACTION PLANNING**
- ❖ **GOALS OF ENERGY AND RESILIENCE ACTION PLANNING**
- ❖ **PLANNING PROCESS**
- ❖ **FOCUS AREAS AND STRATEGIES**

BACKGROUND ON RIFLE

The City of Rifle is located in the high desert heart of the Colorado River Valley. With 10,500 people, it has the largest population of the municipalities in Garfield County. Surrounded by the Roan Plateau, the Grand Hogback, and the Flat Tops mountains, Rifle has ample opportunities for outdoor recreation. The Rifle community is growing both in population and in economic opportunities. Amenities are expanding to include offerings like the Ute Theater, more restaurant options, and a new climbing gym.

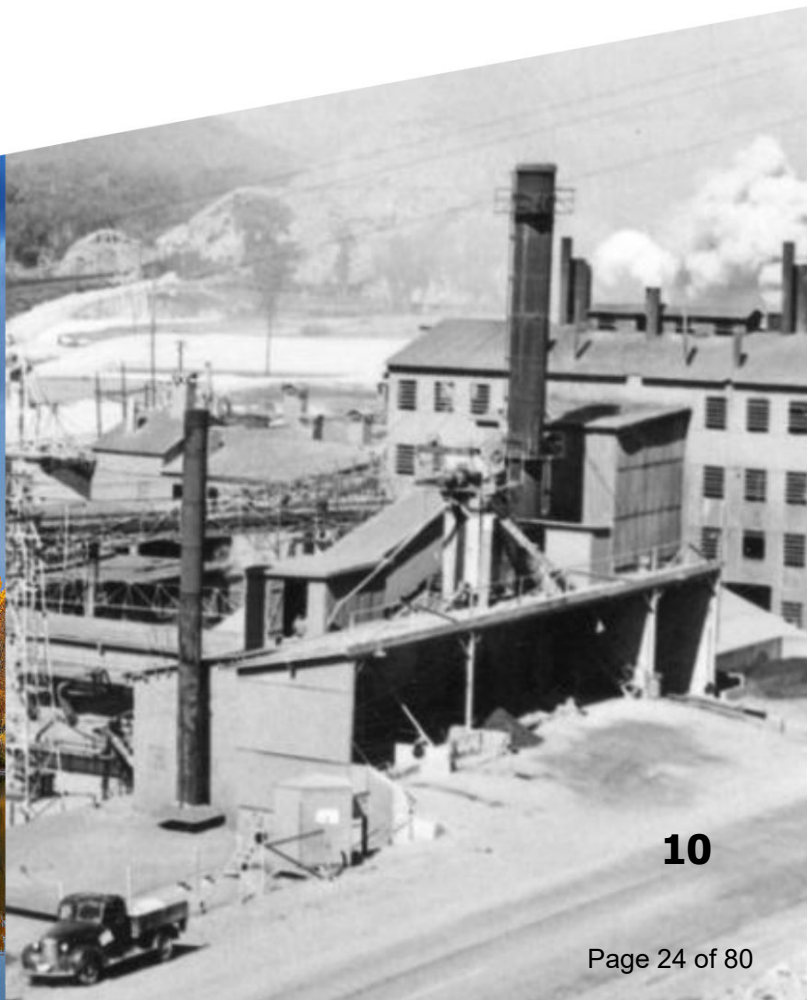
When asked what they love most about Rifle, residents often answer the “small town feel” and the sense of connection and support. People in Rifle are hardworking and are willing to roll up their sleeves to get things done.

Rifle has a long history of energy production, including oil and gas development as well as uranium mining and milling. The Old Rifle Mill site, operational between 1924 and the 1960s, was declared a federal Superfund site and has since been remediated. It is now the location of the City’s wastewater treatment plant and one of the larger solar arrays in the County.

Solar energy supplies a significant portion of the electricity for Rifle’s municipal operations. Rifle is considered a solar leader in the region, with arrays that produced over 3 million kilowatt hours of electricity in 2023. Many of these arrays were installed in 2008 and have since been offsetting the cost of electricity for the City. Rifle is also subscribed to a portion of community solar through Xcel Energy.

Pond image credit: Paul Gana, [Middle Colorado Watershed Council](#)

Uranium mine image credit: [Energy.gov](#)



BENEFITS OF ENERGY AND RESILIENCE ACTION PLANNING

This plan works to align the City of Rifle, its collaborative partners, and community members around shared goals for clean energy and resilience. It addresses the impacts of a changing climate, supports energy efficiency measures that benefit the community, and aligns with the City's comprehensive plan. It also works to promote a diverse economy with quality jobs for Rifle community members, focused on local needs and providing residents options to work, live, and play in Rifle.

Plan development benefits lie not only in the final product, but in the process of developing the plan and its strategies. The project team worked to optimize energy and resilience action planning as a learning opportunity for the community.

This process provided a chance for the City and stakeholders to understand energy topics and to actively shape Rifle's future – including where energy savings can be realized for households, businesses, and governments. Participants learned about resources to advance clean energy and improve resilience to the effects of a warming climate. Stakeholder workshops helped increase communication between the City and partners.

With the ERAP in place, the City is well positioned to recruit additional resources for its implementation to benefit its residents, business community, and local government operations. The action steps in the plan catalyze improvements that the City has identified as being beneficial to the people it serves and the natural environment. They will also help manage energy costs citywide and create new economic opportunities.

Deerfield Park image credit: Rifleco.org

ENERGY¹ is the power from something such as electricity or oil that can do work, such as providing light and heat.

In this plan, it refers to energy efficiency, renewable energy, and reducing greenhouse gas emissions from energy production and use.

RESILIENCE² is the ability to successfully adapt to stressors in the face of adversity. It's the ability to "bounce-back" from difficult experiences.

In this plan, it refers to adaptation to the impacts of a warming climate and creating a more diverse and vibrant economy.



GOALS OF ENERGY AND RESILIENCE ACTION PLANNING

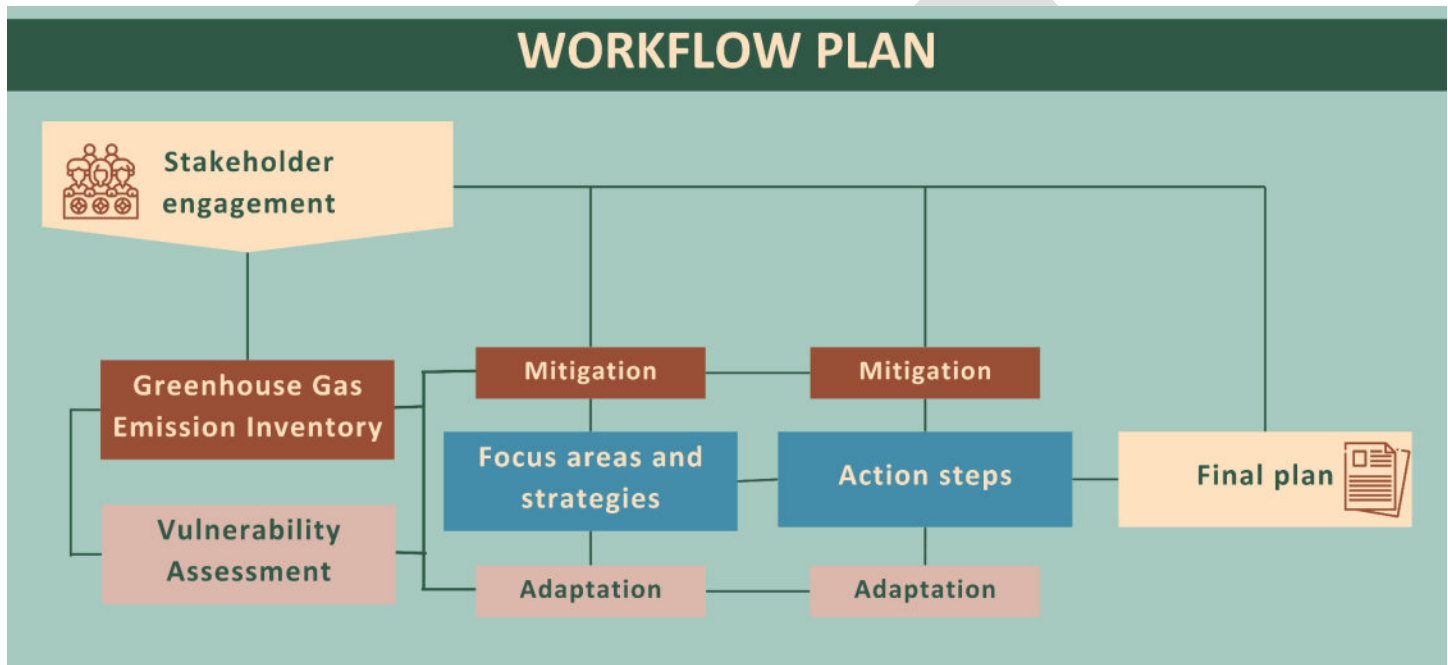
Three overarching goals guide this Energy and Resilience Action Plan. These goals are not quantitative, but rather guide the vision of the plan to ensure that it is best meeting the City's needs and the priorities identified by the stakeholder group.

- 1. Engage community members in energy and resilience action.**
- 2. Provide tangible and achievable recommendations for municipal operations.**
- 3. Create options to reduce emissions, improve quality of life, and create economic benefits for residents.**



PLANNING PROCESS

The project team started the planning process by developing a set of sector-specific focus areas that best fit the Rifle community and the City's goals for the ERAP. The project team consisted of key City of Rifle staff and the consultant team at CLEER. Concurrently, City staff developed a stakeholder list to ensure the plan represented the voices of community leaders and key sectors. Stakeholders then helped shape specific elements of the plan.



Public input on ERAP priorities was collected through a public input survey, which was open for two months and advertised widely. Over 100 responses were received, and a variety of ideas were expressed. The collected survey data helped create a picture of the community's current level of resilience to the impacts of a changing climate.

For each focus area, the project team and stakeholders developed a list of four to seven strategies. These strategies are broad, goal-oriented ways the City and residents can reduce energy use and increase resilience. From the strategies, more specific action steps were identified to provide a tangible pathway to energy and resilience action.

The plan focuses on both mitigation of and adaptation to a changing climate. The mitigation component started with conducting a greenhouse gas emissions inventory to establish a baseline of the main sectors producing these emissions, and how much they are contributing. These sectors included residential and commercial buildings, transportation, and waste and water management. This baseline then informed the strategies for mitigating Rifle's emissions.

A vulnerability assessment was conducted to establish a baseline of current and future social, economic, environmental, and infrastructure risks and vulnerabilities. This assessment helped the project team identify priorities, goals, and strategies for increasing the City's adaptive capacity and climate resilience.

FOCUS AREAS AND STRATEGIES

The project team identified four focus areas to organize and guide the planning effort. These areas encompass a variety of sectors for the City and its partners to address in their progress toward ERAP implementation.

residential buildings
commercial buildings
landscapes

alternative fuels
city fleets
multimodal transportation

**BUILT
ENVIRONMENT**

TRANSPORTATION

**MUNICIPAL
OPERATIONS**

**ECONOMIC
DEVELOPMENT**

solid waste
water and wastewater treatment
municipal facilities

workforce
economic diversification
training opportunities

Specific strategies and action steps are detailed in the “Where We’re Headed” section of this plan. It is important to note that some of the strategies identified are under the City of Rifle’s purview, whereas others are collaborative and are intended to be implemented by partners. Implementation partners were included in the stakeholder engagement process to provide input on steps that they may have a role in.

COMMUNITY CONTEXT



- ❖ STAKEHOLDER AND PUBLIC ENGAGEMENT
- ❖ SNAPSHOT OF RIFLE
- ❖ DEMOGRAPHICS
- ❖ HOUSING, ENERGY, AND WORKFORCE
- ❖ WHAT PEOPLE LOVE ABOUT RIFLE

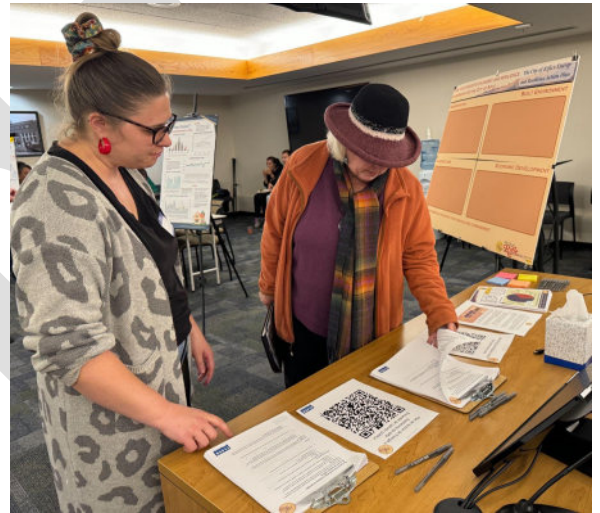
Characteristics of a community are valuable to inform the most effective and unique approaches to energy and resilience action. This section describes demographic and energy use data for the City of Rifle as well as input from community members that helped inform the findings of the ERAP.

STAKEHOLDER AND PUBLIC ENGAGEMENT

Early in plan development, the project team compiled a list of key leaders to serve as stakeholders and to represent the various sectors of the Rifle community that impact or are impacted by energy use and resilience. Twenty stakeholders attended at least one of three workshops hosted in the City. These included City Council and advisory boards and commissions, educational institutions, public health and healthcare, senior and housing services, local utility providers, local nonprofits, and the business community. Their input is reflected throughout the plan, including in this section and in the strategies and action steps.

The broader public had the opportunity to provide input on planning efforts through a public survey. This survey was open for two months and garnered 101 responses. Input was also encouraged at two events: a “Plan Jam” open house that drew 30 attendees, and a tabling setup at Hometown Holidays.

A more extensive report of stakeholder and public engagement is available in Appendix A.



Deerfield Park image credit: Rifleco.org



SNAPSHOT OF RIFLE

Rifle is a rural but expanding municipality located in Garfield County on the Western Slope of Colorado. As of the 2023 census data, it had the largest population of all towns in Garfield County. Rifle is surrounded by the Roan Plateau, the Flat Top mountains, and Mamm Peak. The Colorado River winds through the valley, providing both the City's drinking water source and a variety of recreational opportunities.

Residents and visitors alike enjoy the variety of outdoor recreation options in and around Rifle. Rifle Mountain Park has been a world-class rock climbing destination for many years, and the City has worked with local partners to expand mountain biking trail networks. Hunting and fishing are very popular and an important economic driver for Rifle.

Downtown Rifle offers a western, small-town atmosphere, with antique shops, dining, and historic museums. Rifle is also a regional economic center and an ideal location to draw ideas, intellectual capital, and investments to the region.

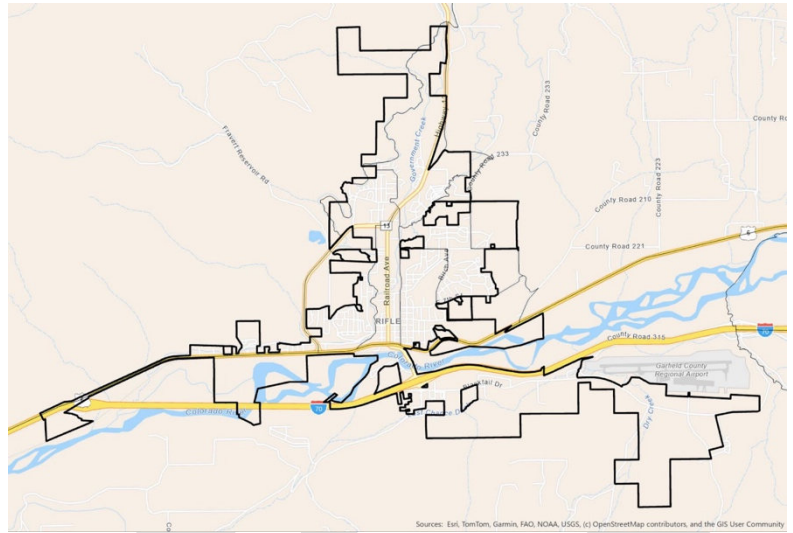


Figure 1. Map of Rifle



DEMOGRAPHICS

Residents of Rifle are increasingly diverse and represent vibrant cultural backgrounds. Below are some featured demographic statistics about the Rifle community. These characteristics help us understand the unique environment in Rifle that shapes its energy landscape and how to support the resiliency of residents and businesses.

Rifle demographics 2022	
Population	10,500
Median household income	\$72,900
Median home sale price 2024	\$539,000
% owner-occupied housing	70%
% of Garfield County population	17%
Growth over last 5 years	6%



Children:

Rifle has a high percentage of families. Nearly 40% of households have children under the age of 18, and 8% of the population is children under 5 years old.

Older adults:

Around 9% of community members are greater than 64 years old.

Disabled:

Around 9% of Rifle’s population has a disability.

Unemployment and commuters:

Only 3.2% of Rifle’s labor force is unemployed. However, more than 70% of Rifle's employed adult population leaves the community for work.

Communities of color:

Among Rifle residents, 38% identify as non-white or more than one race, and 30% speak a language other than English at home. Of that share, more than 40% speak English “less than very well.”

Living alone:

Only 4% of households in Rifle consist of only one person.

Outdoor workers:

Around 9% of jobs held by Rifle residents are in construction, natural resources, and maintenance operations – and tend to occur outdoors.

Pre-existing medical conditions:

Around 9% of the Rifle population is identified as having pre-existing health conditions including asthma, diabetes, coronary heart disease, and hypertension that could predispose them to the health effects of climate change.

Education:

Of adults over age 25, 18% have a bachelor’s degree or higher, around 35% have a high school or equivalent degree, and 13.5% have less than a high school diploma.

*Data may differ slightly from other reports for Rifle due to the needs of the report, sources and years used
 U.S Census Bureau data: [Rifle](#) and [Garfield County](#)
 Image credit: Rifle, Colorado Facebook page*

HOUSING, ENERGY, AND WORKFORCE

RIFLE HOUSING

Housing costs continue to increase throughout the region. As a result, more people are moving into areas like Rifle which has a comparatively cheaper cost of living. Amenities and opportunities in Rifle have continued to expand, further encouraging people to relocate there. In a 2024 article in *Forbes* magazine, Rifle was ranked 13th in the nation for the greatest home value increases.³ The median home price had increased 339% since 2004.

The affordability and availability of housing makes a difference for energy and resilience action. Lowering energy burdens for residents helps to make housing more affordable. Higher housing costs require residents to commute longer distances to their jobs, which increases greenhouse gas emissions, and the risks associated with driving. Sufficient and safe housing stock can make a community more resilient to natural disasters and other disruptions.

With an aim to enhance the livability of Rifle, this plan also focuses on the quality of housing and neighborhoods. In a stakeholder workshop, participants were asked: "What makes a dream house or home for you?" The question was designed to stimulate thinking around what makes housing desirable for current and prospective residents.

Top responses included:

- Family, friends, neighbors, and community
- Big, open kitchen
- Close to downtown
- Access to trails, parks, and waterways

Image credit: [ColoradoProperty.com](https://www.coloradoproperty.com)



ENERGY USE

Rifle is primarily served by Xcel Energy for both electricity and natural gas services. Xcel Energy’s electricity grid serving Rifle is getting cleaner, with 43% of the power supply coming from renewable energy in 2023. This greatly impacts greenhouse gas emissions: as the grid gets cleaner, emissions go down as well.

2023 Annual energy use	Costs
Residential accounts	\$6,567,665
Commercial accounts	\$6,573,039
Total cost of energy for Rifle community buildings	\$13,140,704

Total costs to meet energy demand in the community are significant. With a greater focus on savings, this money could be used for other expenses or be put back into the economy.

The annual energy bill for Rifle is calculated to be over \$13 million. A key way to reduce these costs and to support economic development in Rifle is by improving the energy efficiency of households and businesses.

Figure 1. Detail of the Rifle community’s energy cost
Data from [Xcel Energy’s community energy report](#).

Electricity and natural gas bills can be burdensome for low- or even moderate-income residents in Garfield County. The ERAP public input survey found that nearly a quarter of respondents and business owners felt that their utility bills made it difficult to afford other expenses. Over half said that their utility bills were higher than they would like.

How much do electric and natural gas bills affect your monthly personal or business budget?

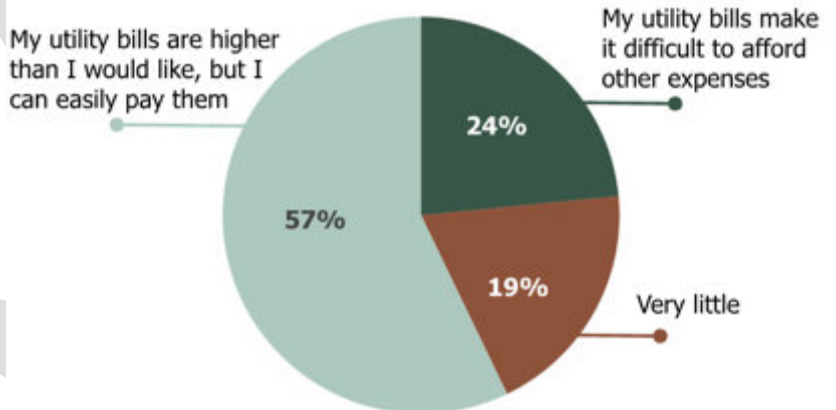


Figure 2. Survey responses to the question: "How much do electric and natural gas bills affect your monthly personal budget?"

Solar array image credit: Garfield Clean Energy



CLEAN ENERGY FOR ECONOMIC DIVERSIFICATION IN RIFLE

Leadership at the City of Rifle began pursuing renewable energy and energy efficiency as a component of economic diversification and resilience starting in 2008, with the City working to develop major solar installations on multiple city-owned properties. The City of Rifle has also pursued development of an Energy Innovation Center to create local jobs and economic opportunities in Rifle.⁴



The Rifle City Council and staff were key leaders in the region's success in winning a major state New Energy Communities Initiative grant that provided funding for multiple renewable energy and energy efficiency projects in Rifle and the region. These included assisting with solar installations on City-owned facilities as well as the Garfield County Fairgrounds, the Garfield County Library, and energy efficiency improvements throughout town. Projects were all focused on reducing ongoing energy costs as well as longer term strategic economic diversification. The City was also integral to the formation of the Garfield Clean Energy Collaborative (GCE) in 2012.

GCE is a regional collaborative with membership that includes every municipality in Garfield County, Garfield County government, the Roaring Fork Transportation Authority, and Colorado Mountain College. Holy Cross Energy and Garfield County Libraries are affiliate members. The City of Rifle has been an active participant in GCE over the years. Garfield Clean Energy's vision is to be an innovative leader in advancing energy efficiency, renewable energy, and clean transportation to protect the environment and build a strong, resilient, and diverse economy. The collaborative provides services to Rifle and countywide.

PRIMARY INDUSTRIES AND WORKFORCE

Major employers in the Rifle area include healthcare, education, construction, and oil and gas development. Ranching and mining have historically been important parts of the economy in the Rifle region, as well as outdoor recreation. The City of Rifle and its partners recognize that renewable energy is a valuable opportunity for economic diversification. In 2005, the City Council adopted the Rifle Economic Opportunities Assessment, which included plans for a Rifle Energy Innovation Center.⁵ This facility would serve as a highly visible showcase for implementing economically viable alternative power sources, such as solar.

In one of the stakeholder workshops, participants were asked what they liked most about working in their specific job position. The question was intended for stakeholders to get to know each other, but also to help them identify what factors contribute to a high-quality job opportunity. Their responses were:

- Interactions with different customers, citizens, and groups
- Serving the community
- People who are willing to "roll up their sleeves"
- Variety and engagement

WHAT PEOPLE LOVE ABOUT RIFLE

Many residents are proud to call Rifle home and value a variety of aspects of the community. Both the ERAP stakeholder group and the public input survey featured questions around what people love about Rifle. Many common themes featured in both engagement processes.

Responses included:

- The small town, “Western Slope” feel that it is family-friendly
- A sense of community, connection, and support
- Residents are hard-working, forward-thinking, resourceful, and proactive
- Access to outdoor recreation: mountain biking and hiking trails, parks and open space, rivers and fishing, and hunting
- Local amenities such as community events, the Ute Theater, restaurants, and the downtown area



Some concerns and challenges were also mentioned in the public input survey, including homelessness and safety issues as well as the limited entertainment options, especially in winter.

Children also had an opportunity to answer the question: “What makes Rifle the best?” They colored their responses on a poster at a Hometown Holidays event where the consultant team tabled to gather community input.



Figure 3. Poster with input from children in Rifle, taken at Hometown Holidays



WHERE WE ARE NOW

THE DATA

- ❖ GREENHOUSE GAS EMISSIONS INVENTORY
- ❖ ANALYSIS OF CURRENT SOLAR PRODUCTION
- ❖ VULNERABILITY ASSESSMENT

THE DATA

The information provided in this section is essential to best understand where Rifle stands regarding the impacts of climate on the community. It also can inform the type of impacts that any climatic changes may have on Rifle's long-term resilience.⁶

Greenhouse gas emissions (GHG) inventory:

The inventory relies on utility, transportation, and waste data to develop an emissions baseline for the City. Using the U.S. Environmental Protection Agency (EPA) protocol, the result is a community-wide inventory, with secondary accounting for municipal emissions. The baseline year for the inventory is 2023. (Appendix B)

Solar production report:

This report reviews production data for the City's on-site solar PV systems.

Vulnerability assessment:

This assessment identifies how exposed Rifle is to the impacts of a changing climate – as a physical location, a community of people, and a governmental system. It uses demographic data (such as age, income, and health indicators) and climate data (such as temperature, extreme weather, and drought) to evaluate risks and Rifle's adaptive capacity to respond to risk. (Appendix C)

Image credit: CLEER

CLIMATE RESILIENCE

Is the capacity of a community, business, or natural environment to prevent, withstand, respond to, and recover from a disruption.

(NOAA, 2021)

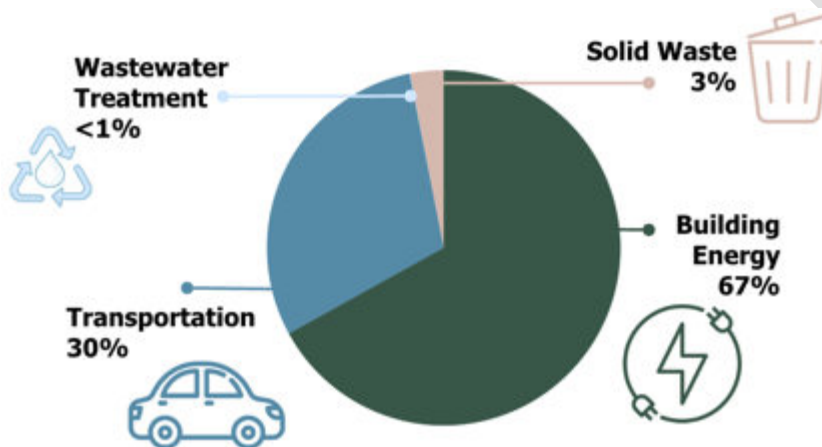


GREENHOUSE GAS EMISSIONS INVENTORY: A SUMMARY

The City of Rifle’s greenhouse gas emissions in 2023 totaled **76,209** metric tons of carbon dioxide equivalent (CO₂e). CO₂e is a measurement used to standardize emission calculations for greenhouse gases like methane (CH₄) and nitrous oxide (N₂O) by converting them to the equivalent amount of CO₂ that has the same warming effect. The majority of greenhouse gas emissions in Rifle come from energy use in buildings (67%) and from ground transportation (30%). Detailed data for the inventory are available in Appendix B.

WHAT ARE GREENHOUSE GASES AND WHERE DO THEY COME FROM?

Greenhouse gases are compounds in the Earth’s atmosphere that trap heat, helping to regulate the planet’s climate. While gases like CO₂ are the most widely known, others – including CH₄ and N₂O – also play major roles.⁷ Methane is over 28⁸ times more effective at trapping heat than CO₂. Greenhouse gases occur naturally, but human activities are increasing their emissions, amplifying the greenhouse effect and changing our climate.



The buildup of greenhouse gas emissions such as CO₂, CH₄, and N₂O is increasing the Earth’s average surface temperature, intensifying the greenhouse effect. This warming disrupts atmospheric circulation patterns and increases the frequency and severity of extreme weather events, prolongs droughts, creates powerful storms and severe floods, and can contribute to increased frequency of widespread wildfires. Climate impacts pose significant risks to ecosystems, public health, and critical infrastructure. See the Rifle Vulnerability Assessment in Appendix C for more details.

Figure 4. Rifle community-wide greenhouse gas emissions by source

RIFLE’S EMISSIONS IN PERSPECTIVE

Every year, humans emit around 40 billion metric tons of CO₂e worldwide.⁹ The Rifle 2023 GHG Inventory (covering the community, not just municipal operations) revealed emissions of around 76,209 metric tons of CO₂e. This could be compared to:

- **Cars:** Driving over 16,500 gas-powered cars on the road for 10,000 miles a year.
- **Flying:** Taking around 8,200 round-trip flights between New York City and London.

Alternatively,

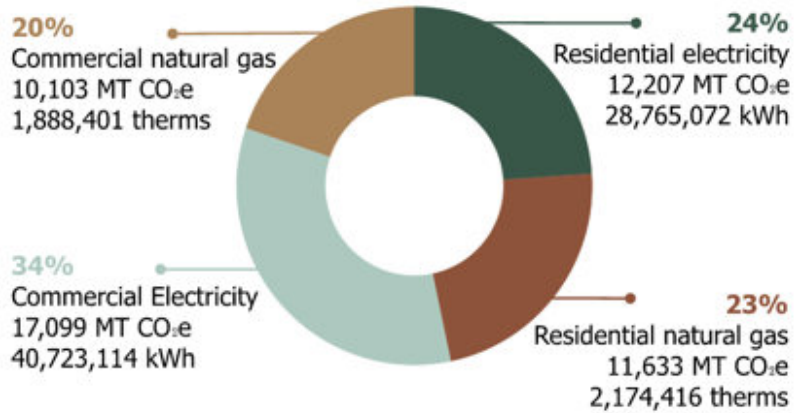
- **Planting trees:** Planting 1.25 million trees (grown for 10 years) can remove the same amount of emissions.



BUILT ENVIRONMENT: 67%

The buildings sector in Rifle contributed **51,042 metric tons of CO₂e** in 2023, or 67% of the City's total emissions. This is based on utility data collected from 3,800 residential and 870 commercial building accounts. Breaking down the data reveals the contributions from natural gas and electricity by customer type. *

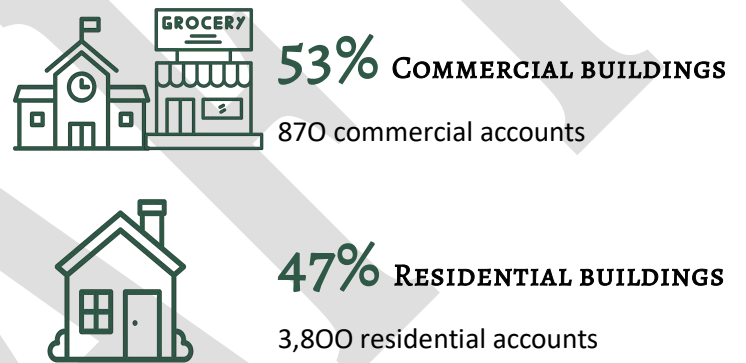
Figure 5. Community-wide building emissions for commercial and residential energy use by fuel source



BUILDING EMISSIONS

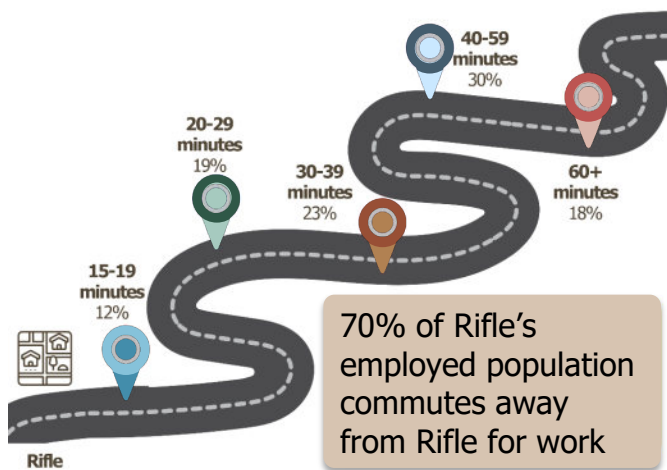
All buildings use energy. When calculating the emissions from buildings, the data are derived from the utilities through the electricity and natural gas used by all utility accounts. These are broken down by residential accounts (primarily single-family homes and apartments) and commercial accounts (which include government buildings, schools, and businesses).

Figure 6. Percentage of community-wide emissions for commercial and residential energy use and account totals



TRANSPORTATION: 30%

Rifle's transportation emissions totaled **22,807 metric tons of CO₂e** in 2023, or 30% of the City's overall emissions. However, these data should be considered cautiously, with an understanding of the specific limitations faced in the actual community context. The U.S. Community Protocol (USCP) methodology attributes vehicle emissions in the jurisdictions where the fuel is burned, and not necessarily where the vehicle originated.¹⁰ In Rifle, 70% of the employed population commutes outside the City for work, often for long distances. Greenhouse gas inventories in some neighboring communities have counted the emissions from vehicle trips that originate in Rifle. However, the emissions counted include only the vehicle's mileage while traveling through that jurisdiction and not the entirety of the trip. This means that most of Rifle's commuting-related emissions are counted elsewhere.



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Figure 8. Commuting residents and their travel times

* Note that the percentages displayed in the charts may not add up to 100 due to rounding

WASTE: 3%

Waste makes up the remaining 3% of Rifle’s emissions, at **2,360 metric tons of CO₂e**. This sector includes both wastewater treatment processes and solid waste.

Emissions from solid waste, or trash, are the bulk of the total at 2,324 metric tons of CO₂e. The total tonnage of solid waste hauled from Rifle was 4,295 tons. Of that amount, 718 tons (17%) was diverted to be recycled. This was slightly above the state average of 16%.

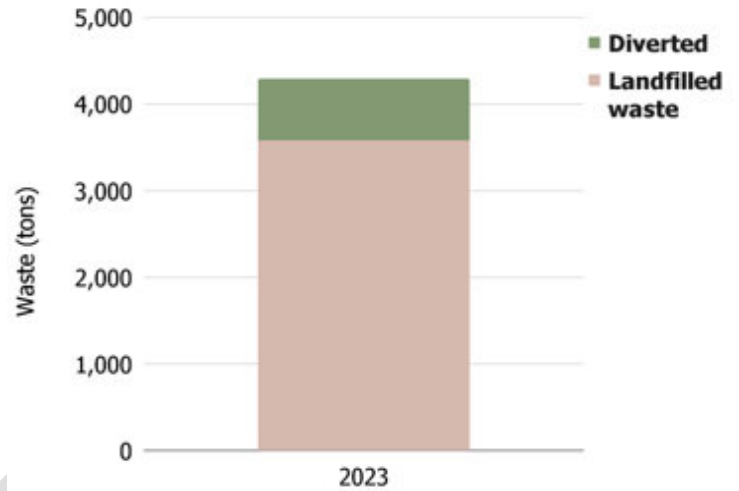


Figure 9. Waste disposed of in landfill versus the amount recycled

SUB-DATA: MUNICIPAL OPERATIONS

Collected data for Rifle included the City-owned buildings and facilities, vehicle fleet, and water and wastewater treatment facilities. To provide a more complete picture, these municipal operations data were analyzed in addition to the community-level data. In 2023, emissions from Rifle’s municipal operations totaled **1,190 metric tons of CO₂e**. This total is lower than in other similar communities for several reasons, including the large amount of locally-produced solar that provides electricity for municipal buildings.

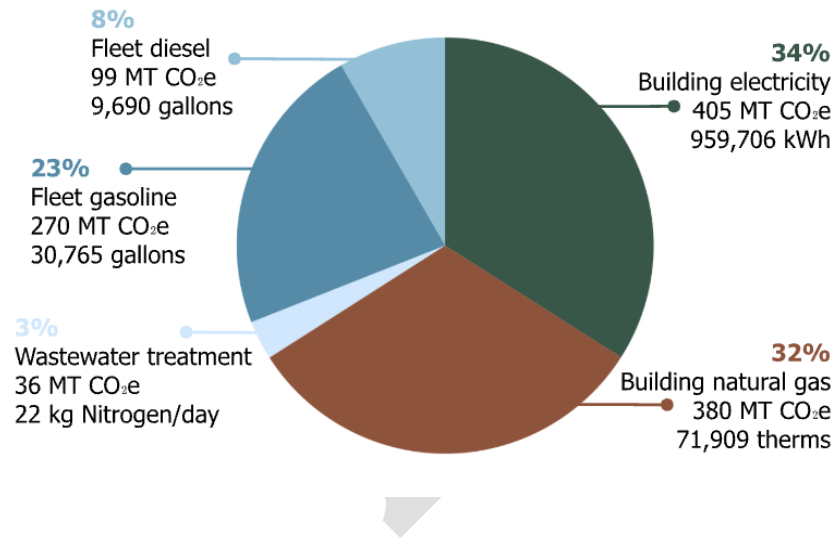


Figure 10. Emissions from Rifle municipal operations, by sector

RIFLE CITY GOVERNMENT

STATISTICS:

- ❖ 58 electric accounts and 12 natural gas accounts for buildings, water pumps, and streetlights
- ❖ 173 fleet vehicles
- ❖ 10 solar arrays at 9 locations

ANALYSIS OF CURRENT SOLAR PRODUCTION

Renewable energy plays a significant role in both supplying energy and reducing emissions in Rifle. Since 2008 the City has installed several solar arrays, through general fund obligations, grants and utilization of third-party financing and Power Purchase Agreements. On-site solar arrays enable local governments to reduce operational energy costs, enhance grid resilience through distributed generation, and achieve measurable emissions reductions. Power Purchase Agreements (PPAs) can provide the benefits of enabling the City to procure solar energy at a fixed rate over the long term, setting up stable energy pricing, improving energy budget forecasting, and accessing clean energy without significant upfront capital investment or TABOR restricted finance contracts.

The installed capacity of city-owned solar arrays is 2,775 kilowatts (kW) or 2.775 MW. The City's arrays produced over 3 million kilowatt hours (kWh) of electricity in 2023 and directly offset 57%, 1.7 million kWh, of the City's electricity use.

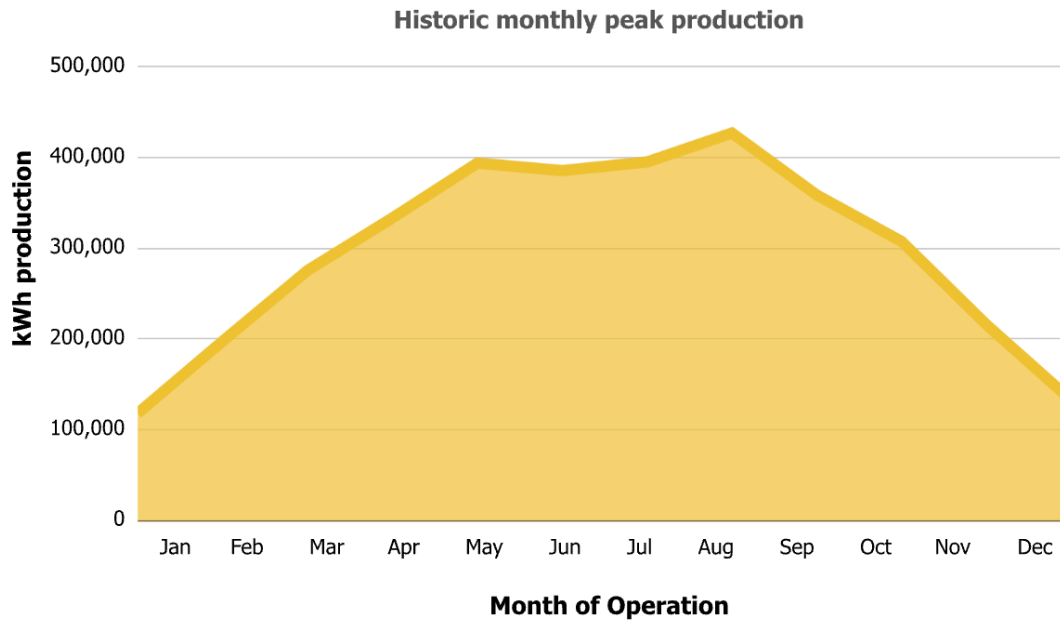


Figure 11. Historic monthly peak production for a one-year timeframe

If the City did not have solar, operational electricity emissions would be increased by nearly 700 metric tons of CO₂e, and electricity costs would be increased by hundreds of thousands of dollars annually.

In addition to the onsite solar arrays, eight municipal buildings are subscribed to "community solar programs" through solar providers in the Xcel Energy community solar program. This subscription represents 1.4 MWh, or around half the electricity demanded by City operations. Participation in the community solar program saves the City of Rifle around \$11,000 annually through credits on utility bills from Xcel Energy.

Figure 12. Rifle's solar array locations and sizes. A date range indicates multiple phases of installation and may include more than one array on site.

RIFLE ONSITE SOLAR		
LOCATION	SIZE (kW)	INTERCONNECTION DATE
Wastewater Treatment Plant	1,720	2009
Water Treatment Plant Station	600	2008
Police Department and Courthouse	140	2014
Parks and Maintenance building and Ball field	73.8	2010-2013
City Hall	140.5	2010-2013
Taughenbaugh Pump Station	42	2013
Operations and Maintenance Shop	34	2010-2014
Rifle South Water Pump Station	15	2013
Rifle Rosehill Cemetery	9.6	2013
Total solar capacity	2,775	



VULNERABILITY ASSESSMENT

BACKGROUND AND PURPOSE

The vulnerability assessment¹¹ is a key piece of the Energy and Resilience Action Plan (ERAP) to support future planning for the impacts of a changing climate on the Rifle community and municipal infrastructure. This section of the report is meant to provide a high-level summary on the history of and future changes to the climate in Rifle and its potential effect on the City's population, infrastructure, and services. To best enhance the community's resilience, populations are identified that may be more, or less, vulnerable to the impacts of extreme weather.

VULNERABILITY ASSESSMENTS

Are tools to help policymakers and communities identify where to prioritize climate resilience efforts and allocate resources.

ASSESSMENT STRUCTURE

- ❖ Climate history and projections
- ❖ Climate change impacts
 - Extreme heat
 - Precipitation and drought
 - Wildfire danger and smoke
- ❖ Vulnerable populations



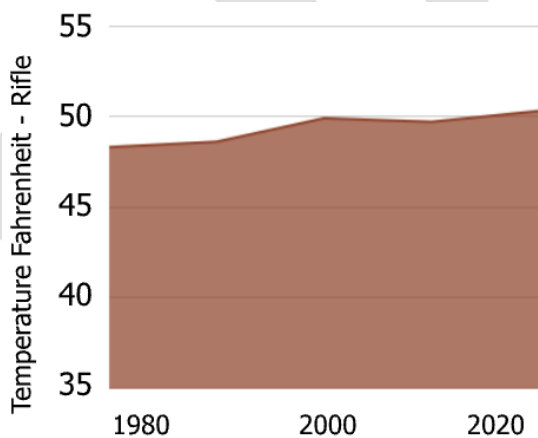
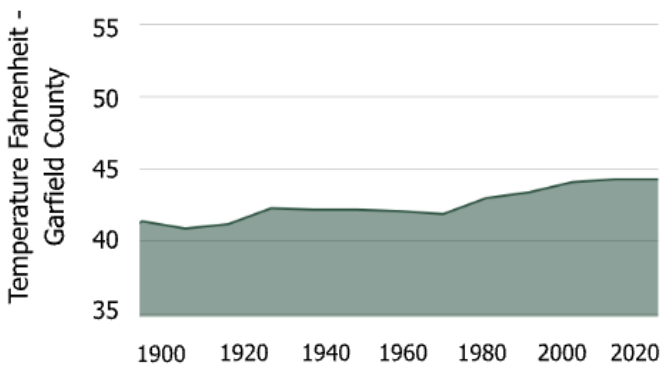
CLIMATE¹² HISTORY AND PROJECTIONS

Colorado is getting hotter and drier, with the effects already being felt in our communities, natural landscapes, and local economies. Since 1900, the state's average temperature has risen by around 2°F.¹³ This shift has created the conditions for more frequent and severe wildfires. Four of the five largest wildfires in state history occurred between 2018 and 2020 alone, and all of the top 20 largest wildfires have occurred since 2001.¹⁴ These fires are no longer limited to remote forests; events like the Grizzly Creek Fire in Garfield and Eagle counties, the Lake Christine Fire in Pitkin County, and the Marshall Fire in Boulder County show how growing communities now face greater wildfire risk, even in suburban areas.

CLIMATE

The long-term pattern of oceanic and atmospheric conditions at a location.

(NOAA, 2021)



Figures 13 and 14. Historical average temperatures for Garfield County, CO (1900-2020) and for the City of Rifle, CO (1980-2020)

Data sourced from [National Centers for Environmental Information](#), [USA Today](#), [National Weather Service](#), and the [Climate Explorer](#).

Colorado's natural resources are also under pressure. Hotter, drier weather weakens trees, making them more susceptible to pests and disease, which is leading to widespread tree loss across state forests. Native tree species are struggling to take root and survive in these new conditions, especially in their early growth stages. This means that the landscapes that regrow after wildfires may look and function very differently than those of today.

These changes are not just environmental, they're also economic. Outdoor recreation, tourism, farming, and forestry all depend on healthy land and reliable water. As conditions shift, communities across the state – urban and rural alike – are facing new challenges to safety, infrastructure, and local livelihoods.

Rifle, like much of Colorado, is increasingly experiencing wide variations in temperatures throughout the year. Dry conditions and wildfire damage also heighten flood risks. When soil is too dry to absorb water, and vegetation has burned away, heavy rain can quickly lead to dangerous runoff and flash flooding. These same conditions are contributing to earlier snowmelt¹⁵, lower reservoir levels, and reduced water availability affecting everything from agriculture to household water supply.¹⁶

Average temperatures in Rifle have increased by 1% each decade. Data available for Rifle start in the 1980s. This trend follows the same data available for Garfield County, which extend to the 1880s.

CLIMATE CHANGE

The long-term change in the average weather patterns that have come to define regional climates. Changes observed are driven by human activities and natural processes.

(NASA)

CLIMATE CHANGE IMPACTS¹⁷

Across the region, including in the City of Rifle, the main effects of climate change on people, infrastructure, and businesses include:

- Extreme heat
- Precipitation and drought
- Wildfire danger and smoke
- Severe weather and flooding

Each of these risks is described in the sections below.

EXTREME HEAT

Extreme high temperatures, considered to be consistent daily temperatures over 90°F, are projected to increase in the future. In Garfield County and Rifle, on average, the number of days above 95°F is expected to increase by over 400% from the 2020s to the 2080s. All climate models project warming, some more than others, so confidence in the trend is high.

EXTREME HIGH TEMPERATURES

High-temperature days: Increasing
Geography: Rifle

Effects: damage to roads and infrastructure/asphalt, steel expansion, increased water demand and use, reduced ability to do construction projects, increased risk of heat exhaustion and heat stroke

HEAT WAVES

Heat wave trends: Increasing
Geography: Garfield County

Effects: increased water demand and use, health impacts, dehydration, greater energy demand for cooling

Heat and cold waves are defined as the number of the average hottest, or coldest, four-day periods per year.¹⁸ In Rifle and the rest of Colorado, heat waves are generally becoming more frequent, and cold waves less frequent. The increase in heat waves can result in increased water demand and use, health impacts, dehydration, and greater energy demand for cooling.

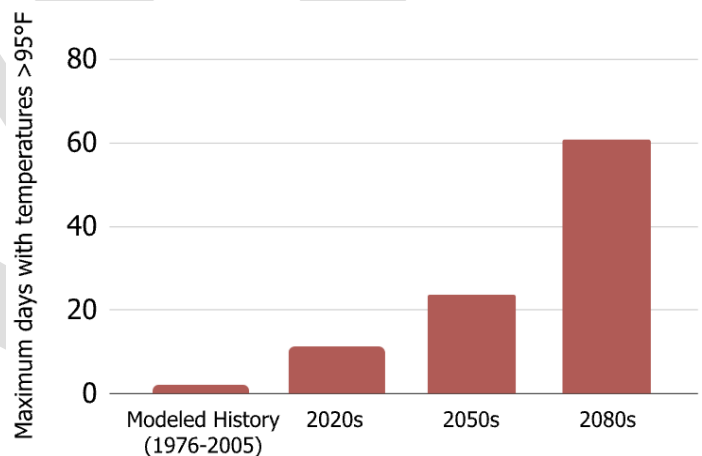
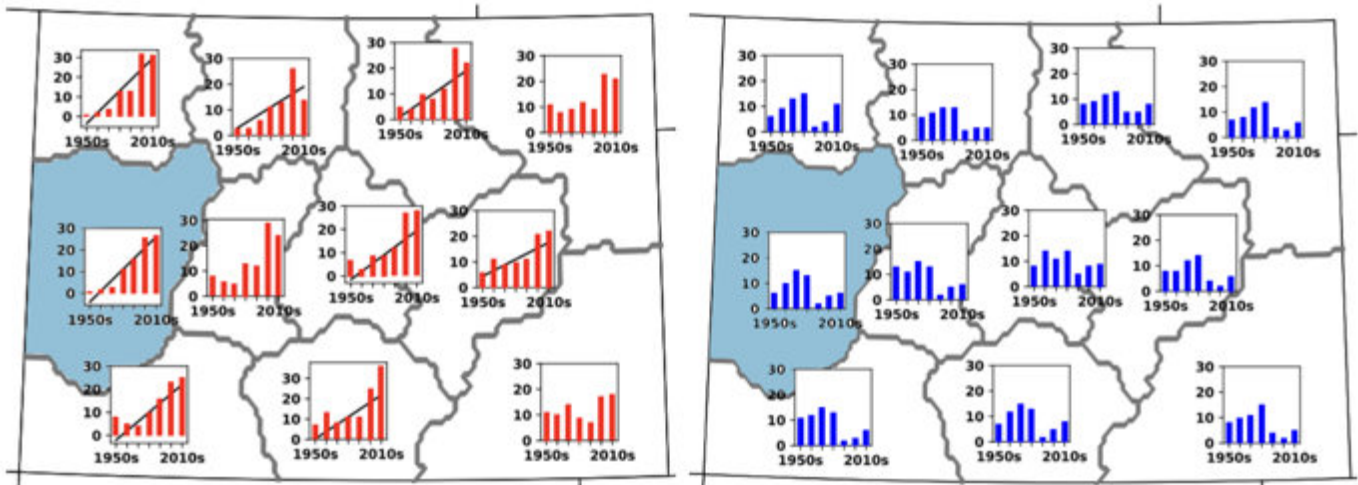


Figure 15. The projected maximum annual days with temperatures over 95°F in Rifle, Colorado for modeled history and projections into the end of the century

Data from [CMRA](#)

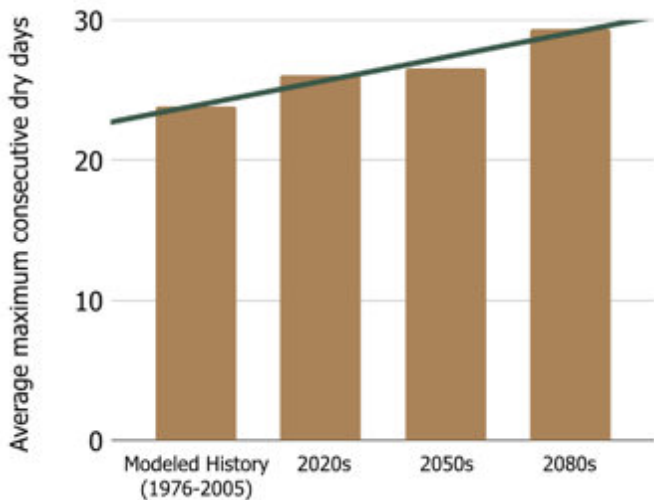


Figures 16 and 17. The historical trend (1950-2010s) in four-day heat and cold waves across Colorado, with the Rifle and Garfield County region highlighted in blue. Adapted from [Bolinger et al., 2023](#).

The Colorado Department of Public Health and Environment (CDPHE) showed that more than 500 people with heat-related illnesses passed through hospitals, with 13 deaths, in 2023.¹⁹ This does not include all the people treated outside of the hospital for heat exhaustion, heat stroke, and dehydration, among other issues. Stakeholders shared concerns about the impacts of cold temperatures and cold waves, which are commonly suffered by the unhoused, elderly, and minority populations.²⁰ Due to the variety of options available to support residents with cold weather issues, people suffering from home heating problems are urged to seek out programs for winter heating assistance. In Garfield County, these programs include [LEAP](#), [WAP](#), [CARE](#), and [ReEnergize](#).

PRECIPITATION AND DROUGHT

Rising average winter temperatures are leading to fewer frost-free days in the region and longer periods of warmer weather. In the mountains, this reduces the ability of the snowpack to build up during the colder months and causes it to melt earlier in the year. Warmer temperatures mean that more precipitation falls as rain rather than snow. As a result, water runs off quickly rather than being stored in the snowpack and released gradually as snowmelt. This faster runoff means less steady water availability for communities like Rifle later in the year.²¹



DRY PERIODS

Consecutive dry days: Increasing
Geography: Rifle

Effects: increased water demand, drier soils, increased occurrence of runoff, flash floods, or landslide with precipitation events, increased wildfire risk, increased demand on water treatment plants, property damage, disruption to commuting patterns, and supply line disruption

Figure 18. Rifle's maximum consecutive days with no precipitation for modeled history and projections to the end of the century (1976-2100). Data from [CMRA](#).

WILDFIRE DANGER AND SMOKE

Garfield County is at high risk for wildfires and smoke impacts, with increasing frequency and severity due to hotter, drier conditions.²² Wildfires produce smoke that can travel long distances, affecting areas far beyond the fire's location. As fire seasons lengthen and more people live near fire-prone areas, the risk will continue to rise. It is crucial for Rifle residents to have access to clean indoor air spaces to protect themselves from harmful smoke exposure, with further prevention measures outlined in the ERAP strategies and action steps. Note that while the Federal Emergency Management Agency (FEMA) classifies Rifle as "relatively low" risk, the regions of Garfield County surrounding Rifle are classified at higher risk. This has implications for Rifle, as wildfires in the region will affect Rifle, even if not in the immediate area.

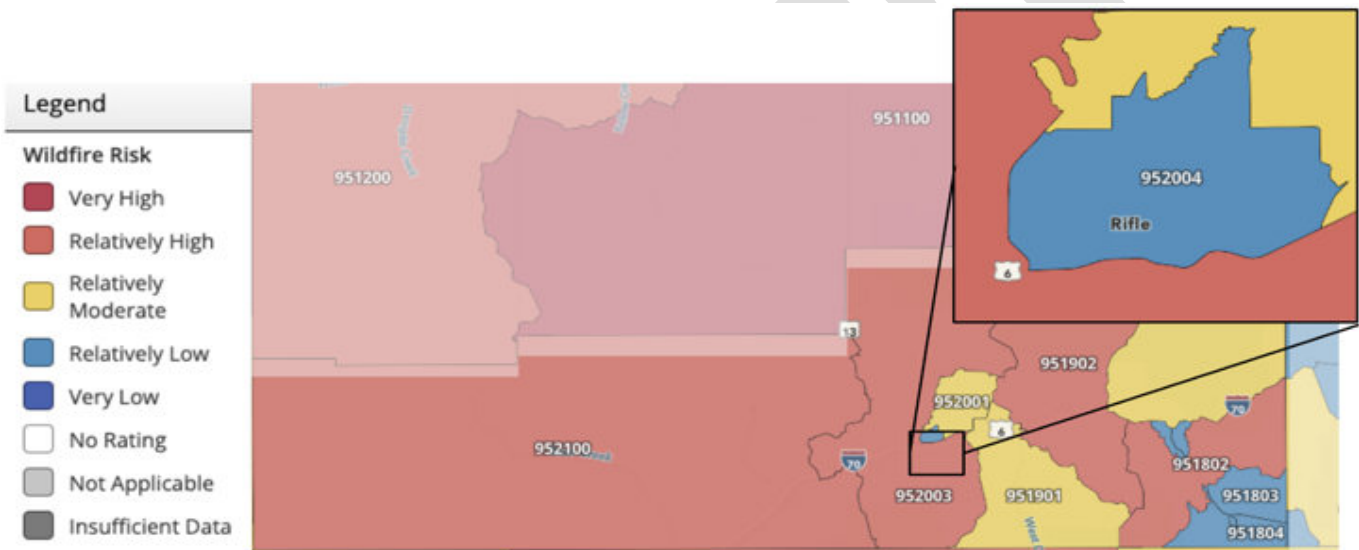


Figure 19. Wildfire risk index for Garfield County and Rifle. Data and image credit: [FEMA National Risk Index](#).

In addition to the physical impacts of wildfire, the increases in wildfire frequency across Colorado have contributed to spikes in home insurance rates. A recent study on the relationship between property insurance and disaster risk shows that homeowner insurance rates in the state have increased by around 60% on average in the last five years.²³ This contributes to the high cost of living in the Rifle region and can put economic strain on residents.

VULNERABLE POPULATIONS

All people face possible health effects from the impacts of climate change. Some people, however, face higher risks than others because of differences in the hazards they are exposed to, their sensitivity to these hazards, and their ability to adapt.²⁴

Children and the elderly are more vulnerable to the impacts of climate change because they tend to be physically more susceptible to illness and injury. Vulnerable populations also include certain communities of color and low-income groups, who face health disparities and lack resources to respond or recover; individuals with limited English proficiency or varying levels of education, who may encounter challenges before, during, and after climate events; and people with preexisting health conditions, who may experience worsened health outcomes.

VULNERABILITY TO CLIMATE STRESSORS AND THE SHARE OF RIFLE'S POPULATION AT RISK

The table below highlights the most vulnerable populations in Rifle as reported by the U.S. Census Bureau for 2022.

Figure 20. Rifle's vulnerable populations and their potential vulnerabilities to climate disasters as of 2022. Data from [U.S. Census Bureau](https://www.census.gov).

Population	Vulnerabilities	Heat	Drought	Smoke	% of Rifle Population
Children, <5 years old	Breathe more air and drink more water per body weight than adults; have developing organs and low immunity; are dependent on adults; spend more time outdoors	X	X	X	8.3%
Older adults, >64 years old	Low immunity; pre-existing conditions; limited mobility	X	X	X	9.4%
Low-income communities	Fewer resources and means to evacuate; inadequate infrastructure	X			5.3%
Living alone	May be less connected to information or community	X			4%
Immigrants (incl. limited English) (foreign-born)	Lesser English language abilities and cultural differences during evacuation; less access to post-disaster funding	X	X		13.8%
Disabled	Limited access to knowledge, resources, and services to effectively respond to environmental change; more vulnerable to extreme climate events or infectious diseases due to compromised health; more likely to have difficulties during evacuations	X	X	X	8.6%
Unemployment	Potential loss of employment following a disaster exacerbates the number of unemployed workers in a community, contributing to a slower recovery from the disaster.	X	X		3.2%
Outdoor workers	Exposure to high temperatures, air pollution, extreme weather and natural disasters, and biological hazards	X	X	X	9.4%
Persons with preexisting or chronic medical conditions	Climate stressors can increase respiratory and cardiovascular disease, injuries and premature deaths related to extreme weather events, increased exposure to food- and waterborne illnesses and other infectious diseases, and threats to mental health	X	X	X	8.5%
Pregnancy	Exposure to high temperatures or air pollution could increase the potential for babies to be premature, underweight or stillborn.	X	X	X	
Education, less than high school degree	Lower education constrains the ability to understand warning information and access to recovery information.	X		X	13.5%
Communities of color	Inadequate infrastructure Health disparities Lack of social capital	X	X	X	43.7%
Commuters	Travel away from the community May have delayed local emergency information May be impacted by disaster events that may not directly affect Rifle	X	X	X	71%

In the table, the only data that are not specific to Rifle is the share of the population pregnant at any one time. The methodology used to determine the potential risk considered the populations' exposure, sensitivity, and adaptive capacity²⁵ to climate stressors by reviewing access to cooling and air purification, the general ability to help oneself, and the potential for time spent outdoors.

Rifle residents generally have higher levels of education, stable employment, and access to healthcare and resources. However, when examining vulnerable populations, 30% of residents speak a language other than English at home, with nearly 13% of these individuals reporting limited proficiency in English. Almost 44% of Rifle's population identifies as part of a minority community. Rifle has a higher percentage of children under the age of 5 compared to the state average, and nearly 10% of the population is 65 or older.

Over 70% of the employed population commutes outside of Rifle for work (>15 minute drive).²⁶ These residents are vulnerable to climate through the impacts that can be seen from extreme weather events that cause damage to roadways, such as mud or landslides and fires that can prevent people from getting to or from their place of employment.

ACCESS TO AIR PURIFICATION AND COOLING

Access to permanent forms of cooling and air purification is a key necessity for residents of Rifle. Cooling can be provided through central air conditioning (AC), evaporative or swamp coolers, window units, and different types of heat pumps. While air filtration relief can come from other options, built-in or permanent air purification can only be achieved through AC, heat pumps, or specialized air filtration systems.

Type of cooling system in the home as assessed

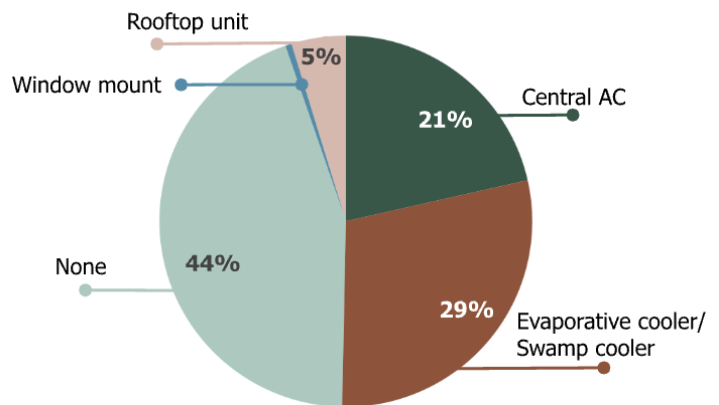


Figure 21. Rifle home percentages for types of cooling as recorded by the Garfield County Assessor

Rifle's housing stock was analyzed for types of cooling installed, using publicly available data from the Garfield County Assessor.²⁷ There is a margin of error with the data, as some cooling systems may not be recorded in the assessor's database. The data available showed that just over half of all homes in Rifle have some form of permanent cooling. However, only around 20% of homes have a cooling system that also purifies the air coming into the home, contributing to improved indoor air quality.

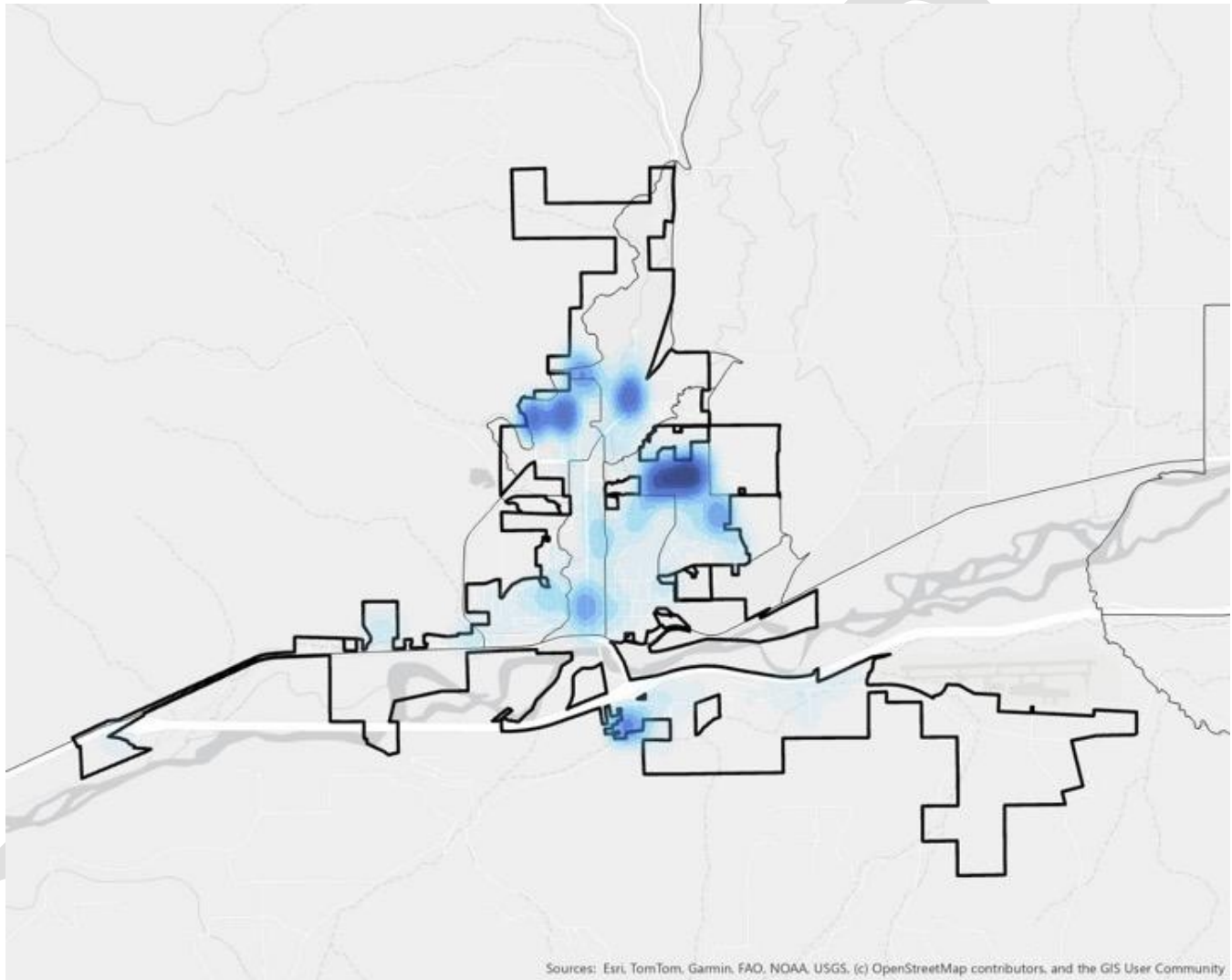


Figure 22. Image of locations in Rifle with central air conditioning. Darker blue is a higher concentration of AC installed in homes. Residential cooling data from Garfield County Assessor.



WHERE WE'RE HEADED

STRATEGIES FOR ENERGY AND RESILIENCE

❖ FOCUS AREAS

❖ STRATEGIES AND ACTION STEPS

- BUILT ENVIRONMENT
- TRANSPORTATION
- MUNICIPAL OPERATIONS
- ECONOMIC DEVELOPMENT
- OVERARCHING STRATEGIES

FOCUS AREAS

The City of Rifle, CLEER staff, stakeholders, and the public designed the strategies and action steps in this plan to optimally serve the community. The strategies and action steps are intended to be achievable and constructive and are designed to support the City's ability to make progress on energy and resilience action planning.

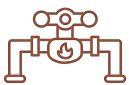
Four distinct focus areas are featured for the City's energy and resilience action planning effort. These were selected to group the City and the community's needs into useful categories that prioritize important sectors.



BUILT ENVIRONMENT: residential and commercial buildings and landscapes



TRANSPORTATION: alternative fuels, city fleets, multimodal transportation



MUNICIPAL OPERATIONS: solid waste, water and wastewater treatment, municipal facilities



ECONOMIC DEVELOPMENT: workforce, economic diversification, and training opportunities



STRATEGIES AND ACTION STEPS

The strategies and action steps are the heart of the energy and resilience action planning effort. They provide a pathway for the City of Rifle and its partners to benefit residents, businesses, and local governments – both now and into the future.

Each focus area has a list of strategies and action steps that build off those strategies. All focus areas include strategies that address both the energy and resilience components of this planning effort. Planning efforts use varying terms to describe the level of specificity of steps to achieve the plan’s larger goals. Here, these are described as:

- **Strategies:** broad, goal-oriented steps that the City and residents can take to reduce energy use, benefit the economy, and increase resilience.
- **Action steps:** steps for how to achieve the identified strategies; they are specific enough to be clear and actionable but typically broad enough to encompass a variety of methods to take action.

STRATEGY AND ACTION STEP DEVELOPMENT

A variety of tools were used to develop the strategies and action steps in the ERAP. City of Rifle staff recommended strategies that were valuable to the City and the broader community based on needs and projects that they had identified. Input from stakeholders and the general public was also incorporated through the methods described in the Community Context section of this plan.

Strategies were also developed based on a review of state, regional, and local plans.²⁷ The research team referenced federal and academic resources, in addition to strategies identified by other similar jurisdictions.

The reviewed plans include but are not limited to:

[Rifle Comprehensive Plan, 2019](#)

[Garfield County Hazard Mitigation Plan, 2022](#)

[Garfield Clean Energy: Energy Action Plan, 2023](#)

[Colorado Greenhouse Gas Emissions Reductions Roadmap 2.0, 2024](#)

Because this is a community-wide plan, the strategies and action steps include both what is within the City of Rifle’s purview as the lead entity for implementation, as well as measures that would be implemented by a collaborative partner. The strategies and action steps outlined in this section delineate these two categories for easy reference.

The blue boxes contain action steps that City staff determined are within the purview of the City of Rifle, as lead implementer.

Action steps that were determined to be collaborative actions are listed below the City’s steps in a smaller font. Collaborative steps are those that the city intends to work with others to move forward.

OPTIMIZING MITIGATION AND ADAPTATION STRATEGIES

The scope of this plan includes analysis and strategies for both mitigation and adaptation of climate change.

Mitigation: Mitigation²⁸ strategies are aimed at reducing the emissions of heat-trapping greenhouse gases into the atmosphere. These actions can bring significant benefits to the community by lowering energy costs, making buildings safer and more comfortable, reducing traffic, and diversifying the economy.

Adaptation: Adaptation²⁹ strategies are aimed at preparing for the effects that a warming climate will have on the community. Potential impacts from climate change on Rifle specifically are outlined in the Vulnerability Assessment and include increased wildfire frequency and intensity, heatwaves, and drought. Actions that the City of Rifle and other partners can take to protect residents, businesses, municipal operations, and the economy from these impacts are described in this section.

Some strategies that attempt to address either mitigation or adaptation can have negative impacts on the other. For example, increasing the prevalence of air conditioning in buildings is an adaptation strategy that helps people stay cool during extreme heat events. However, this can greatly increase energy use, hampering climate mitigation efforts. Installing heat pumps or other very energy efficient equipment for air conditioning in homes can help offset the increased energy use. Strategies that are beneficial for both mitigation and adaptation include water conservation and improved weatherization for homes. Figure 23 shows the relationship between these strategies.

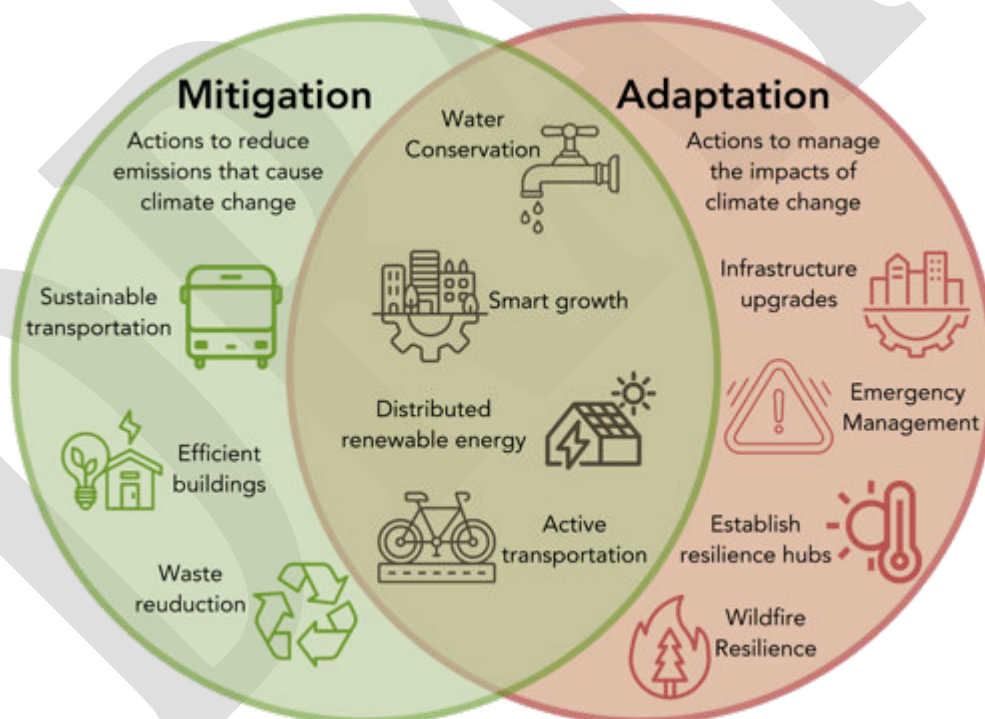


Figure 23. Venn diagram illustrating mitigation and adaptation strategies

BUILT ENVIRONMENT

Residential buildings
Commercial buildings
Landscapes



This focus area includes energy and resilience strategies for buildings and landscapes that are primarily private properties. Municipal buildings and landscapes are largely addressed in the municipal operations focus area.

Strategies and action steps for the built environment are aimed at improving energy efficiency, conserving water and land, and improving the resilience of community buildings and resources. Many of the strategies support reductions in the Rifle community's 51,042 metric tons of CO₂e emissions attributed to energy use in buildings.

City as lead implementer

Collaborative actions



BUILT ENVIRONMENT



STRATEGY

B 1

Improve energy efficiency and onsite energy production in buildings

ACTION STEPS

B 1.1

Grow Garfield Clean Energy's ReEnergize residential energy citywide rebate program to provide ongoing resources to the Rifle community, and help advertise it to more residents.

B 1.2

Prepare for potential new state requirements for energy codes and provide trainings on these for City staff and the local building community.³⁰

B 1.3

Explore opportunities for public or private development of thermal energy networks, ground-source heat pumps, and geothermal power generation.³¹

COLLABORATIVE ACTION STEPS

B 1.4

Work with the Colorado River Valley Chamber and the Colorado River Valley Economic Development Partnership to encourage walk-throughs and consultations of commercial properties to identify energy-saving measures and resources.

B 1.5

Promote utility bill tracking and energy management programs for commercial buildings, including Xcel Energy Empower Intelligence, ENERGY STAR Portfolio Manager or CLEER's Advanced Energy Management programs.

B 1.6

Educate commercial property owners on state benchmarking and building performance standards for buildings over 50,000 square feet.³²

B 1.7

Provide ongoing support and technical assistance to encourage energy-saving best practices in building design for new construction and remodeled buildings.

B 1.8

Expand communication, outreach, and incentives for existing energy efficiency programs and resources to encourage participation.

B 1.9

Work to increase the accessibility of solar power to Rifle residents and businesses.

BUILT ENVIRONMENT



STRATEGY

B 2

Reduce water use on properties in the community

ACTION STEPS

B 2.1

Collaborate with community groups to educate the public on the importance of tree canopies, and encourage tree planting. Share content on the City's website.

B 2.2

Provide educational materials on the use of WaterSense-rated plumbing fixtures and other household water conservation best practices.

B 2.3

Recommend the use of drought-tolerant plants or xeriscaping as part of water conservation, landscaping, and water waste ordinances. Work with partners and local retailers to provide educational materials.

B 2.4

Amend the City landscaping ordinance to include a drought-tolerant plant palette, encourage drip irrigation, and provide education about the options for turf alternatives.

B 2.5

Encourage upgrades and maintenance of irrigation systems, including the installation of rain sensors.

B 2.6

Pursue additional opportunities for raw water to serve as city irrigation and residential lawn watering, to reduce the energy load placed on the water treatment plant.

BUILT ENVIRONMENT



STRATEGY

B 3

Expand access to innovative heating, cooling, and air purification

ACTION STEPS

B 3.1

Explore opportunities for expansion of green infrastructure³³ on private property.

COLLABORATIVE ACTION STEPS

B 3.2

Encourage energy-efficient cooling, such as cold-climate mini-split heat pumps, by promoting financial incentives like rebates and tax credits.

B 3.3

Supply air purification units, including low-cost do-it-yourself units, to at-risk populations to reduce wildfire smoke exposure. Provide educational resources on air purification.

B 3.4

Explore the possible use of cooling towers³⁴ for residential, commercial, and public spaces.

STRATEGY

B 4

Utilize land use principles for conservation of energy and land

ACTION STEPS

B 4.1

Increase building density where appropriate in identified zone districts or as the City's comprehensive plan is updated.

B 4.2

Preserve natural landscapes, green spaces, and open space as appropriate.

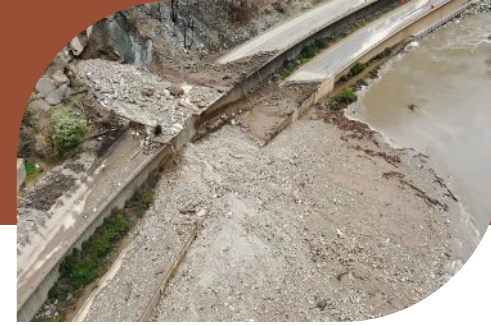
B 4.3

Utilize infill development where possible rather than expansion into new areas.

B 4.4

Evaluate the feasibility of becoming a certified local government (CLG) and establishing a building preservation program.

BUILT ENVIRONMENT



STRATEGY

B 5

Prepare community assets and infrastructure for extreme weather and natural disasters

ACTION STEPS

B 5.1

Identify potential sites to serve as resilience hubs based on criteria developed by state and federal agencies. This could include a new community center.

B 5.2

Install energy-efficient power backup systems through installing battery backup or upgrading to high-efficiency gas generators where battery backup is not an option.

B 5.3

Maintain up-to-date resources on the City's website that educate the public about local emergency response plans.

COLLABORATIVE ACTION STEPS

B 5.4

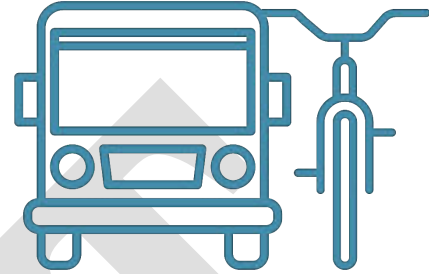
Promote local businesses interested in hosting customers during extreme heat and wildfire smoke events.

Image credit: [Post Independent](#)



TRANSPORTATION

Alternative fuels
City fleets
Multimodal transportation



The City of Rifle is continually working to improve biking, walking, and transit access in the City and surrounding areas. This focus area addresses strategies that improve the safety, quality, and connectivity of trails and transit. It also includes public electric vehicle (EV) charging infrastructure and access as well as improving traffic flows within the City.

A key transportation-related issue for Rifle is that many residents commute out of the City for jobs elsewhere. The economic development section of the ERAP contains strategies to expand the prevalence of well-paying jobs in Rifle to limit commute distances, which would reduce vehicle emissions and create more time for residents to engage in other activities in the community.

City as lead implementer

Collaborative actions



TRANSPORTATION



STRATEGY

T 1
Encourage biking and walking around the City

ACTION STEPS

T 1.1
Promote biking and walking infrastructure to connect new development areas to the rest of the City, and prioritize development in areas with existing multimodal³⁵ infrastructure.

T 1.2
Support opportunities to improve multimodal connectivity to business districts, downtown, and transit hubs. Include and identify ADA accessible routes.

T 1.3
Identify priority trail projects in Rifle plans and instigate construction of those projects. Seek grant funding and opportunities to incorporate bike and pedestrian trails into other capital projects.

T 1.4
Improve biking and walking safety infrastructure, adding lighting, wayfinding, and signage materials. Generate a map of the safe and friendly biking and walking routes.

T 1.5
Collaborate with local trail organizations including the Rifle Area Mountain Bike Organization (RAMBO) and the Lower Valley Trail Association (LOVA) to improve access to trails.

COLLABORATIVE ACTION STEPS

T 1.6
Evaluate the feasibility of operating a bike share program in Rifle.

T 1.7
Support increased access to bikes, including e-bikes and non-e-bikes, for all populations.

TRANSPORTATION



STRATEGY

ACTION STEPS

T 2
Enhance community-based transit options

T 2.1
Update the previous evaluation potential for microtransit, such as a circulator or "downtowner" to operate within the City, building off the Rifle-RFTA Circulator Feasibility Study.

T 2.2
Continue to collaborate with the Parachute Area Transit System and expand service as needed and feasible.

T 2.3
Collaborate with other Colorado River towns to work toward improved, ongoing, sufficient transit service to Rifle residents.

STRATEGY

ACTION STEPS

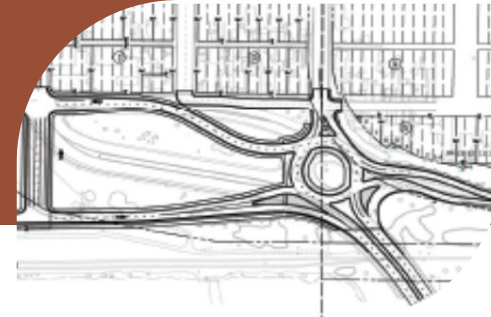
T 3
Reduce fuel use by City fleets

T 3.1
Upgrade city fleet vehicles to more fuel-efficient or electric models when they are due for replacement and where fiscally feasible. Apply to the Colorado Department of Public Health and Environment's Clean Fleet Vehicle and Technology Grant Program for funding toward fleet EVs, and Colorado Energy Office's Fleet Zero program for fleet EV charging, if relevant.

T 3.2
Ensure that fleet vehicles are properly maintained, including tire pressure.

T 3.3
Utilize "vehicle rightsizing," ensuring that the size of a vehicle corresponds appropriately with the tasks that it performs.





TRANSPORTATION

STRATEGY

T 4

Address impacts of extreme weather on transportation options

ACTION STEPS

T 4.1

Promote safe biking and walking practices that reduce exposure to wildfire smoke and extreme heat.

T 4.2

Identify and promote alternate evacuation and transportation routes during road closures, including county plans.

T 4.3

Request that RFTA install or upgrade shade structures at bus stops where applicable.

STRATEGY

T 5

Improve traffic flows within the City

ACTION STEPS

T 5.1

Encourage development to locate in Tier 1 areas of Rifle, as identified in the Comprehensive Plan and in the Transportation Master Plan.

T 5.2

Identify priority road and trail projects in the Capital Improvements Plan and instigate construction of those projects as feasible.

T 5.3

Ensure that new transportation projects reduce vehicle idle time and promote traffic efficiency.

STRATEGY

T 6

Support expanded access to electric vehicle charging

COLLABORATIVE ACTION STEPS

T 6.1

Encourage the development of low-voltage Level 2 charging sites downtown and along Railroad Ave.

T 6.2

Expand access to safety measures for EVs, charging infrastructure fires, and other related incidents.

T 6.3

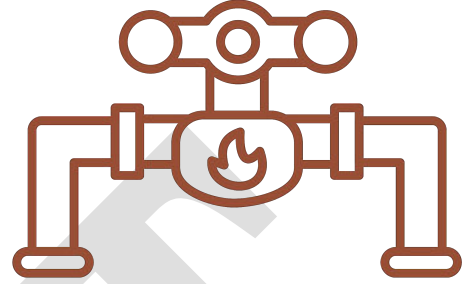
Encourage EV-ready building development, including at multi-family housing complexes.

T. 6.4

Work with partners to identify funding opportunities for EV charging within City limits.

MUNICIPAL OPERATIONS

Solid waste
Water and wastewater treatment
Municipal facilities



Strategies in this focus area address improving energy efficiency and water conservation for municipal properties. These include the water and wastewater treatment plants, which are major energy users, and other municipal buildings and parks. This focus area also includes strategies to maximize energy production from the City's extensive existing solar arrays, maintain and expand existing green spaces, and increase waste diversion from landfill.

City as lead implementer

Collaborative actions

MUNICIPAL OPERATIONS



STRATEGY

M 1

Reduce energy use in City facilities

ACTION STEPS

M 1.1

Actively use utility bill tracking and 15-minute interval data for priority municipal buildings to monitor and reduce energy use.

M 1.2

Promote an energy conservation culture among City staff, including participation in holiday shutdown energy savings events.

M 1.3

As part of the Comprehensive Improvement Plan process, upgrade building lighting to light controllers to help with lights being left on overnight. Review the potential for "smart plugs" to shut off items that do not need to run continuously.

M 1.4

Convert all non-LED lighting to LEDs in municipal buildings.

M 1.5

Incorporate energy efficiency and sustainability design principles in all new construction and upgrades to City facilities.

STRATEGY

M 2

Improve energy efficiency and resilience of water and wastewater treatment infrastructure and distribution

ACTION STEPS

M 2.1

Evaluate feasibility and funding options for heat recovery and effluent cooling systems from the wastewater treatment process to heat facilities, reduce energy use, and comply with potential state regulations.

M 2.2

Prioritize and install improvements for water purification facilities, water distribution systems, raw water improvements, wastewater reclamation facilities, and sanitary sewer collection systems as identified in the City's Utility Maintenance, Capital, and Rate Study.

M 2.3

Prepare for and install salinity removal processes if needed in the future.

MUNICIPAL OPERATIONS



STRATEGY

M 3

Optimize solar production on municipal properties

ACTION STEPS

M 3.1

Review power purchase agreement (PPA) contract renewal options.

M 3.2

Evaluate optimal solar acquisition options and discuss the rewrite of renewal contracts with the PPA providers, as suggested in the solar audit.

M 3.3

Develop revenue and maintenance plans for solar arrays acquired from the PPA providers, including determining if an outside company should be hired or if work should be done in-house.

M 3.4

Collaborate with the PPA providers to upgrade or install interval tracking devices to actively monitor production and losses. Where the PPA is not obligated to provide tracking, add or upgrade equipment to this end.

M 3.5

Work with the Colorado River Valley Chamber, Colorado River Valley Economic Development Partnership, and Garfield Clean Energy to develop and maintain a list of solar and clean energy contractors that is hosted on the City's website.

M 3.6

Assess the resources needed to purchase additional renewable and battery storage capacity to maintain 100% renewable energy for municipal operations. This could include micro-hydropower, wind, or other feasible options in addition to solar.

MUNICIPAL OPERATIONS



STRATEGY

M 4

Reduce water use on municipal properties

ACTION STEPS

M 4.1

Find and mitigate leaks in the water distribution system using methodical processes.

M 4.2

Fine-tune watering schedules to reduce the time and volume required for irrigation of City properties.

M 4.3

Utilize low-flow water fixtures in municipal buildings as replacement is required.

M 4.4

Construct xeriscape demonstration gardens on City-managed parks and green spaces.

M 4.5

Replace City irrigation systems with WaterSense drip-lines where feasible.

STRATEGY

M 5

Address risks of a warming climate to City facilities

ACTION STEPS

M 5.1

Ensure that city facilities have adequate HVAC systems in place for extreme weather events, including back-up generators as needed.

M 5.2

Update drought contingency plans for future water supply needs.

M 5.3

Identify and protect vulnerable municipal facilities identified in the Garfield County Hazard Risk Assessment.

MUNICIPAL OPERATIONS



STRATEGY

M 6

Implement green infrastructure and shade cover in sites throughout the City

ACTION STEPS

M 6.1

Perform a Tree Canopy study to identify key locations that could benefit from additional tree cover.

M 6.2

Continue to plant water-wise trees and landscaping on municipal properties, and preserve existing trees based on master plans, CDs, and recommendations from staff.

M 6.3

Shade City-owned parking lots as feasible.

M 6.4

Construct bioretention stormwater catchments, like rain gardens, where applicable.

M 6.5

Encourage light-colored and non-reflective roofs on buildings, especially those with little or no roof slope, to reduce heat absorption.

M 6.6

Encourage light or permeable paving, shade, green alleys, vegetation, and tree canopy.

COLLABORATIVE ACTION STEPS

M 6.7

Provide individual homeowners and businesses with information about how to correctly maintain green infrastructure design elements (e.g., rain gardens, vegetated swales, and other installations).

STRATEGY

M 7

Increase waste diversion and reduction rates within the City

ACTION STEPS

M 7.1

Create or expand educational programs to encourage proper recycling.

M 7.2

Work with local composting companies to expand their services in City limits, and educate the community on available resources.

ECONOMIC DEVELOPMENT

**Workforce
Economic diversification
Training opportunities**



As a growing and dynamic community, Rifle has an expanding economy with increased opportunities. Industries in the area historically were oil and gas development and agriculture, but the economy is diversifying. Many Rifle residents commute long distances for jobs in resort areas like Glenwood Springs, and often travel as far as Vail and Aspen. Partner organizations and the City are working to recruit high-paying jobs in Rifle that retain and attract residents. "Better jobs closer to home" is a mantra of the Colorado River Valley Economic Development Partnership and is repeated often when this topic is discussed.

Strategies for this focus area include clean energy job training, supporting local businesses, and strengthening partnerships. There are also action steps to protect the local workforce from the impacts of a changing climate.

City as lead implementer

Collaborative actions





ECONOMIC DEVELOPMENT

STRATEGY

E 1

Support community and private sector partnerships for economic development

ACTION STEPS

E 1.1

Collaborate with the Rifle Regional Airport to ensure that airport activities benefit the local Rifle economy.

E 1.2

Support the efforts of other local economic development organizations including the Colorado River Valley Economic Development Partnership, the Rifle Regional Economic Development Corporation, and the Colorado River Valley Chamber.

E 1.3

Work with the Educational Pathways to Innovative Careers (EPIC) and Board of Cooperative Educational Services (BOCES) programs to host training opportunities for Rifle High School students.

COLLABORATIVE ACTION STEPS

E 1.4

Evaluate the current potential for developing an Energy Innovation Center, and work to develop the Center if possible.

STRATEGY

E 2

Prioritize local production and small businesses

ACTION STEPS

E 2.1

Apply as appropriate for Department of Local Affairs (DOLA) and Federal Mineral Lease District (FMLD) funding for local business loans and grants.

COLLABORATIVE ACTION STEPS

E 2.2

Host events and promotions that encourage shopping at local businesses, such as a "shop local" campaign.

E 2.3

Promote opportunities for local manufacturing, such as solar panel recycling and other clean energy opportunities.

E 2.4

Strengthen local market capacity, including through a farmer's market or other regional resources.

E 2.5

Promote incentives for businesses to source goods from local providers.

ECONOMIC DEVELOPMENT



STRATEGY

E 3
Provide clean energy and energy efficiency training opportunities for the local workforce

COLLABORATIVE ACTION STEPS

- E 3.1
Encourage businesses to provide internships and apprenticeships for local high school and higher education students. Continue to offer City internships as well.
- E 3.2
Collaborate with partners, including Colorado Mountain College and Colorado Mesa University, on job training programs that meet local workforce needs.
- E 3.3
Host training programs for HVAC, architecture, development professionals, and other local workforce specialties on clean energy technologies and building codes.

STRATEGY

E 4
Invest in clean energy at homes and businesses

COLLABORATIVE ACTION STEPS

- E 4.1
Expand access to broadband internet in the Rifle community.
- E 4.2
Track and share funding opportunities that support the installation of clean energy projects at homes and businesses, prioritizing local contractors.
- E 4.3
Monitor funding as it becomes available to incentivize battery storage for residential and commercial solar.

STRATEGY

E 5
Support workforce health and safety during extreme weather events

COLLABORATIVE ACTION STEPS

- E 5.1
Provide educational resources to local employers on the risks of extreme heat to outdoor workers and how to prevent illness from heat exposure.
- E 5.2
Encourage scheduling of outdoor projects to avoid extreme heat exposure, both daily and annually, including for the private sector.
- E 5.3
Provide personal protective equipment (PPE) and modified schedules for outdoor workers during wildfire smoke events, including for the private sector.

OVERARCHING STRATEGIES



The Overarching strategies are a supplement to the extensive action steps for the four main focus areas. These strategies are meant to guide ERAP implementation efforts in a way that optimally benefits Rifle residents, businesses, and local governments. They also highlight the importance of working with existing partners to improve resilience and enhance the economy of Rifle.

Finally, the overarching strategies holistically acknowledge the unique outdoor recreation opportunities, demographics, and needs of Rifle.



OVERARCHING STRATEGIES



STRATEGY

0 1

Implement findings of the Energy and Resilience Action Plan (ERAP) to fit the unique needs and strengths of the community

ACTION STEPS

0 1.1

Develop a toolkit of best practices for implementation including funding resources, policy options, and public outreach.

0 1.2

Use the ERAP strategy matrix to prioritize action steps based on feasibility and benefit.

0 1.3

Provide education and outreach on water efficiency, tree canopy preservation, energy conservation, and other energy and resilience actions to encourage buy-in for future programs.

0 1.4

Include Spanish translations of energy and resilience outreach materials to reach the significant portion of Rifle residents that are primarily Spanish-speaking.

0 1.5

Strengthen the capacity of existing organizations such as Garfield Clean Energy to implement findings of the plan through expanding clean energy programs.

STRATEGY

0 2

Promote high quality of life in the community

ACTION STEPS

0 2.1

Expand access to rivers, creeks, and other recreational amenities in the Rifle area.

0 2.2

Promote a diverse economy that is focused on providing quality jobs that can be accessed by Rifle community members, focused on local needs and providing residents options to work, live, and play in Rifle.

0 2.3

Foster the development of high-quality, affordable housing options that encourage home ownership and resident retention

GLOSSARY

Adaptation	Actions that prepare a community to adjust to both the current and projected impacts of climate change.
Climate	The long-term pattern of oceanic and atmospheric conditions at a location.
Climate change	A long-term change in the average weather patterns that have come to define Earth's local, regional, and global climates. Changes observed in Earth's climate are driven by human activities and natural processes.
Cooling tower	A heat-removal device that uses water to transfer process waste heat into the atmosphere. It is a huge heat exchanger, expelling building heat into the atmosphere and returning colder water to the chiller. It functions similarly to an evaporative (swamp) cooler.
Exposure	Describes the nature and magnitude of an environmental stress event (e.g., extreme temperature, flood, drought). Exposure is usually quantified in terms of the probability that the event will affect people or a system, the event's duration, and its spatial magnitude.
Green infrastructure	As defined by the Clean Water Act ³⁶ , the term "green infrastructure" means the range of measures that use plant or soil systems, permeable pavement or other permeable surfaces or substrates, stormwater harvest and reuse, or landscaping to store, infiltrate, or evapotranspiration stormwater and reduce flows to sewer systems or to surface waters.
Greenhouse gases	Gases in Earth's atmosphere that trap heat. These gases let sunlight pass through the atmosphere, and they prevent the heat that the sunlight brings from leaving the atmosphere, which keeps the Earth warm. Greenhouse gases include carbon dioxide (CO ₂), methane (CH ₄), nitrous oxide (N ₂ O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF ₆), and water vapor (H ₂ O).
Mitigation	Efforts to prevent further climate warming by eliminating greenhouse gas emissions.
Multimodal transportation	An approach to transport that incorporates all the modes people use to get around. These may include automobiles, commuter railways, buses, bicycles, walking, and micro-mobility modes such as e-bikes and scooters.
Sensitivity	The socioeconomic or demographic characteristics (e.g., race or ethnicity, income and poverty status, educational level, linguistic barriers, type of housing, built environment characteristics) that can make people susceptible to the negative effects of an exposure.
Thermal energy networks	Systems that provide efficient and affordable clean energy heating and cooling to entire neighborhoods or groups of buildings through a shared network of water pipes that transfer heat in and out of buildings.
Vulnerability	The susceptibility to adverse effects of climate change, including both climate variability and extremes. Vulnerability measures the intersection of exposure, sensitivity to harm, and the capacity to adapt to change.

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