

# Greenlee County Resilience Action Plan

*October, 2023*



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Prepared by



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# Plan Overview

Freeport-McMoRan sponsored this Greenlee County Resilience Action Plan to help the community identify risks that could negatively impact residents and public and private operations. Interviews with community leaders, along with primary and sourced data, were used to identify and measure risks. Challenges were identified related to the economy, housing, civic engagement, and water availability & disaster response.

This plan outlines strategic actions to mitigate risks and enhance overall community resiliency. Each strategy includes specific actions and resources for project leads and partners to utilize to create a resilient future.

## Economy

Greenlee County's economy is overwhelmingly dependent on mining, making it vulnerable to industry fluctuations. Diversifying the economy beyond mining will help mitigate the impact of potential downturns in mining and ensure long-term stability.

Tourism is an economic development opportunity for Greenlee County, thanks to the natural beauty of the area. The county has the potential to attract visitors and support community resilience through the enhancement of regional outdoor assets, blight remediation, and increased amenities.

## 1 | Utilize Airport

A fixed-base operator would extend the range of services the airport can provide and enable leveraging the airport for economic development.

*Lead: Greenlee County Economic Development*

## 2 | Hotel Development

An extended stay hotel would serve as temporary lodging for mine contractors and support tourism.

*Lead: Greenlee County Economic Development*

## 3 | Main Street Development

A vibrant main street can bolster economic development by attracting new businesses, investments, residents, and tourists.

*Lead: Greenlee County Economic Development*

## Housing

Greenlee County's workforce housing shortage impacts business and community growth. Housing demand historically aligns with copper prices, making adaptable housing crucial. Investing in local amenities is essential for attracting new residents, which contributes to community sustainability.

Greenlee also struggles with blight, and the improvement of the local housing market depends in part on remediation of problem properties.

## 1 | Regional Housing Conference

A forum to explore innovative housing solutions and foster partnerships to create regional housing development strategies.

*Lead: SouthEastern Arizona Governments Organization*

## 2 | Blight Reduction

A Community Foundation is a sustainable model to rehabilitate problem properties and put them back on the housing market.

*Lead: Town of Duncan / Town of Clifton*

## Civic Engagement

Low civic engagement, evidenced by low census and voter participation rates and unfilled local elected positions, impact social cohesion. Increasing civic engagement would support efforts to address community needs.

## 1 | Greenlee County Symposium

An annual event to showcase local projects and provide an opportunity for local, regional, and state leaders to interface.

*Lead: Clifton Social Club*

## 2 | Encourage Civic Engagement

Volunteering promotional campaign and forum can facilitate increased community participation.

*Lead: Clifton Social Club*

## Water Availability & Disaster Response

Greenlee County's primary climate challenges are drought, wildfire, landslide, and riverine flooding. Drought poses threats to water resources vital for agriculture, industry, and daily life. Wildfire risks are exacerbated by long-term droughts, threatening lives and property.

### 1 | Tamarisk Removal

Tamarisks contribute to drought, wildfire, and flooding, impacting climate resilience. Support tamarisk removal and native vegetation restoration.

*Lead: Gila Watershed Partnership*

### 2 | Infrastructure Needs Assessments

A Water Infrastructure Needs Assessment would provide municipalities a prioritized list of projects and data to craft compelling funding requests.

*Lead: Town of Duncan / Town of Clifton*

### 3 | Flood Mitigation

Flood risk can be reduced through restoration of the ciénega for green infrastructure and construction of a FEMA accredited levee for disaster prevention.

*Lead: Greenlee County Planning & Zoning*

### 4 | Radio Communication

In a crisis, radio communication among first responders increases responder safety and efficiency.

*Lead: Greenlee County Health and Emergency Management*

# Risk Matrix

A variety of stakeholders were interviewed to learn what risks and challenges the County either currently has, or potentially could have, that negatively impact the community. A Mobilization Team representing a variety of community stakeholders provided input on how the compiled list of risks and challenges should be ranked on the following matrix, categorized according to the “Severity of Impact” and the community’s “Ability to Mitigate.” The risks in the red quadrant have the most severe consequences and are also most feasible to mitigate.

Ability to Mitigate	Severity of Impact			
	Low	Medium	Major	Catastrophic
High	Road Maintenance Transportation to Food & Medical Care	Road Safety Water & Wastewater Infrastructure	Disconnection from State Reps Lack of Civic Engagement Weak Radio Signal	Lack of Housing
Medium	Lack of Amenities Falling Rocks & Landslide Lack of Funding for Civic Organizations	Social Polarization* Wildfire Reliable Cell Connectivity	Lack of Diverse Tax Base Lack of Qualified Teachers (Duncan) Lack of Funding for Social Programs & Schools (Duncan) Invasive Tamarisks Flood Blight	Dependence on Mine Water Availability Mental & Behavioral Health
Low	Mine Dust Supply Chain Issues	Decline in Agriculture Businesses Unable to Match mine wages	Financing for Development Proximity of homes/ road to Switching Yard**	Pandemic Earthquake

\*Old vs new residents, town vs town.  
 \*\*Due to possibility of derailment.

# Addressed Risks

This Resilience Action Plan addresses the items in the red quadrant and selected items in the orange and blue quadrants. Recommendations were grouped into the following categories:

**Economy** – Recommendations to (1) leverage the municipal airport to enhance the County’s economy, (2) develop a hotel, and (3) revitalize Clifton and Duncan Main Streets to address the risks of: *Lack of Amenities, Lack of Diverse Tax Base, Dependence on Mine, and Decline in Agriculture.*

**Housing** – Recommendations to (1) host an annual regional housing summit, and (2) establish a Community Foundation to rehabilitate problem properties to address the risks of: *Lack of Housing, Blight, Lack of Qualified Teachers, and Financing for Development.*

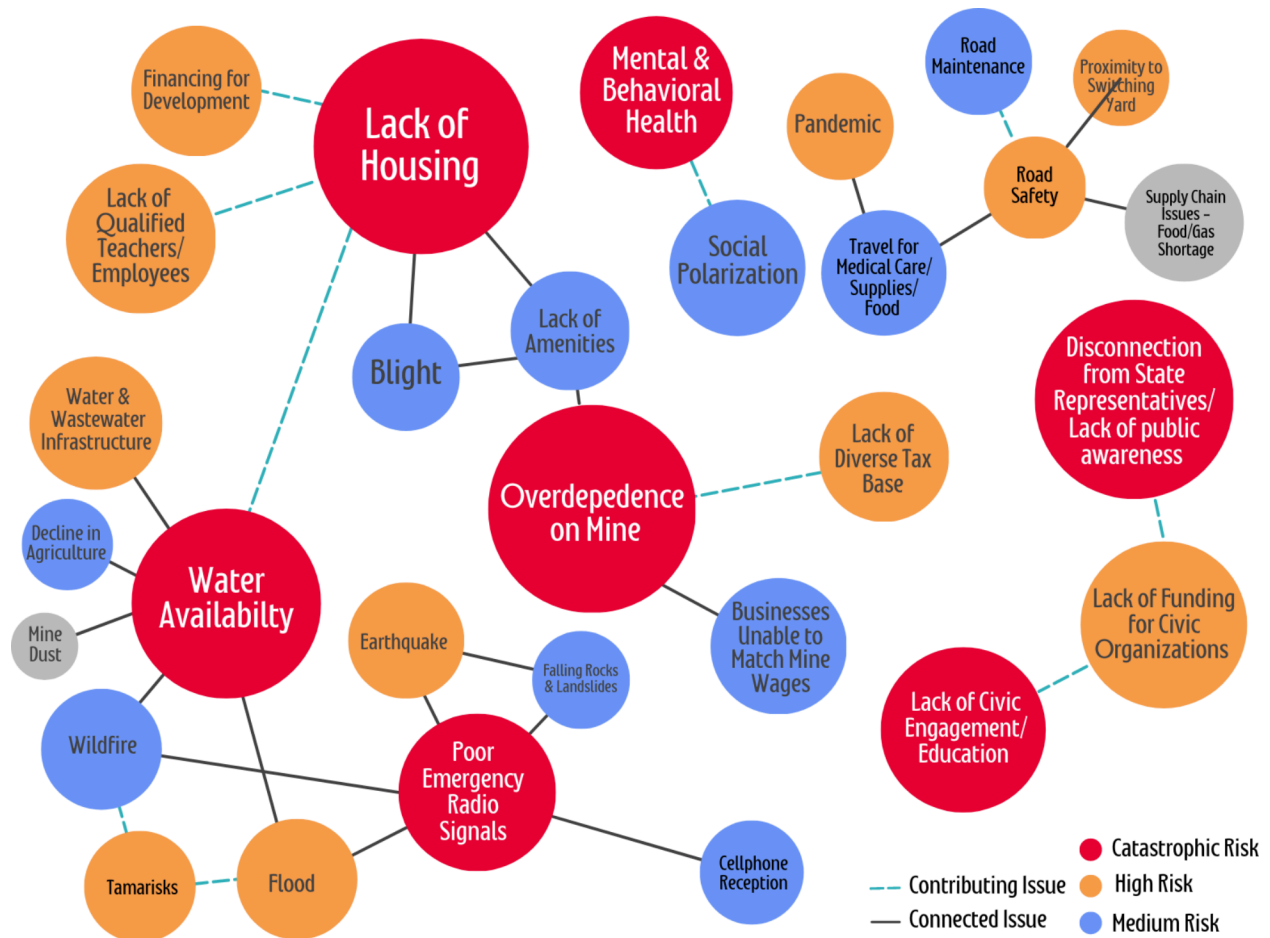
**Civic Engagement** – Recommendations to (1) host an annual symposium to showcase local projects and provide opportunity for local, regional, and state leaders to interface, and (2) promote volunteer opportunities to address the risks of: *Disconnection from State Reps, Lack of Civic Engagement, and Social Polarization.*

**Water Availability & Disaster Response** – Recommendations to (1) support removal of tamarisks and plant native vegetation, (2) conduct a water infrastructure needs assessment, (3) restore the ciénaga near the airport and update the Duncan levee, and (4) Compose a County Emergency Communications Plan to address the risks of: *Water & Wastewater Infrastructure, Invasive Tamarisks, Weak Radio Signal, Wildfire, Flood, and Water Availability.*

# Other Risks

No specific actions are recommended for some of the risks in the matrix, but many of these risks should be monitored and addressed as the more critical actions outlined in this document are completed.

Many of the risks faced by Greenlee County are interconnected, and efforts to mitigate one risk will likely positively impact other risks as well. For example, the recommendation to facilitate the removal of tamarisks to reduce the risk of wildfires and floods is addressed under climate—but may also have economic implications. The removal of tamarisks may help increase the appeal of river-based recreation; according to a report by [Audubon Arizona](#), Water-based outdoor recreation in Greenlee County currently generates \$49 million annually and supports 420 jobs.





# Plan Implementation

## Process for Implementation

Each of initiatives identified in this Action Plan are designed as stand-alone opportunities for Greenlee County to enhance its resilience. Each strategy lists a lead organization that is responsible for the implementation of that action item, along with suggested partners and resources. The following implementation process provides accountability and support for the leads in their efforts to accomplish the identified actions.

**Implementation Timeline:** Each lead organization is responsible for establishing a timeline to accomplish the sub-tasks associated with their initiatives.

*Defining the time-bounds for each action enables the lead organization to track progress and be accountable for implementation.*

**Report Progress:** The Freeport-McMoRan Social Performance and Townsite Manager will host regular meetings every-other month for leads to provide a brief report on their progress-to-date. The report template is provided in [Appendix II](#). Lead organizations should submit their report to the Freeport-McMoRan Strategic Community Development Manager one week prior to the meeting, and the compiled report packet will be emailed to the group in advance of the meeting.

*The report enables the lead organizations to regularly assess whether goals are met and what adjustments to the strategies may be needed.*

**Celebrate Achievements:** Lead organizations should post brief celebratory updates on their social media whenever a task is completed. Example template post verbiage is: "[Organization Name] is helping Greenlee County's [Overarching Topic] become more resilient. Recent progress includes [Specific Action Item]. Join us in creating a stronger and more resilient community for everyone! #ResilienceMatters #CommunityStrong #GreenleeCounty"

*Recognize and celebrate successes, both big and small, to maintain community motivation and enthusiasm.*

## Use of Implementation Grant

Freeport-McMoRan is providing a \$10,000 implementation grant to facilitate the implementation of this plan. The use of these funds is flexible and available to project leads to help facilitate their action items. Potential uses include (but are not limited to) hiring a grant writer to obtain further funding, promoting initiatives, and hiring consultants. Leads are also encouraged to use the Arizona Economic Resource Center to assist with project implementation capacity support and grant writing services.



# Economy



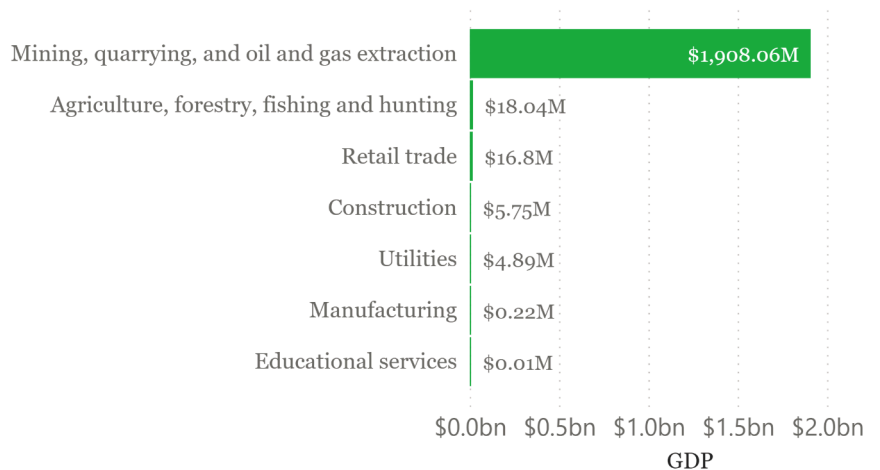
Picture: Freeport-McMoRan

A diverse local economy increases economic resilience and provides a more stable employment base. Pursuing opportunities to diversify the local economy will enable Greenlee County to adapt to changing economic conditions.

## Economic Reliance on the Mine

Greenlee County's economy is almost entirely structured around the mining industry, with approximately 90% of the county's gross domestic product and at least 70% of the county's total jobs coming from this industry. [Freeport-McMoRan's operations generated](#) \$285 million in economic benefits for Greenlee County in 2022. This includes \$245.4 million in direct impacts through wages, business taxes, and vendor purchases, and \$39.6 million in indirect impacts through spending from employees, tax revenues, pension income, and vendor purchases. Most residents live in the county because of a direct relationship with the industry, so virtually all the demand for local services (entertainment, recreation, and other goods and services) is driven by mining activities. The county's economy is inextricably linked to the activities of the mining industry and will remain so throughout the mine's life cycle.

GDP by Industry



When mining activities end, there will be a period of environmental mitigation and monitoring efforts that will provide some employment and income for the county's economy for several decades, but this will be a fraction of the county's current economic activity.

### Economic Diversification and Tourism

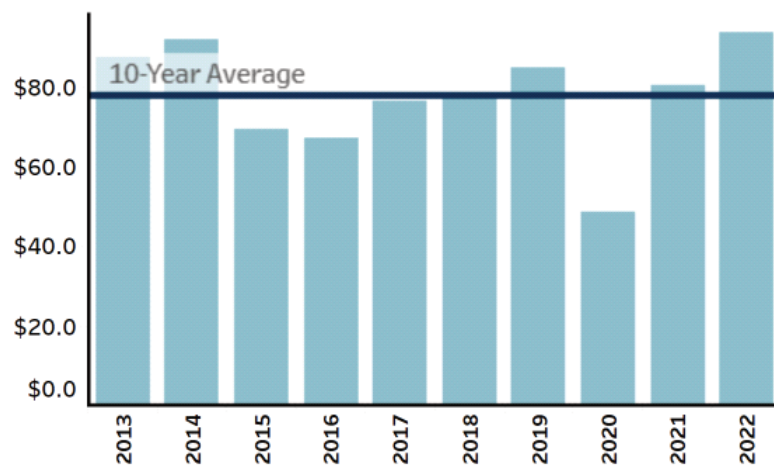
Given the natural beauty, remoteness, and unique downtown characters of Clifton and Duncan, one of the best opportunities for Greenlee County and its municipalities is to enhance the regional outdoor assets, historical attractions, storefront and building facades, and tourism business infrastructure. Many of the projects highlighted in this report play a dual role of supporting the development of the tourism industry, which will likely be a slow and multi-year process due to resource constraints at the local level. Recognizing the potential of day-trip visitation as an opportunity, developing the tourism cluster will be a critical industry for the communities in the future, fostering additional demand for local services and the ability to draw in outside funding to support the operational budget of the local governments.

Due to Greenlee's small population base, available visitation data for Greenlee is often combined with Graham County to produce regional tourism impact estimates. This makes it difficult to parse out the actual growth of the industry. However, a comparison of visitation numbers for each county provides an estimate that Graham County captures more than 90% of the region's visitors and an even larger share of the tourism spend that those visitors generate. Creating a way to capture some of that visitor spending within the county will be critical to Greenlee County's future.

Tourism has grown since the pandemic, reaching the highest levels of visitor spending the region has ever experienced in 2022 and exceeding the 10-year average.

Many efforts are already taking place in Greenlee County that will contribute to revitalization and resiliency, such as the San Francisco River Restoration Project and Duncan's infrastructure improvements. Continued efforts in these areas will lead to further resiliency in the Region and will promote a greater diversity of industries.

Graham/Greenlee Direct Travel Spending (Millions\$)



Source: Arizona Office of Tourism, TravelStats

## Economy Strategy 1

# Utilize Airport



**Objective** Leverage the municipal airport to enhance the county’s economy.

**Lead** Greenlee County Economic Development

**Partners** Greenlee County Airport, Graham County Airport

A [study of airports in midsized and smaller cities from 1950 to 2010](#) found that “the presence of airports in these communities contributed to an average of 3.9% growth in total employment (and 3.4% growth in population) per decade. Effects on wages and job creation in airport cities were also observed” and [Blonigen and Cristea \(2012\)](#) found significant relationships between air service and employment growth in service and trade-related industries.

Potential opportunities for leveraging the Greenlee County Airport, such as attracting aviation-related businesses, cargo operations, fly-over tours/increased tourism access, or establishing a distribution center or adjacent industrial park—are not currently viable because the airport does not have a fixed-base operator (FBO). An FBO caters to private and charter flights, and provides services such as fueling, hangaring, tie-down and parking, aircraft rentals, food and beverage services, and aircraft maintenance. By running their own FBO, the airport will be able to accommodate more flights and uses.

One potential business opportunity for Greenlee Airport is providing Boneyard Aircraft Storage. Aircraft at boneyards are either kept for storage with some maintenance or have their parts removed for reuse or resale and are then scrapped. Arizona is an ideal place for boneyard facilities, since the dry conditions reduce corrosion, and the hard ground does not need to be paved. Aircraft storage could provide additional income to the county with little workforce requirements.

## Action Steps

- Consider creating a Regional Airport Authority for both Graham and Greenlee airports. Evaluate pros and cons of having both airports managed by one entity.
- Identify desired FBO services and any other particulars desired to be provided by an FBO at the Greenlee County Airport.
- Hire one or two people at the airport to run an airport-owned FBO.
  - They would conduct maintenance.
  - They would need to always be available or on-call to provide fuel.
- Ensure the airport has needed fuel trucks and that employees are certified to provide fueling services.
- Make sure the airport is properly set up to accomplish business attraction goals by verifying that the airport is in good legal standing and has appropriate documentation governing the airport.
  - Graham County Airport recently went through the process to ensure they had up-to-date minimum operating standards, rules and regulations, rate and fee schedule set at fair market value for FAA regulation, and leasing policy. Collaborate with Graham County Airport for additional input on their process.
- Conduct ground density compaction testing on potential boneyard land around the airport to see if the ground is hard enough and has the correct drainage, or if it needs treatment before it can support aircraft.

## Resources

- [2023 Airport Improvement Program \(AIP\) Grants](#)
- [ADOT – Airport Capital Improvement Program](#)

## Economy Strategy 2

# Hotel Development



**Objective** Develop a hotel in Greenlee County.

**Lead** Greenlee County Economic Development

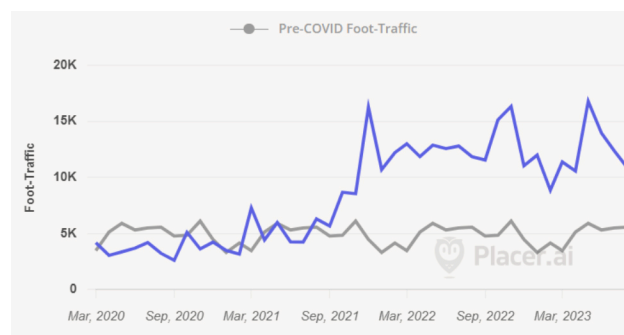
**Partners** Greenlee County Tourism Council

Tourism in Greenlee County has more than doubled over the past three years, from a [foot traffic count of 5.6K in August 2019](#) to [foot traffic of 10.9K in August 2023](#).

An extended stay hotel would be ideal for the county, as this accommodation type would provide lodging for contractors hired by the mine who need a temporary place to live in the county as they provide services. The hotel would also support tourism both in the present and after the mine eventually closes, as readily available accommodation provided by a hotel would offer tourists a comfortable and convenient place to stay, encouraging longer visits and repeat trips, attracting a broader range of visitors.

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Extended stay hotels showed greater resilience to disruption during the pandemic, when the hotel industry experienced a 35.7% decrease in demand and a 49.4% decrease in revenue in 2020. [Extended-stay hotels only had a 15.8% drop in demand and a 30.8% drop in revenue](#). All three extended stay hotel segments (economy, mid-price and upscale) reported [record-high room revenues in 2023](#).



## Action Steps

- Identify suitable locations for the extended stay hotel and ensure that the zoning regulations permit such developments. Work closely with local planning and zoning authorities to expedite the approval process, making the area attractive to potential investors.
- Work with local governments to identify if incentives and support are available for hotel development. This may include tax breaks or financial assistance for infrastructure improvements near the hotel site.
- Create an informational packet with market research to inform hotel developers about the county. Include information about local industries (especially the mine's use of contractors), information on current hotels in the county, tourist attractions, top 2-4 potential sites, and incentives.
- Reach out to hotel developers, chains, and investors who specialize in extended stay properties. Share the informational packet and invite them to tour the County.

## Resources

- [Arizona Office of Tourism Visitation Impact Estimates](#)
- [AOT – Visit Arizona Initiative Grants](#)
- [USDA – Rural Business Development Grants \(for feasibility study\)](#)
- [New Market Tax Credits](#)
- [IRS – Opportunity Zones](#)

## Economy Strategy 3

# Main Street Development



<b>Objective</b>	Revitalize Chase Creek Street in Clifton and Main Street in Duncan to improve appeal of area for residents, businesses, and visitors.
<b>Lead</b>	Greenlee County Economic Development
<b>Partners</b>	Greenlee County Tourism Council, Town of Clifton, Town of Duncan, Greenlee County Chamber of Commerce

A vibrant main street can bolster economic development by attracting new businesses, residents, and tourists. A vibrant main street fosters a sense of pride among residents and provides amenities to enhance their quality of life. Revitalizing Chase Creek St. in Clifton and Main St. in Duncan is crucial for economic growth and the overall quality of life for residents.

As stated in the Chase Creek Revitalization Plan “Clifton could be a living history museum of the old mining days. Chase Creek Street still looks much the same as it did in its heyday, when saloons and brothels lined its now boarded-up sidewalks.” There are 41 commercial buildings in the commercial sector of Chase Creek Street, of which about 75% are not currently open for business. 40% of those buildings are owned by people whose mailing address is further than 50 miles from Clifton. Without incentives for change, it is more attractive for these owners to let their properties sit without investing in renovations. The expense to repair and bring historic downtown buildings up to code often exceeds the value of those buildings. Rents are too low to generate significant capital to finance a major rehabilitation. With insufficient funding to fill the gap, banks are reluctant to extend loans to upgrade buildings. As a result, buildings are not maintained and Chase Creek slowly closed down. Over time, property values declined along with the local economy and several properties are now municipally owned. Clifton has rehabilitated buildings which are still vacant: a more sustainable solution is needed.



The Main Street America® program advocates for a four-point approach to revitalizing a downtown. The points include Organization, Design, Economic Vitality, and Promotion. While there are many activities to support each of these points, the following are some specific actions each town can take to jump-start the revitalization of their main street.

- **Organization: Main Street Task Force** – A group of residents, business and property owners, municipal staff, and partners will work together to plan, fund, and execute initiatives.
- **Design: Façade Program** – A façade program provides financial incentives, in the form of grants or low-interest loans, to encourage and support property owners or businesses to improve or restore the exteriors of their buildings to rejuvenate the appearance of the area, attract visitors, and boost economic activity.
- **Economic Vitality: Fill Buildings with Businesses** – A business incubator and/or pop-up arrangement with local property owners can help fill empty commercial spaces for short periods. This program enables businesses to set up shop with an affordable, short-term lease to allow businesses to test their concepts with lower financial risk while activating the area.
- **Promotion: Events** – Events catalyze visitation to main street. A recurring monthly, weekly, or annual event can help the area establish a new reputation as a place to visit regularly.

### Action Steps

- Recruit residents, property owners, town staff, and partners to participate in a Main Street Task Force. Schedule regular meetings, and as a group determine list of needed initiatives and timeline for planning and launching each.
- Establish a façade grant program to incentivize and enable property owners to update their facades to the design standards desired by the municipality.
- Recruit a chain restaurant that appeals to out-of-town contractors who work at the mine. (Chase Creek Revitalization Plan page 6.)
- Setup, in coordination with property owners, a program to offer flexible lease terms to accommodate temporary ventures—such as an incubator, pop-up, or vendor fairs. Pair with entrepreneurship support such as [DreamBuilder](#).
- Plan a “grand opening” to celebrate each newly revitalized property and new business opening on Main Street to create buzz and excitement.
- Plan and promote a recurring monthly or quarterly event on Main Street, working toward growing it to a weekly occurrence.

### Resources

- [USDA – Rural Innovation Stronger Economy](#)
- [EDA – Public Works and Economic Adjustment Assistance Programs](#)
- [EPA – Environmental Justice Grants, Funding and Technical Assistance](#)
- [RCAC – Loan Fund](#)
- [Community Development Block Grant](#)
- [ADEQ – Brownfields Program](#)
- [Main Street America – Funding Opportunities](#)
- [Energy Community Tax Credit Bonus](#)
- [Local First Microloan Fund](#)
- [Community Investment Corporation](#)



# Housing

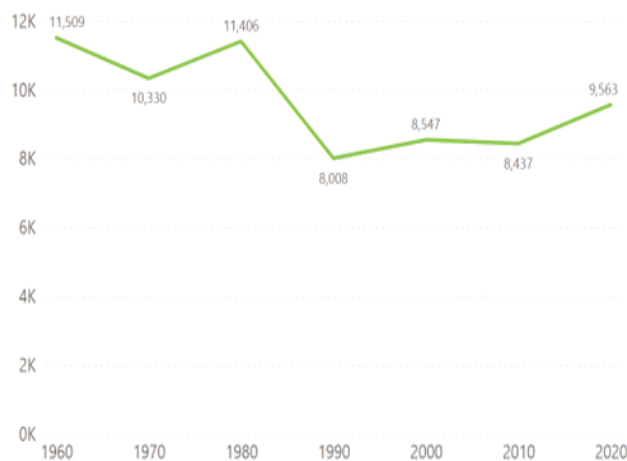


Employers in Greenlee County reported a high need for workforce housing in the two-county area, with multiple stakeholders claiming their efforts to expand are curtailed due to workforce availability. Potential hires cite an inability to find housing as the primary impediment that keeps them from accepting jobs. Limited housing stock deters many would-be employees from moving into the region.

Greenlee's County's housing market data is somewhat obscured by the company-owned housing provided by Freeport McMoRan, which owns approximately 1,600 homes in Morenci that are rented to employees at below-market rates. These homes represent around 36 percent of the county's total housing stock and make up an overwhelming majority of the county's rental units.

The mine uses a waitlist system for employees to rent available units, so many would-be home buyers decide not to purchase a home from the county's limited housing stock and get market-rent units temporarily until one of the mine's units becomes available.

## Housing Demand



Greenlee County's population has been inconsistent over time, with a population as high as 11.5 thousand in 1960 and as low as 8 thousand in 1990. The last several decades have been more stable, with a steadily rising population base.

Due to the variability of copper prices, there is likely to be continued volatility in the county’s population for the life of the mine. Until then, the demand for housing stock will be driven by copper prices and the industry’s response to those pricing signals. A key part of ensuring resilience in terms of the housing stock is to build unit types that can be occupied across the business cycle, such as structures that can be compartmentalized through movable partitions and sub-leased when demand for housing is high, then converted back and de-compartmentalized when demand is lower.

**Housing Supply**

The county experienced a limited number of sales in the past several years (with 55 single family and manufactured homes sales in 2022); therefore, much of the available data is highly determinant on individual property characteristics. The analysis of the available data shows that approximately half of Greenlee County’s housing units were constructed in the 60’s, 70’s, and 80’s, when the population was at its highest levels. The following drop in population over the next few decades, along with a consistent vacancy rate of 25-30 percent,\* will lead to deteriorating housing quality. This is justified by the county’s lower price per square foot estimates (with the average home selling approximately 30 percent lower per square foot in Greenlee County than the average home in Graham County). However, this trend is not guaranteed, with 2023 YTD home sales showing prices on par with Graham County. Improving the quality of the county’s housing stock will support current residents’ quality of life, attract new development and residents, and preserve generational wealth when the homes are sold in the future.

*\*Source: U.S. Census Bureau, American Community Survey. Tables B25034, B25004, and DP04. Data are for years 2017-2021.*

Year	Single Family		Manufactured/Modular	
	Median Home Price	Median Price per Square Foot	Median Home Price	Median Price per Square Foot
2022	\$118,500	\$108	\$157,065	\$108
2023 YTD	\$180,000	\$168	\$133,189	\$168
Change (%)	+52%	+55%	-15%	+55%

**Local Amenities**

The current draw for housing in the county is due to employment at the mine. As evidenced from the economic analysis, when the mine closes most of the current job opportunities will be lost, and a major portion of the county’s population will leave the area in search of other employment opportunities. The remaining residents will be retirees, municipal employees, teachers, agricultural workers, and a few support industry employees that will be able to weather the large population loss. The community must work now to build out amenities and quality of life assets so those who remain in the county can continue enjoying the community and so new residents can be drawn in who can fill the housing stock that will become available as the mine closes its operations.

# Housing Strategy 1

## Regional Housing Conference



### Objective

Host an Annual Regional Housing Conference to facilitate collaboration and problem solving among local and regional stakeholders.

### Lead

[SouthEastern Arizona Governments Organization](#)

### Partners

Local governments, [Urban Land Institute](#), developers, local real estate agents, lenders, potential investors, Freeport Land & Water Group, major employers, Arizona First, [Arizona Housing Coalition](#), Arizona State Land Department, USDA

## Regional Housing Conference

The purpose of a regional housing conference is to bring together key stakeholders, including local government officials, developers, housing advocates, and community members, to collaboratively address housing challenges and opportunities within Graham and Greenlee Counties. This conference would serve as a platform for discussing housing availability, exploring innovative housing solutions, and fostering partnerships that lead to the development of housing strategies tailored to the unique needs of the region.

The objectives of the conference include promoting collaboration, knowledge exchange, and collective action toward ensuring access to housing for all residents within the region.

### Action Steps

- Setup a committee to plan the Regional Housing Conference. Include representatives from each of the partners on the committee.
- Conduct followup to the 2019 Housing Feasibility Study, creating an addenda to fill in any gaps of information regarding infrastructure.
- Present and review findings from the housing needs assessment.
- Invite stakeholders to come to the conference prepared to present potential solutions to address regional housing needs.

- Invite developers to share what they see as the pros and cons of pursuing projects in Graham and Greenlee Counties.
- Facilitate discussion regarding potential solutions and what the partners can do to address housing needs:
  - Determine what types of units / structures would fill workforce needs, what is allowed based on zoning and land use plans, and what housing structure types are appropriate for each community.
  - Identify where new construction can be located.
  - Determine if any existing housing stock can be rehabilitated in the region.
  - Address impediments in zoning, planning, permitting, etc. that prevent new construction.
  - Identify strategies to add to the rental unit housing stock and alternative housing, such as accessory dwelling units, basement apartments, or creating a [Community Land Trust](#).
  - Identify strategies that enable major employers to directly support the development of new housing stock. Employers know what housing their workers need, including the size and price range most appropriate for their employees and the number of new homes needed. Potential example strategies include:
    - [Employers directly fund the development of homes that are sold at-cost to employees](#), adding to the housing stock without becoming landlords.
    - Partner with developers by guaranteeing to purchase a percentage of the homes built if they are not sold within a specified period after completion. This reduces the risk for developers to encourage them to develop in Graham and Greenlee. For small developers who build only a few homes per year, consider an agreement similar to the [LDS Sales Guarantee](#) (developers build and market each home in the usual way, but if the home does not sell on the open market the employer is committed to buy the completed home. If the homes are not all sold directly by the developer, then employers can then sell or lease these homes to their workers as best suits their needs).
- Identify policy changes and incentives that can stimulate the development of new housing stock in desired areas.
- Create ideas for master-planned communities that combine housing and amenities, such as retail, recreation, food, and entertainment.
- Determine best regional strategies to secure interest from developers and funding from FDICs, banks, [CDFIs](#), and other lending institutions.
- Form housing coalition to coordinate ongoing efforts to enact strategies identified through the housing conference and be primary lead for efforts to create housing.

## Resources

- [RCAC – Housing Development Support](#) (for nonprofit organizations to develop affordable housing)
- [USDA – Rural Housing Preservation Grant](#) (to assist low-income homeowners repair and rehabilitate homes)
- [USDA – Rural Community Development Initiative](#) (intermediary provides a program of financial and technical assistance to recipients to develop capacity for housing projects)

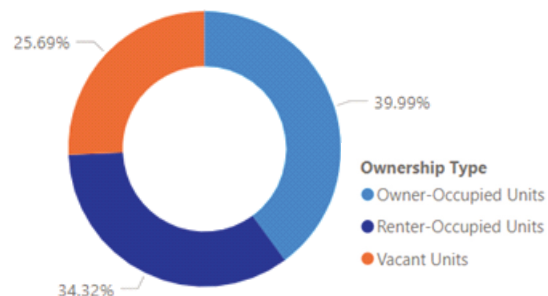
# Housing Strategy 2

## Blight Reduction



- Objective** Establish a Community Foundation to purchase homes, clean the title, then demolish or renovate to resell the property with a clean title.
- Lead** Town of Duncan / Town of Clifton
- Partners** [SouthEastern Arizona Governments Organization](#), Greenlee County

The 2017-2021 ACS estimates that 26% of the housing units in Greenlee County are vacant. When vacancy rates are at 20% or more an area is considered to have hypervacancy. “Hypervacancy is not merely the existence of large numbers of vacant properties; it is a condition in which vacant properties—either buildings or vacant lots or both—are so extensive and so concentrated that they define the character of the surrounding area. Hypervacancy indicates that market conditions have deteriorated to the point where properties that have become vacant are as likely or more likely to remain so and ultimately be abandoned rather than reused” (Mallach, 2018).



Vacant properties rob surrounding homes of their value. “In a 2001 study, researchers from Philadelphia found that proximity to a vacant or abandoned property experienced a net loss in value based on their distance from the abandoned property.

Properties within 150 to 300 feet experienced a loss of \$6,819 and those within 300 to 450 feet experienced a loss of \$3,542... all else being equal, houses on blocks with abandonment sold for \$6,715 less than houses on blocks with no abandonment” (Bass et al., 2005).

Not all vacant properties are a problem, as an empty but well-maintained house for sale where the owner is still paying the taxes and keeping the property in good repair is unlikely to negatively impact the neighborhood. Properties that are visibly abandoned and neglected, however, can undermine their neighbors' quality of life, diminish the value of nearby properties, impose fiscal burdens on the municipality, and pose public health and safety risks due to trespassers, deterioration, fires, pests, or asbestos.

The Town of Clifton implemented a [beautification abatement program](#) in 2019 to reduce blight. Problem properties were identified and categorized by the Code Enforcement Officer, property owners were contacted and given 30 days to make the necessary changes. As an incentive the Town offered to reimburse the property owner through a [matching grant](#) award for the first \$1,000 in expenses towards exterior home improvements. If the changes are not made the Town can move forward to do the abatement itself; including inspections by the Town's building inspector and a contracted engineer to categorize abatement needs and having work done either by the Clifton Public Works Department or a contractor.

A significant barrier to dealing with vacant housing is often the state of the title of the vacant house and the property on which it lies. If there are "[clouds on title](#)"—from a claim or encumbrance which affects or impairs the state of title that the owner has to a particular property (such as property inherited by multiple heirs, an improperly recorded deed, or liens); or if there are outstanding debts greater in value than the property is worth (such as multiple years of property tax debt or multiple mortgages), then it makes purchasing the property to rehabilitate it extremely difficult, putting the property in legal and market limbo.

If there are many properties that are in the legal and market limbo described above, Clifton and Duncan could establish a Community Foundation that would purchase homes and clean the title and remove outstanding debts, then demolish or renovate the homes to resell the property with a clean title. Proceeds from the sold properties are then cycled back into the project fund to purchase and renovate the next set of homes.

### Action Steps

- Inventory and prioritize problem properties in Duncan and Clifton.
- Setup a Community Foundation
- Hire a firm or secure internal resources to:
  - Analyze how many of the problem properties suffer from a clouded title and/or outstanding debts greater in value than the property.
  - Identify what legal tools are available to the Towns to acquire the properties and clean the titles.
  - Pursue grants to provide a Community Foundation with capital to purchase and renovate/demolish homes.

### Resources

- [ADOH – Community Development Block Grant Program](#)
- [RCAC – Loan Fund](#)
- [Community Development Block Grant](#)
- [USDOT – Thriving Communities Program](#)



# Civic Engagement



Community stakeholders reported that there is low civic engagement in Greenlee County. Indicators that a significant portion of the population are disengaged from the political process and decision-making include:

- Low participation in the decennial census, one of the lowest in the state. Census participation in Greenlee was only 38%, compared to the 54% participation in Graham and 65% participation in the U.S.
- Low voter registration and turnout. Out of the population ages 18+, in Greenlee, 67% are registered to vote and 36% voted in the last election, compared to the State of Arizona where 73% are registered to vote and 46% voted in the last election.
- Unfilled elected positions in local government. Duncan Town Council has an empty seat for one councilperson, as no one has stepped up to fill the role.

Community engagement bolsters resilience. When individuals participate in civic affairs, they become more invested in the well-being of their community. This involvement fosters a sense of unity, social cohesion, and trust among residents. When a crisis or challenge arises, such as natural disasters or economic downturns, these strong community bonds are critical. Engaged communities are better equipped to collectively address problems, share resources, and provide support to those in need. Moreover, community engagement enables residents to have a say in decision-making processes, ensuring that policies and initiatives align with the community's actual needs.



## Civic Engagement Strategy 1

# Greenlee County Symposium



<b>Objective</b>	Strengthen relationships with state and regional organizations at an annual symposium to showcase the county's key initiatives and issues.
<b>Lead</b>	Clifton Social Club
<b>Partners</b>	Greenlee County, Town of Duncan, Town of Clifton, Greenlee County Chamber of Commerce, Duncan Pride, Gila Watershed Partnership, Greenlee Tourism Association, Freeport McMoRan, United Way, Mares Bluff, American Legion, Art Depot

## Purpose of Symposium

The Greenlee County Symposium is a tool by which the county can enhance its ties with state and regional leaders to support the resilience and prosperity of the county. This event should be held annually, to invite state political leaders to visit Greenlee County and showcases of local projects, providing opportunity for local government, business and community leaders across the county to interface with each other and with the state and regional representatives, and build political support for community initiatives.

- Inform the state and region about the challenges the county faces.
- Ask the state and region for help addressing local challenges.
- Demonstrate competence and commitment to assure state and regional leaders that local leaders will follow through on proposed initiatives.
- Discuss funding opportunities and legislative needs and priorities.

## Recommended Core Topics

The symposium's topics should be revised each year according to relevant community

issues and opportunities. General topics to considering including are as follows:

- Proposed or existing legislation and state programs that impact the county
- Economic development and community development
- Education and workforce development
- Infrastructure and transportation
- Healthcare and public health
- Public safety, resilience, and emergency preparedness
- Environmental sustainability
- Collaboration and partnership between the communities and state agencies and regional organizations

## Recommended Participants

- SouthEastern Arizona Governments Organization
- Local First Arizona
- State legislators and representatives from state agencies that relate to symposium topics
- Federal and state funding agencies, such as USDA, EDA, DOT, etc.

## Action Steps

- Identify event sponsor(s).
- Set dates and schedule venue.
- Create an agenda and invite presenters.
- Send invitations.
- Host event.
- Follow-up on key topics and commitments.

## Resources

- [Arizona Republican Party](#)
- [Arizona Democratic Party](#)
- [Rita Allen Foundation](#)

## Civic Engagement Strategy 2

# Encourage Civic Engagement



### Objective

Conduct an awareness campaign and promote volunteer opportunities to community members.

### Lead

Clifton Social Club

### Partners

Greenlee County, Town of Duncan, Town of Clifton, Greenlee County Chamber of Commerce, Duncan Pride Society, Duncan Women's Club, Gila Watershed Partnership, Greenlee Tourism Association, Freeport McMoRan, High Schools, local religious organizations, United Way

Civic participation is how people participate in community life to improve conditions and shape the community's future. Participation in civic life takes many forms, such as volunteering, joining neighborhood groups, participating in the census, voting, donating to causes, helping neighbors and more.

Fostering a sense of belonging in the community can motivate individuals to become more actively involved in local affairs, ultimately leading to a more engaged and resilient county. A sense of belonging is shown to [positively influence voter turnout](#), which in turn empowers citizens to ensure government actions align with community interests—and is therefore a fundamental way to address local concerns and influence the future direction of the community.

Volunteerism—giving time, skills, and energy to a cause or an organization—benefits both the volunteers and the communities they serve and fosters a sense of belonging and a culture of social responsibility. However, not everyone may be aware of the value of volunteerism, or how to get involved in meaningful ways.

*“Never doubt that a small group of thoughtful, committed citizens can change the world; indeed, it's the only thing that ever has.” – Margaret Mead*

## Awareness Campaign

Volunteering appeals to many people, if they know that their time is spent on a good cause and is making an impact. An awareness campaign that encourages community members to volunteer more can catalyze civic engagement. The campaign should:

- Highlight the numerous benefits of volunteering, from [health](#), personal and professional [growth](#), to community [betterment](#).
- Raise awareness about pressing local needs and causes.
- Showcase the success stories and the tangible impacts of volunteer efforts to inspire individuals to step forward and contribute their time and skills.
- Include outreach and messaging designed to reach diverse demographics and age groups to help a broad spectrum of community members get involved.
- Promote the county's forum for posting and finding volunteer opportunities.

## Forum for Volunteer Opportunities

Providing a centralized platform for residents to contribute their time and skills to various causes and organizations enables the organizations that would benefit from volunteer support to connect with community members willing to volunteer—and enables community members to find ways to participate meaningfully in the community in a way that works for them.

Build community trust by providing clear and consistent [communication](#) through the forum. Ensure new opportunities are regularly posted, and information is easy to access.

This centralized forum could be a website, Facebook Group, Discord Server, or physical bulletin board—whatever best suits the preferences of potential volunteers.

- Postings of volunteer opportunities should include tags or labels based on the nature of the work, required skills, accessibility, and time commitment. Individuals can then quickly find opportunities that match their preferences and abilities.
- Specify the impact and importance of the volunteer role in the organization.
- Encourage those who are posting opportunities to make their volunteer program accessible to a diverse range of people by providing various opportunities for a range of abilities and availability.

## Role of Employers & High Schools

Creating a [culture of volunteerism](#) in the workplace may boost morale, workplace atmosphere, and brand perception. Survey findings reveal that millennials who frequently participate in workplace volunteer activities are more likely to be proud, loyal and satisfied employees—suggesting a link between volunteerism and several drivers of employee perceptions of positive [corporate culture](#).

The [UCLA Center for Health Policy Research](#) found that teen volunteering has an

impact on academic achievement, civic engagement, and health in youth and young adults. Teens with high levels of civic efficacy were more likely to say they are in “very good” or “excellent” health (79% compared to 49% who don’t volunteer), and they were less likely to miss school. Moreover, teens who participate in an organization that strives to make a difference are more likely to say they will attend college (72% who volunteer versus 50% who don’t).

Both employers and high schools can encourage employees and students to volunteer by:

- Promoting volunteer opportunities
- Hosting volunteer activities
- Publicly acknowledging employees/students who volunteer

### Action Steps

- Conduct community survey to identify what volunteer opportunities are of the most interest to community members. Seek ideas from community members on what should be done to improve the community, and what type of forum is most accessible.
- Coordinate with organizations that can utilize volunteers and compile a list of volunteer opportunities.

This resilience plan includes volunteer opportunities such as:

- Join the Main Street Task Force
- Assist with tamarisk removal and planting native vegetation for river restoration
- Assist with inventorying the problem properties in Duncan and Clifton

Other examples of community volunteer initiatives include:

- Town beautification projects, such as cleanup days or creation of a community mural
- Voter registration drives/election forums
- Community garden
- Senior care initiative
- Run community events, such as setting up festivals, farmers markets, parades, or fundraisers
- Create centralized forum for sharing and finding volunteer opportunities in Greenlee County.
- Conduct an awareness campaign on the importance of local civic engagement and volunteerism and establish a forum for communicating volunteer opportunities and actively promoting these opportunities to community members. Present at local schools to teach and provide students with opportunities to be civically engaged.
- Coordinate with local employers to host volunteer opportunities for their employees.

### Resources

- [Flinn-Brown Fellowship](#)
- [Points of Light Foundation](#)



# Water Availability & Disaster Response



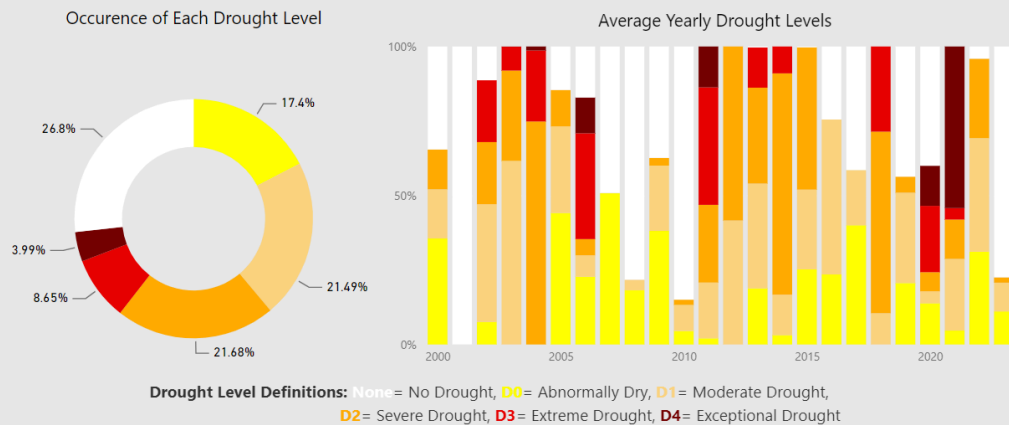
The climate plays a crucial role in Greenlee County's resilience. According to the [FEMA National Risk Index](#), the expected financial loss in Greenlee County each year due to natural hazards is highest for drought (\$220 thousand), wildfire (\$190 thousand), landslide (\$180 thousand), and riverine flooding (\$170 thousand). Community members identified drought, wildfire, and riverine flooding as pressing concerns for the county. Recognizing the interconnectedness of these climate-related risks is vital for building a resilient community that can effectively respond to and recover from natural disasters and severe weather that poses a threat to health, safety, property, and infrastructure. Natural disasters can occur seasonally or without warning, subjecting the community to periods of insecurity, disruption, and economic loss.

## Drought

Drought and limited water availability impacts water resources essential for agriculture, industry, and daily life. Water availability is important for sustaining ecosystems and the growth of businesses and the county's workforce.

Along with the rest of the world, Arizona is facing the effects of climate change. The southwestern United States is [particularly sensitive to changes in temperature](#) and is thus vulnerable to drought, as even a small decrease in water availability in this arid region can stress natural systems and further threaten water supplies. Temperatures in Arizona have risen about 2.5°F since the beginning of the 20th century. The most recent decade has been [the warmest period on record for the state](#).

## Drought in Greenlee County (2000 to 2023)



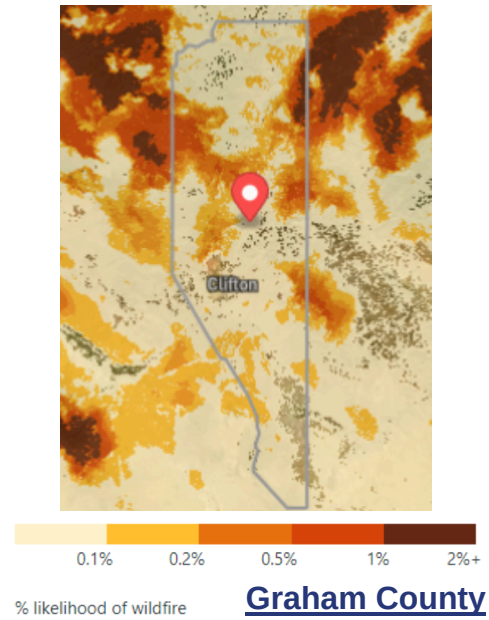
Arizona is currently in a long-term drought that has lasted more than 20 years. From 2000 to 2023, Greenlee County was [in a drought 73% of the time](#). Multi-year periods of high and low precipitation can cause significant variations in reservoir supplies. A variety of factors influence future water availability and demand in the county, including:

- Population Growth:** Greenlee’s population grew at an average rate of 0.50% annually between 2000 and 2021, increasing the demand and need for sustainable water supplies over this period. Available water supplies are important for new housing development. When a parcel of land in Greenlee County is subdivided into 5 or more lots, the Arizona Department of Water Resources requires an analysis to identify whether there is “Adequate Water Supply”— enough clean water to be legally and continuously available for 100 years. Housing may be built regardless of the report’s outcome, but building homes without adequate water supply impacts the community’s ability to add housing and increase the local workforce.
- Water Agreements & Water Rights:** [Greenlee County water supplies](#) are affected by complex state and federal laws, court orders, and water settlements, including the 1935 Globe Equity Decree, the San Carlos Apache Water Rights Settlements Act of 1992, Arizona Water Settlements Act of 2004, and the ongoing Gila River General Stream Adjudication. Legal proceedings continue to impact agricultural, industrial, and municipal water use within the county.
- Water Use:** [Water demand](#) in Greenlee County is split among agriculture (53%), mining (29%), municipal—including domestic and commercial— (10%), and livestock operations (8%). Water use associated with livestock involves growing feed, including hay and alfalfa, along with maintaining stock ponds. Water-efficient farming practices and sustainable irrigation techniques can contribute to reduced water use. In February 2021, legislators took steps to [improve producers’ ability to be land stewards](#) by making changes to the outdated “use it or lose it” policy—now farmers and ranchers can create a ten-year conservation plan that enables them to conserve water without losing water rights.

## Wildfire

The threat of wildfire requires preparedness to safeguard lives, property, and the natural environment. Long-term droughts—such as the drought in Greenlee—[raises the risk of wildfires](#). According to the [FEMA National Risk Index](#), there is a relatively low chance of wildfire in Greenlee County per year, at 0.27%.

[7 wildfires were recorded](#) near Greenlee County between 1984 and 2021. An estimated 3,534 properties in Greenlee County are at [risk of wildfire](#).



## Flood

Arizona’s monsoon season, with its predilection for sudden, torrential and localized rainfall, and a landscape with washes and gullies, makes perennial rivers—such as the Gila River—ripe for dangerous [flash floods](#). There are 786 properties in Greenlee County that have a greater than a 26% chance of being severely affected by [flooding over the next 30 years](#), representing 26% of all properties in Greenlee County.



Note, the [Justice40 Initiative](#) directs 40% of Federal investments in priority areas to [disadvantaged communities](#), which includes Greenlee County. Applicable Justice40 funding opportunities in the resource section are marked “[J40](#).”



## Climate Strategy 1

# Infrastructure Needs Assessment



**Objective** Create a water and wastewater infrastructure needs assessment.

**Lead** Town of Duncan / Town of Clifton

**Partners** Local First Arizona, Greenlee County

## Duncan's Water Infrastructure

The Town of Duncan's water and wastewater infrastructure has aged and needs substantial reinvestment to support community health and resilience. Current water and wastewater systems in Duncan are operating inefficiently and unreliably. Without infrastructure improvements, Duncan's vital water and wastewater infrastructure will break down. Leaders in Duncan reported an informal water infrastructure needs assessment is currently underway. A critical water meters project was completed, and now they are in the design phase to connect distribution lines.

The [Town of Duncan and Midstate Energy](#) have created a public/private partnership to upgrade the Town's aging water/wastewater infrastructure. System improvements will include decommissioning Hunter Wells to reduce pipe scaling, replace poly tanks with 100,000 bolted tank install hydro-pneumatic tank/pumps, SCADA system, AMR water meter system, water softener system, WWTP retro commission with recirculation pumps and bio curtain, new electric system with switch gear and control cabinets, and install a 100kW photovoltaic solar energy system. Midstate Energy will guarantee annual energy cost savings for 20 years to help fund this project.

Resources to enable the Town to develop a comprehensive water infrastructure plan would allow for proactive infrastructure management and project prioritization, ensuring

needs are addressed before they are critical. Such a plan would also enhance the Town's eligibility for grant funding from state and federal agencies, as these agencies often prioritize projects with comprehensive plans that show a needs assessments and preliminary engineering reports.

## **Clifton's Water Infrastructure**

Clifton's Water and Wastewater Treatment Plant (WWTP) is currently inoperable, and Clifton's raw sewage flows to an effluent pond and is then pumped to the Morenci Water and Wastewater Treatment Plant. Insufficient funding has stymied attempts to develop plans to fix or replace the aging infrastructure. It was estimated that that it could cost upwards of \$9M to replace the wastewater collection system before the pandemic—and the inflation rates have increased costs of construction labor and materials an estimated 4 to 6 times the original estimate.

Rehabilitating the existing WWTP is the best alternative identified to solve the Town of Clifton's wastewater treatment problems, as the costs associated with the rehabilitation is currently estimated to be under the 50% threshold, which would require the Town to meet only the 100-year flood requirement. To determine if rehabilitating the existing WWTP is a viable alternative, the sewage solids need to be removed from the digester compartment to allow inspection of the clarigester tank. The cost to remove the solids and clean the digester compartment for structural inspection is approximately \$200,000. (Regardless of the condition of the digester compartment walls the solids will need to be removed, so funds spent on the solids removal will be well utilized.)

A new comprehensive plan for Clifton's Water and Wastewater Treatment system would give the town accurate information regarding needs, priorities, and costs to apply for federal and state funding for critical town infrastructure.

## **Value of Water Infrastructure Planning**

The purpose of a Water Infrastructure Needs Assessment is to comprehensively analyze the needed water infrastructure improvements and outline strategies to develop and maintain the community's water-related assets. This study addresses crucial aspects such as water supply, treatment, distribution, wastewater management, conservation, and emergency response mechanisms—supporting public health and safety and economic growth, environmental protection, and overall community well-being. Plans should include both a needs assessment and preliminary engineering reports.

As Arizona's least populous county, Greenlee County lacks a large population base useful for water planning. Groundwater-dependent communities in rural areas face challenges with few capital and personnel resources to develop new supplies. A Water Infrastructure Needs Assessment will provide Clifton and Duncan a prioritized list of projects, and provide the data and framework needed to craft compelling funding requests to seek additional assistance in developing new infrastructure.

## Action Steps

- Gather data on water sources, supply, and quality. Analyze historical water usage patterns and trends. Assess the adequacy of current water sources to meet future demand, accounting for population growth. Assess the potential impacts of climate change on water resources.
- Evaluate the condition and capacity of existing water infrastructure, including pipes, treatment plants, and distribution systems. Identify critical infrastructure needs, such as pipeline replacement or expansion, treatment plant upgrades, and reservoir construction. Project future infrastructure needs based on age of existing infrastructure.
- Prioritize projects based on their urgency and potential impact on water supply and quality.
- Estimate the costs associated with addressing infrastructure needs and meeting the water plan's objectives. Explore funding options, including grants, loans, bonds, rate adjustments, and public-private partnerships.
- Compile all findings, assessments, and recommendations into a comprehensive water plan document. Include a timeline for implementing infrastructure projects and achieving water management goals.

## Resources

- [RiversEdge West Resource Library](#)
- [Landscape Scale Restoration Competitive Grant Program](#)
- [Arizona Water Protection Fund](#)
- [Water & Waste Disposal Grants to Alleviate Health Risks on Tribal Lands and Colonias in Arizona](#)
- [EPA – Clean Water State Revolving Fund](#)
- [EPA – Water Infrastructure and Resiliency Finance Center](#)
- [EPA – Compendium of Drinking Water and Wastewater Customer Assistance Programs](#)
- [EPA – Financial Technical Assistance and Tools for Water Infrastructure](#)
- [EPA – Climate Resilience Evaluation and Awareness Tool Risk Assessment Application for Water Utilities](#)
- [USDA – Water & Waste Disposal Technical Assistance & Training Grants](#)
- [USDA – Water & Waste Disposal Predevelopment Planning Grants](#)
- [USDA – Water & Waste Disposal Loan & Grant Program](#)
- [USDA – Water and Waste Facility Loans and Grants to Alleviate Health Risks for Colonias](#)
- [USDA – Solid Waste Management Grants](#)
- [USDA – Special Evaluation Assistance for Rural Communities and Households Grant](#)
- [USDA – Revolving Funds for Financing Water and Wastewater Projects](#)

Picture: Derell Licht

## Climate Strategy 2

# Tamarisk Removal



<b>Objective</b>	Enable property owners, via education and resources, to remove invasive tamarisks and plant native vegetation.
<b>Lead</b>	Gila Watershed Partnership
<b>Partners</b>	Greenlee Tourism Council, Duncan High School Land Lab, Greenlee County, Greenlee County Noxious Weeds Control Program, USDA Safford Service Center

## River Restoration

Restoring natural riverine ecosystems can mitigate the impacts of climate change and prevent floods. Healthy river systems can:

- Absorb excess rainfall, reducing the risk of flooding in downstream communities.
- Act as carbon sinks, sequestering greenhouse gases and helping combat climate change.
- Support biodiversity, improving overall ecosystem health and fostering habitat for various species.

The Gila Watershed Partnership (GWP) is a 501(c)3 comprised of community members, representatives from businesses, organizations, and local, state, and federal agencies. The Gila Watershed Partnership works to improve watershed health and water quality of the Upper Gila Watershed through locally led efforts.

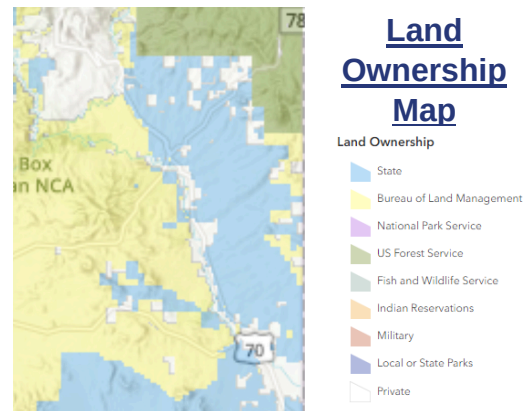
# Invasive Tamarisks

Tamarisk (also known as tamarix or salt cedar) is an invasive shrub with a deep tap root tolerant of poor soils—allowing them to spread aggressively and [crowd out native trees](#). The tamarisks along the Gila River contribute to drought, wildfire, and flood; making their removal a key priority for climate resilience.

- **Drought:** The tamarisk is known for its thirst; experts estimate that one large tamarisk has the potential to absorb up to [200 gallons of water per day](#)—twice the amount the average person uses in the same timeframe. Tamarisks have infested an estimated 3.3 million acres in the western United States—posing a serious threat to the West’s water supply.
- **Fire:** Riversides are relatively resistant to wildfire owing to the high moisture content of the vegetation, even during drought periods. However, the invasion of the river ecosystem by tamarisks changes riparian areas from “barriers” to “pathways” for the ignition and spread of fire due to near-continuous distribution of fine-textured fuels that are susceptible to wildfire. Tamarisk is considered the [most significant hazardous fuel in riparian areas](#) of the interior western United States.
- **Flood:** Tamarisks grow in dense stands along rivers, and change water flow patterns, making rivers shallower and more [susceptible to flooding](#).

## Efforts to Eradicate

Tamarisks grow in thickets [along waterways](#), and most of the land in Greenlee County along the Gila River is [privately owned](#). Therefore, while the invasive species creates a risk for the entire community—it is individual landowners who will ultimately be responsible for dealing with the tamarisks on their stretch of the river. The Gila Watershed Partnership (GWP) is taking the lead on coordinating efforts to remove tamarisks and plant native species.



The introduction of the tamarisk leaf beetle has helped with defoliation of plants; however, while this biocontrol offers a cost-effective means to reduce tamarisks in the long term, wildfire risk may increase in the short-term due to the build-up of dead fuels. (Additionally, the GWP reported progress made by beetle defoliation is much slower than originally anticipated and that the beetle’s effectiveness is inconsistent.)

An additional challenge to the removal of tamarisks is that Southwestern Willow Flycatchers, an endangered bird species, nests in tamarisks since their natural habitat has been [crowded out by the tamarisks](#). Native cottonwood and willow habitats provide more multilayered physical structure than tamarisks, and they support more [diverse insect prey for birds](#). Use of the tamarisk beetle as a biological control causes decline in bird populations by at least 30%, but this decline is ameliorated in the presence of native vegetation. Therefore, [active restoration of native vegetation](#) is important after the removal of tamarisks. [The reestablishment of desirable vegetation provides benefits](#) in addition to creating wildlife habitat, including bank stabilization, erosion control, and the prevention of re-invasion by tamarisks.

## Action Steps

- Pursue grant opportunities that support invasive species removal and habitat restoration projects. Seek funding for removal equipment, dumpsters for disposal, educational materials, professional assistance, etc. AmeriCorps volunteers could assist with removing tamarisks and planting native vegetation.
- Identify partners for sharing resources, such as equipment (chainsaws, protective gear), volunteers, or access to disposal sites.
- Conduct educational outreach.
  - Develop educational materials to raise awareness of the negative impacts of invasive tamarisks and provide guidance on safe and legal removal methods.
  - Host workshops on tamarisk removal and restoring native habitats.
  - Engage property owners, neighborhood associations, and other community stakeholders to garner participation in the removal project.
- Organize community workdays and volunteer efforts to physically remove invasive tamarisks and plant native species to restore the cleared areas.
  - Provide resources and equipment for removal, such as chainsaws, protective gear, dumpsters for disposal, and guides on proper removal techniques.
- Monitor the progress and effectiveness of tamarisk removal and native vegetation restoration efforts, and promote efforts of property owners to inspire others.
  - Track the growth of native species, monitor the re-emergence of tamarisks, and collect data on the ecological benefits achieved through removal and restoration. (A dashboard or story map can be used to both track progress and promote successful remediation. Before/after slider pictures and a map that shows where removal projects are needed, planned, underway, and completed are powerful visual tools to show progress.)
  - Providing yard signs to community members who complete remediation projects on their property, to publicly praise their achievement and to increase awareness of neighbors that there are community members putting in the effort and that there are resources to help them with removal of their tamarisks.
  - Take before-and-after pictures of tamarisk remediation projects and share the success story of the invasive tamarisk removal project with the wider community through various channels, including local media, social media, and newsletters.

## Resources

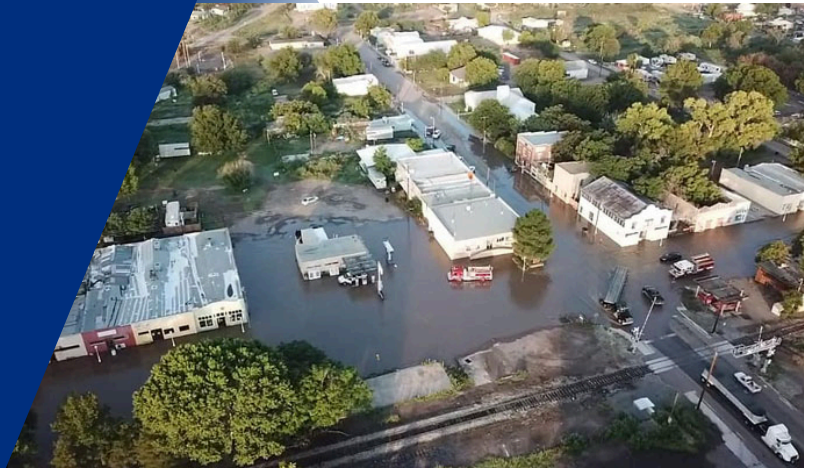
- [RiversEdge West Resource Library](#)
- [Landscape Scale Restoration Competitive Grant Program](#)
- [Arizona Water Protection Fund](#)
- [Watershed Management Group](#)
- [AmeriCorps VISTA Volunteers](#) J40
- [AmeriCorps NCCC Volunteers](#) J40
- [Aquatic Ecosystem Restoration Program](#) J40
- [Landscape Scale Restoration Program](#) J40
- [Healthy Forest Initiative Grants](#) J40



## Climate Strategy 3

# Flood Mitigation

Picture: Stan Ellis



### Objective

Mitigate future floods by restoring the ciénega near the airport and updating the Duncan levee.

### Lead

Greenlee County Planning & Zoning

### Partners

Gila Watershed Partnership, Stream Dynamics, [Arizona Department of Emergency & Military Affairs Division of Emergency Management](#), Town of Duncan

## Ciénega

A ciénega is a wetland system—a spongy and wet meadow with a shallow-gradient, permanently saturated soil in otherwise arid landscapes. Ciénegas support bio-diversity. In Arizona: [19%](#) of threatened, endangered, or candidate threatened or endangered species are directly associated with ciénegas. Ciénegas also purify surface water and mitigate flooding when heavy precipitation occurs.

Community stakeholders reported that there is a ciénega in Greenlee County near the airport that needs restoration. The restoration of this wetland area can provide green infrastructure to reduce flood risk while supporting [an array of other benefits](#).

## Levee

On the south end of Clifton there is a 20-foot high, half-mile-long [levee](#) that protects Clifton from flooding. A study done in 2016 for the Greenlee County All Hazard Mitigation Plan reported that the only FEMA-accredited levee within Greenlee County is the Clifton Levee. In contrast, Duncan has “non-levee embankments” which fail to prevent flooding in the Town. The Duncan levee last gave way to major flooding in 2022 and 2014, while in Clifton the last major, catastrophic flooding was in [1983](#).

The construction of a FEMA accredited levee could protect Duncan from future floods.

### Action Steps

- Compile all known information on the distribution and characteristics of water systems within the ciénega project area, from topographic maps, surveys, and input from knowledgeable individuals. Identify property owners.
- Conduct preliminary review by a group qualified to assess the ciénega (such as Stream Dynamics Inc.) to identify restoration needs and options. Coordinate with stakeholders and partners to determine action plan for restoration of the ciénega.
- Identify other areas along the river that provide opportunities for [green infrastructure](#) that can act as stormwater storage areas, water conveyance areas, and runoff filters.
- Select a levee sponsor and create a [Local Levee Partnership Team](#) (LLPT).
- Schedule an initial LLPT & FEMA meeting, which is how FEMA provides an overview of their levee analysis and mapping procedures, the LLPT provides feedback on what procedures are relevant to the Duncan levee, and clarify what data is required from the community and/or levee sponsor.

### Resources

- [Spring Stewardship Institute – Technical Assistance](#)
- [Stream Dynamics](#)
- [Institute for Applied Ecology – Technical Assistance](#)
- [Hidalgo SWCD – Potential Partner](#)
- [EPA – 5 Star Wetland and Urban Waters Restoration Grants](#)
- [USDA NRCS – Environmental Quality Incentives Program](#)
- [USDA NRCS – Conservation Innovation Grants](#)
- [NFWF – Conservation Partners Program](#)
- [USACE – Technical Assistance](#)
- [USDA NRCS – Watershed and Flood Prevention Operations Program](#)
- [FEMA – Flood Mitigation Assistance Grant Program](#) J40
- [FEMA – Pre-Disaster Mitigation Grant Program](#)
- [EPA – Green Infrastructure Federal Collaborative](#)
- [EPA – Green Infrastructure Funding Opportunities](#)
- [EPA – Water Infrastructure and Resiliency Finance Center](#)
- [Corps Water Infrastructure Financing Program](#) J40
- [USACE – Pilot Programs for Rural and Economically Disadvantaged Communities](#) (studies to address flooding or storm damages, and flood or storm damage reduction projects) J40



## Climate Strategy 4

# Radio Communication



<b>Objective</b>	Compose a County Emergency Communications Plan.
<b>Lead</b>	Greenlee County Health and Emergency Management
<b>Partners</b>	FMI Head of Security, Fire Departments, Police Departments, Forest Service

During a crisis, agencies such as police, fire departments, paramedics, and public works need to coordinate seamlessly. Radio communication boosts situational awareness, helping responders understand the crisis context, stay informed about other teams, and follow incident commanders' instructions for safety and effectiveness.

According to local emergency responders, the poor radio signal in Greenlee County causes major challenges when responding to disasters and emergencies. The ability to communicate via radio is a concern for community resilience.

The county has six towers (own two and lease space on four), and they have maintenance contracts on most sites, but not Hoop Hill. The repeater on Hoop Hill in Clifton has been down a year, and efforts to resolve challenges with scheduling the contractor are underway.

A County Emergency Communications Plan would remediate the emergency radio communication challenges. Community partners can work together to outline how emergency communication will be managed and coordinated within Greenlee during crises or disasters. It includes protocols for various agencies and organizations to ensure efficient and effective communication, maintain connectivity, share critical information, and manage resources during emergencies. The primary goal is to

enhance the county's preparedness and response capabilities, ultimately saving lives and mitigating the impact of disasters. This plan would include:

- Directions regarding channel use during a crisis
- Effective crisis communication protocol
- Coordination between the county and the mine to ensure appropriate coverage
- Evaluate needed tower/repeater sites in the county
- Coordinate for timely tower maintenance and redundancies to mitigate issues with maintenance contractors

### **Action Steps**

- Coordinate regular planning session involving all partners to determine what communication needs and policies should be included in the county Emergency Communications Plan.
- Assess the current emergency communication capability of the entire county and determine gaps. If there are infrastructure needs, funding of new infrastructure needs to be included in the plan.
- Compose the county Emergency Communications Plan.
- Conduct a drill for partners on use of the plan. Revise plan as needed based on simulations.

### **Resources**

- [USDA – Community Facilities Program Disaster Repair Grants](#)
- [USDA – Community Facilities Direct Loan & Grant Program](#)
- [USDA – Telecommunications Infrastructure Loans & Loan Guarantees](#)
- [USDA – Cohesive Fire Strategy Grants](#)
- [Public Safety Innovation Accelerator Program – Public Safety Communications Research](#)
- [FEMA – Fire Prevention and Safety Grants](#)
- [FEMA – Staffing for Adequate Fire and Emergency Response](#)
- [DHS – Emergency Management Baseline Assessment Grant](#)
- [FEMA – Building Resilient Infrastructure and Communities](#)
- [Community Policing Development Microgrants Program](#)



# Appendices

## Appendix I: Acknowledgments

Special thanks for input on this strategic plan from the following:

### **Local Businesses & Economic Development Professionals**

- Cameron Atkins, Safford Regional Airport
- Dawna Lizarraga, Greenlee Chamber of Commerce
- Deborah Mendelsohn, Owner of The Simpson Hotel
- Erica Gonzalez, County Economic Development Coordinator
- Martha Lujan, Freeport-McMoRan Social Performance & Townsite Manager
- Phil Ronnerud, Greenlee County Tourism Council
- Rick Hanson, Business Owner

### **Education & Workforce Development**

- Bryan Boling, Greenlee County Superintendent
- Cecilia Jernigan, Duncan School Board
- Eldon Merrell, Duncan Superintendent
- Jennifer Morales, Morenci Superintendent
- Marci Harris, Duncan Student Dean

### **Health Professionals & Emergency Responders**

- Duane Turner, Morenci Fire Chief
- Eliza Coll, Arizona Association of Emergency Managers, & Arizona Public Health
- Hayden Boyd, Duncan Fire Chief
- Josh Smith, Morenci Search and Rescue
- Justine Holguine, Health Clifton
- Lori Ray, Hospital Disaster Relief
- Matt Bolinger, Greenlee County Health Department
- Richard Varela, Clifton Fire Chief

## **Regional Organizations & Civic Groups**

- Amber Sumner, Duncan Food Bank
- Ann George, Freeport-McMoRan Sr. Scientist - Biodiversity & Sustainability
- Barbara Ahmann, The Art Depot
- Denise Benton, United Way of Graham and Greenlee Counties
- Keith Dennis, SouthEastern Arizona Governments Organization
- Monica Aguilar, Clifton Social Club
- Sabrina Dumas, Town of Clifton Library Director
- Sarah Sayles, Gila Watershed Partnership
- Stephen Petterson, SouthEastern Arizona Governments Organization
- Steve Ahmann, Greenlee Gardens & other civic groups

## **Local Leaders**

- Alex Blake, Town of Duncan Mayor
- David Gomez, Greenlee County Board of Supervisors
- Janeen Carillo, Town of Clifton Council
- JoAnn Cathcart, County Assessor
- Laura Dorrell, Town of Clifton Mayor
- Rudy Perez, Town Manager of Clifton
- Terry Hinton, Town Manager of Duncan
- Tom Powers, Community Leader

# Appendix II: Report Template

Task	Deadline	Progress-To-Date

**Adjustments to Strategies (as needed)**

**Planned Celebration / Announcement of Achievements**

**Funding / Resource Help Needed**

# Appendix III: Grant Verbiage

This appendix provides basic narrative text that can be used as a starting point when drafting grant applications. Informational text about the initiatives and their needs can be taken directly from the body of the Action Plan as needed. The language provided in this appendix includes key points typically requested by grant applications for each of the priorities in this Action Plan. The typical grant application topics include:

**Community Challenges/Needs:** Some of the backgrounds of the challenges often addressed by the organizations/programs that will be seeking funding. Narrative that provides a persuasive argument that there is a need.

**Efforts Underway or Accomplished to Address the Challenges/Needs:** Grantors like to see that there is already some positive momentum in addressing the needs that the funding will go towards. It shows that the project does matter to the community/organization and that there is likely to be follow through with the project.

**Beneficiaries & Community Benefits:** Every grant asks who the project/program they are funding will serve. While the nonprofits will have to adjust slightly according to their specific projects, there are generally both immediate beneficiaries and more widespread ones.

**Geographic Area & Community Demographics:** Almost every grant will ask for information about the community. Include both normal demographic information, and some detail about the community and area that is unique to them.

Since this information is the same for all projects, see [Appendix IV: County Data](#) for this information. Please note, however, that the data will vary from year-to-year, so grant applicants should be sure to use up-to-date statistics, which can be found at [data.census.gov](https://data.census.gov) or by using [Better City's Greenlee County Data Dashboard](#).

# ECONOMY

## Community Challenges/Needs

There is a strong need to diversify the economy in Greenlee County and reduce the heavy reliance on the mining industry. Greenlee County's economy is almost entirely structured around the mining industry, with approximately 90% of the county's gross domestic product (GDP) and at least 70% of the county's total jobs coming from this industry. The economy is vulnerable to industry fluctuations due to its reliance on one industry. Diversifying the economy beyond mining will help mitigate the impact of potential downturns in mining and ensure long-term stability.

## Efforts Underway or Accomplished to Address the Challenges/Needs

Many efforts are already taking place in Greenlee County that will contribute to revitalization and resiliency, such as the San Francisco River Restoration Project and Duncan's infrastructure improvements. Greenlee County is working in conjunction with its partner organizations—the Greenlee County Economic Development Coordinator. Working under three core strategies, the county is working to bring a variety of businesses and new jobs.

1. Utilizing the airport would extend the range of services the airport can provide and enable leveraging the airport for economic development. The airport will establish its own FBO so they can accommodate more flights and uses, and explore the potential of providing Boneyard Aircraft Storage.
2. Adding an extended stay hotel would serve as temporary lodging for mine contractors and support tourism. The hotel would also encourage longer visits and repeat trips, attracting a broader range of visitors.
3. Developing main street into a vibrant street can bolster economic development by attracting new businesses, investments, residents, and tourists. A business incubator and/or pop-up arrangement with local property owners can help fill empty commercial spaces for short periods.

## Beneficiaries & Community Benefits

The entire community will benefit from a diversified economy, and the more diverse tax income will also allow the county to provide better resources for its residents. This will make Greenlee County a better place to live and work for its current and future residents.

# CLIMATE

## Community Challenges/Needs

Community members identified drought, wildfire, and riverine flooding as pressing concerns for the county. According to the FEMA National Risk Index , the expected financial loss in Greenlee County each year due to natural hazards is highest for drought (\$220 thousand), wildfire (\$190 thousand), landslide (\$180 thousand), and riverine flooding (\$170 thousand). Natural disasters can occur seasonally or without warning, subjecting the community to periods of insecurity, disruption, and economic loss.

## Efforts Underway or Accomplished to Address the Challenges/Needs

With support from the Town of Duncan, the Town of Clifton, and Gila Watershed Partnership, Greenlee County is working to mitigate climate risks by implementing four core strategies:

1. Conducting an infrastructure needs assessment to provide a prioritized list of projects and data to craft compelling funding requests.
2. Encouraging residents to remove tamarisk from their property. To accomplish this, the Gila Watershed Partnership is taking the lead on coordinating efforts to restore the river and plant native species.
3. Mitigate future floods by restoring the ciénaga near the airport and exploring the option to enhance the Duncan levee to become a FEMA accredited levee.
4. Creating a County Emergency Communications Plan to mitigate the emergency radio communication challenges. Also, implementing a better radio communication to increase responder safety and efficiency.

## Beneficiaries & Community Benefits

Greenlee County will become a safer place to live and work for its current and future residents. It will ensure the longevity of the county and make it resilient to climate issues. It will also become a more accessible and efficient community. The climate resilience programs and efforts implemented in Greenlee County will also have a ripple effect that will benefit neighboring counties and can serve as an example for similar communities.



# HOUSING

## Community Challenges/Needs

A lack of affordable housing inventory has posed an issue for Greenlee County and meeting the needs of the workforce which plays a key role in attracting businesses to the county. Employers in Greenlee County reported a high need for workforce housing in the two-county area, with multiple stakeholders claiming their efforts to expand are curtailed due to workforce availability. Potential hires cited an inability to find housing as the primary impediment that keeps them from accepting job offers. The limited housing stock has been a major detriment that keeps the workforce in the county low and limited.

## Efforts Underway or Accomplished to Address the Challenges/Needs

Greenlee County is working in conjunction with the Greenlee County Economic Development Coordinator to create more affordable housing options. Working under two core strategies, the county is working to bring a variety of housing options that will support the local workforce:

1. Hosting a regional housing summit to create a platform for exploring innovative housing solutions and fostering partnerships that can lead to the development of housing strategies tailored to the unique needs of the region. The summit will bring together key stakeholders, including local government officials, developers, housing advocates, and community members, to collaboratively address housing challenges and opportunities.
2. Establishing a Community Foundation to reduce blight by purchasing homes and cleaning the title to remove outstanding debts, then demolish or renovate the homes to resell the property with a clean title.

## Beneficiaries & Community Benefits

Residents benefit from having a variety of affordable housing options along with businesses that are able to ensure there is sufficient housing available. Residents will also benefit from having a revitalized housing selection with less dilapidated and abandoned homes. The county will become a more attractive place for businesses which will continue to bring growth and development to the county.

# Civic Engagement

## Community Challenges/Needs

Community stakeholders reported that there is low civic engagement in Greenlee County. When individuals participate in civic affairs, they become more invested in the well-being of their community. Increasing civic engagement would support efforts to address community needs.

## Efforts Underway or Accomplished to Address the Challenges/Needs

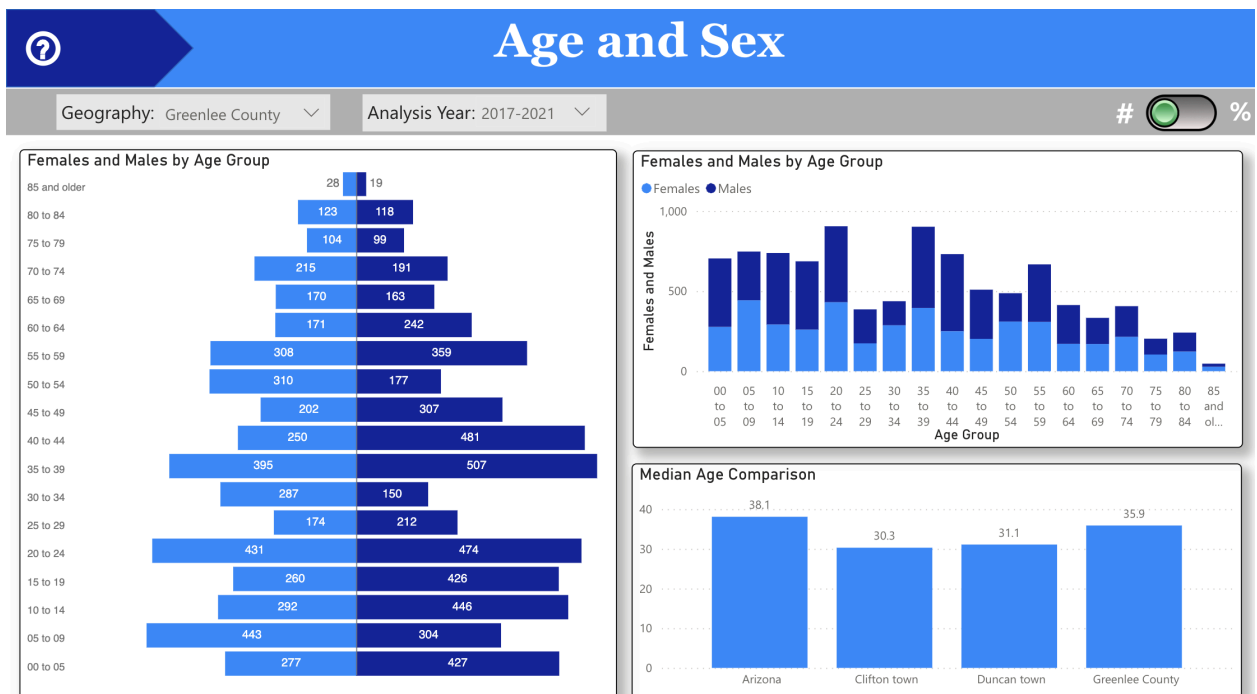
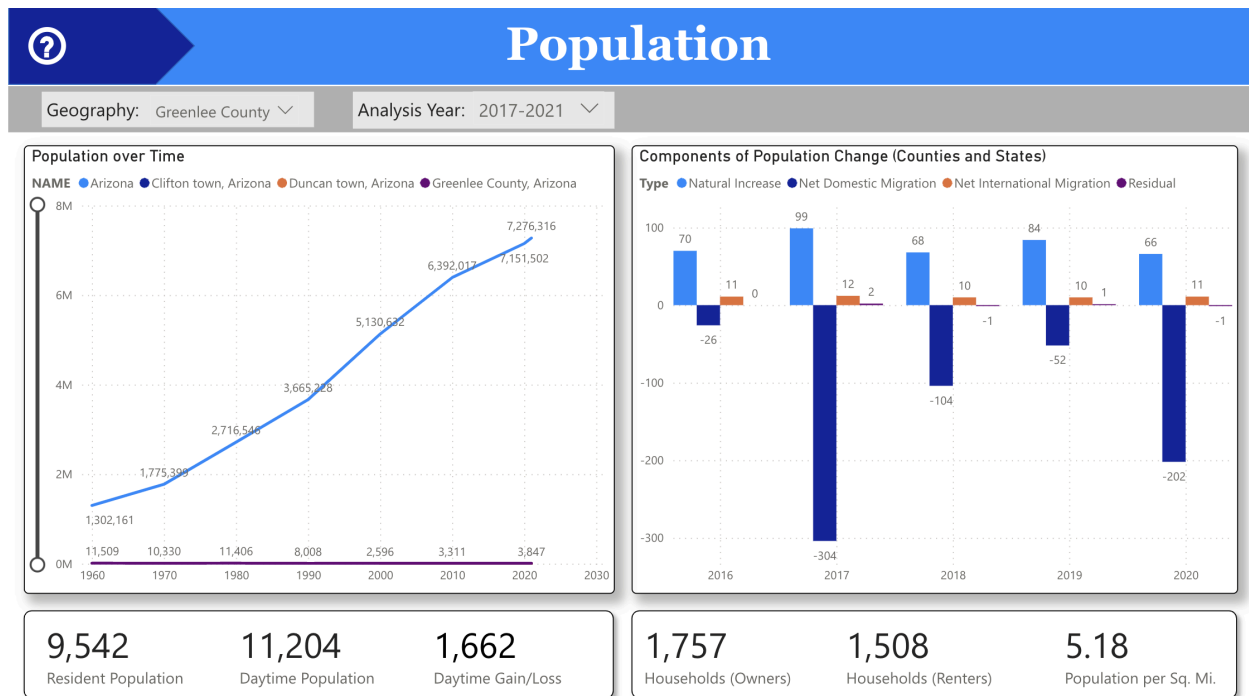
Greenlee County is working in conjunction with the United Way of Graham and Greenlee Counties, working under two core strategies, to create avenues to better engage members of the community.

1. The Greenlee County Summit will work to strengthen relationships with State Representatives and regional organizations. It will also showcase the county and share key initiatives and issues. Giving community members a chance to directly interact with each other and representatives.
2. Encouraging civic engagement by conducting an awareness campaign on the importance of local civic engagement and volunteerism; and establish a forum for communicating volunteer opportunities and actively promoting these opportunities to community members.

## Beneficiaries & Community Benefits

Residents of Greenlee County would benefit greatly from increased civic engagement. The county would become a more inclusive and stronger place to live that would be built off residents needs rather than ideas dictated by leaders who are out of touch with residents. Leadership would also benefit from increased civic engagement and have a deep understanding of the needs and wants of the people they serve.

# Appendix IV: County Data





# Race and Ethnicity

Geography: Greenlee County

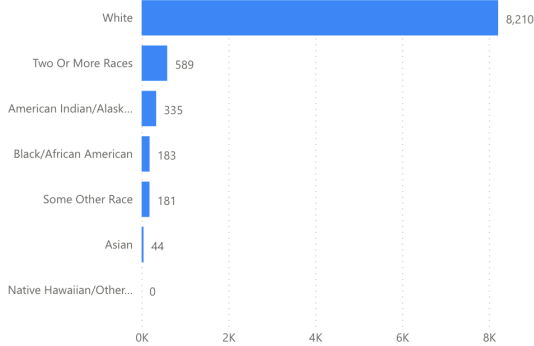
Analysis Year: 2017-2021

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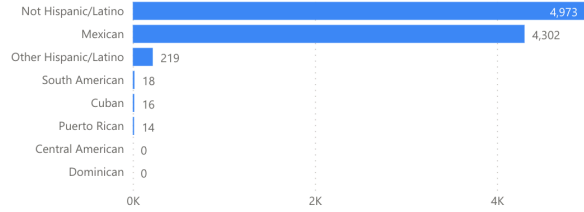
## Minority Percentage

54.57%

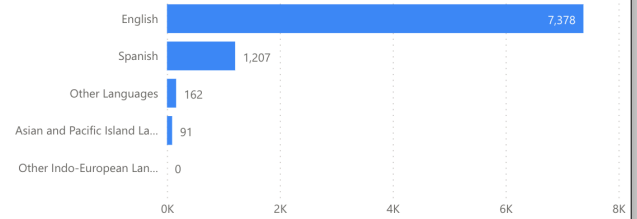
## Race



## Hispanic/Latino Origin



## Language Spoken at Home (Pop. Age 3+)



# Housing Type and Age

Geography: Greenlee County

Analysis Year: 2017-2021

#  %

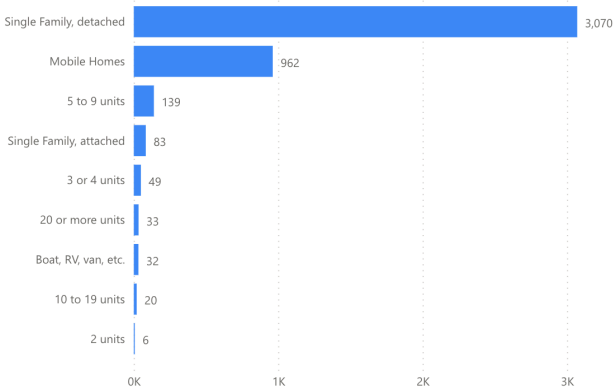
4,394

Total Housing Units

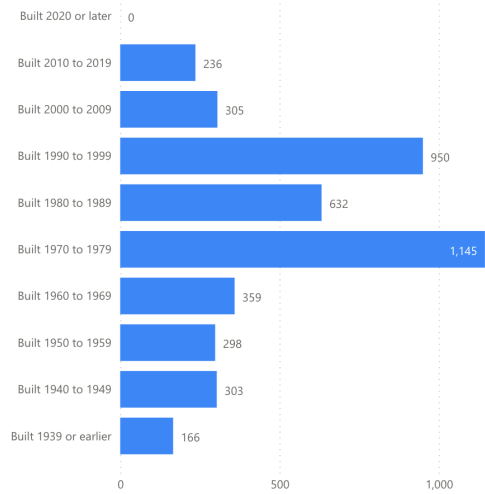
2.39

Housing Units Per Square Mile

## Housing Units by Structure Type



## Housing Units by Year Built



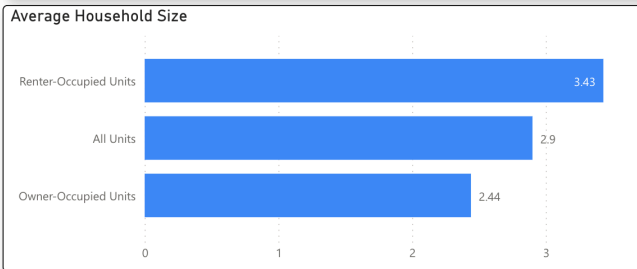
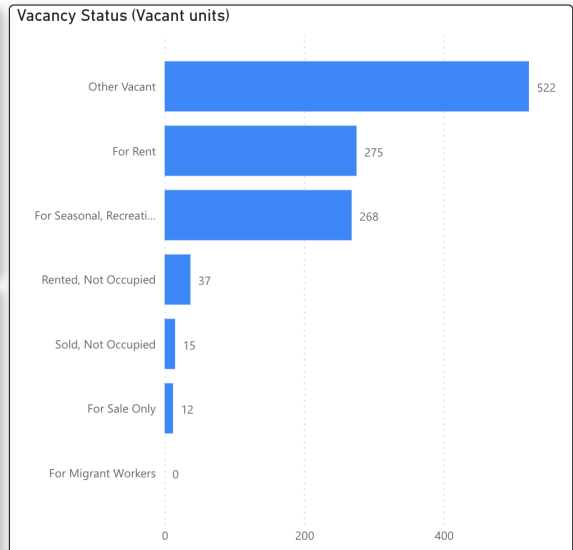
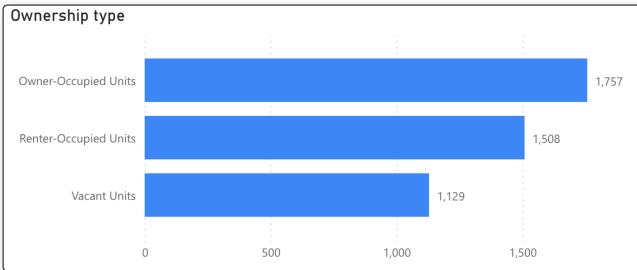


# Housing Ownership and Vacancies

Geography: Greenlee County

Analysis Year: 2017-2021

#  %

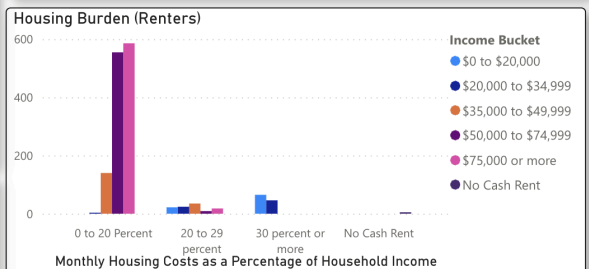
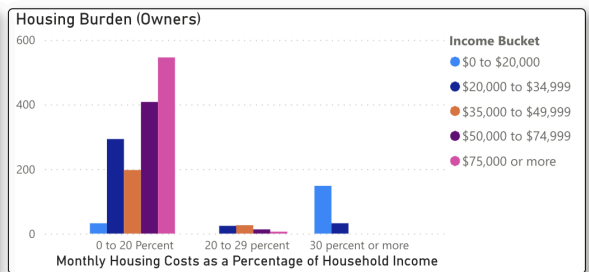
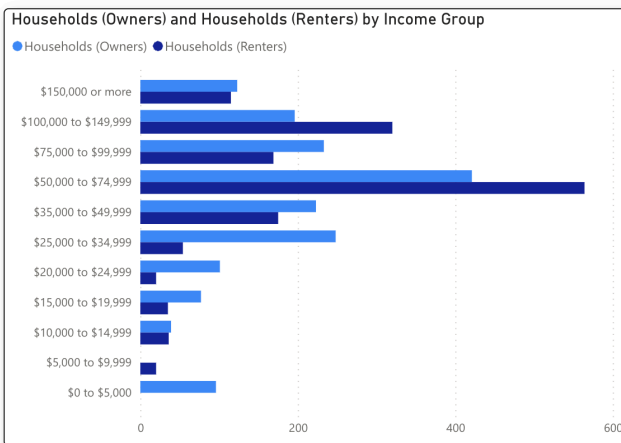


# Housing Affordability

Geography: Greenlee County

Analysis Year: 2017-2021

#  %



**\$513**  
Median Rent

**\$92,600**  
Median Home Value (Owner-Occupied)

**1.37**  
Value to Income Ratio



# Residential Construction

Geography: Greenlee County

Analysis Years: 2017-2021

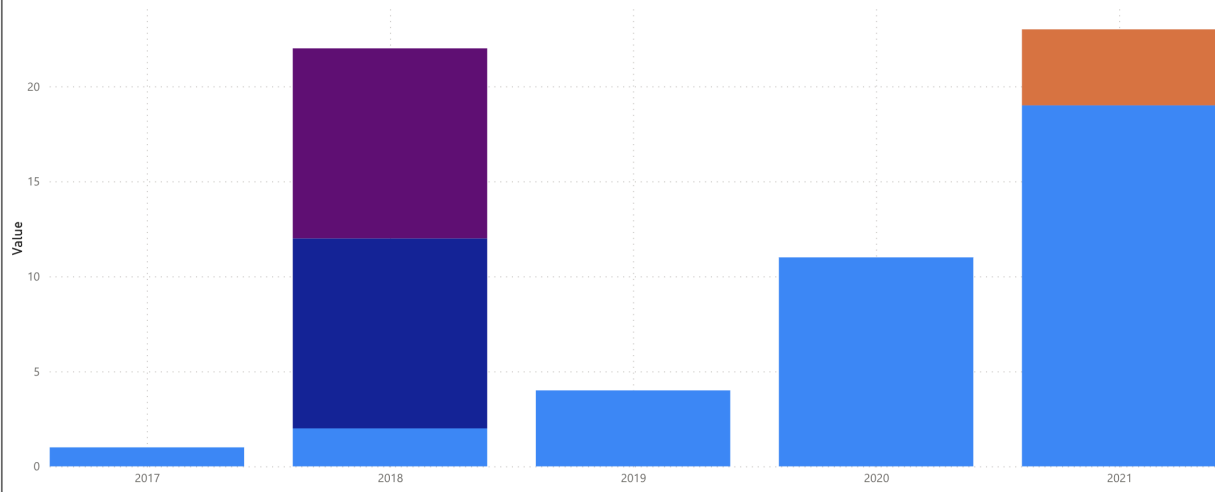
Buildings

Units

Value

### Residential Construction by Units

NAME ● 1-unit Units ● 2-unit Units ● 3-4 Unit Units ● 5+ Unit Units



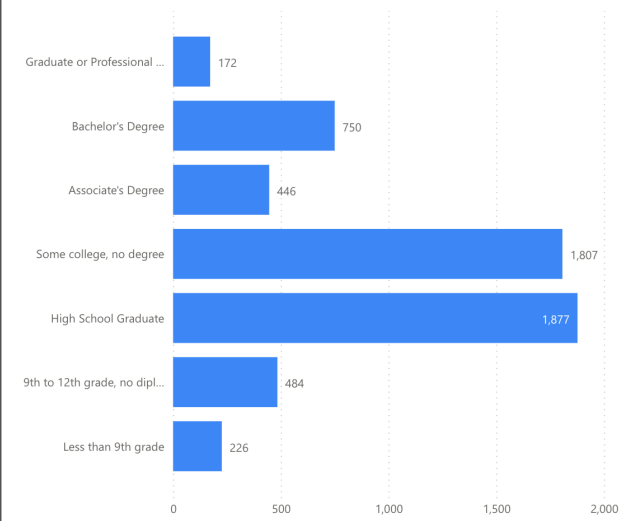
# Education

Geography: Greenlee County

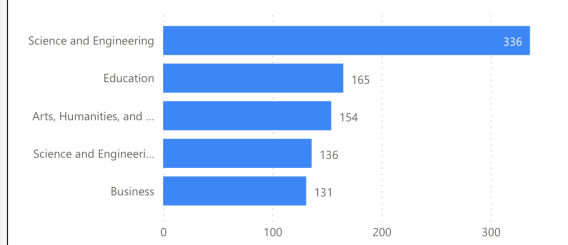
Analysis Year: 2017-2021

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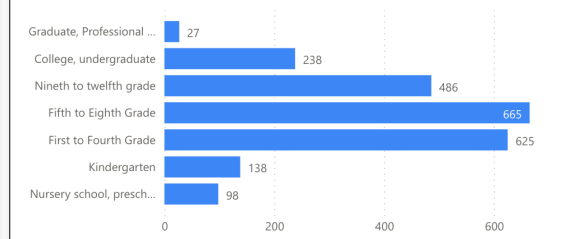
### Educational Attainment

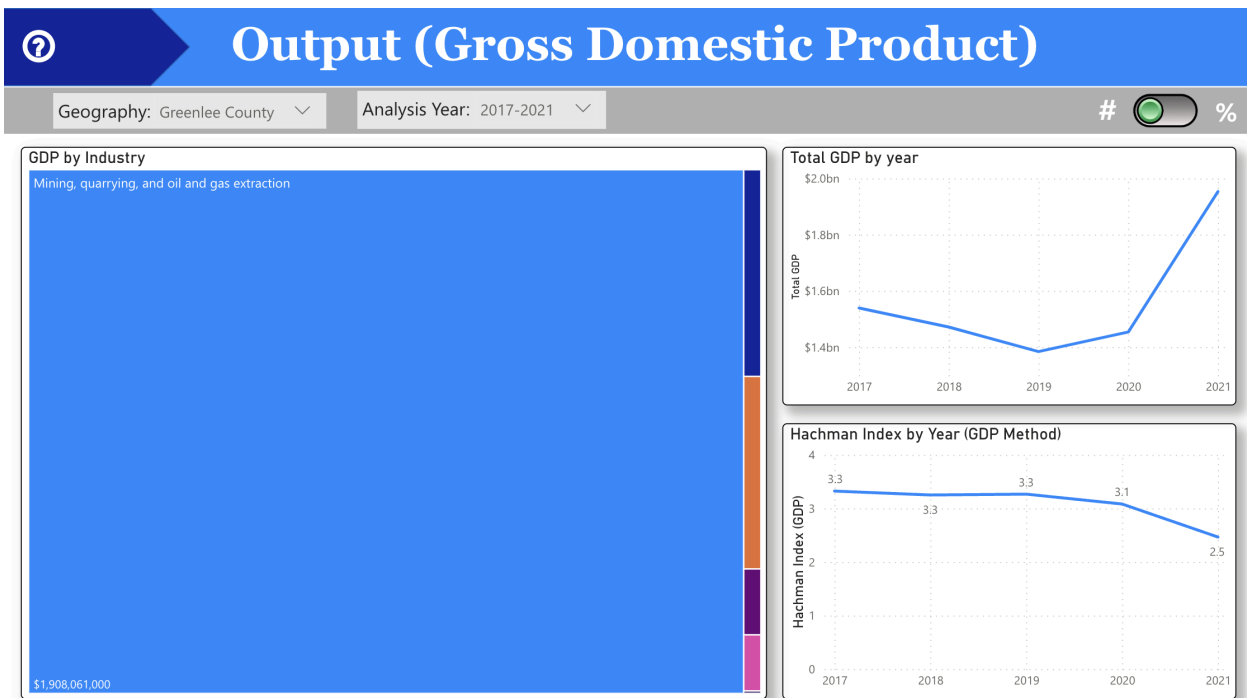
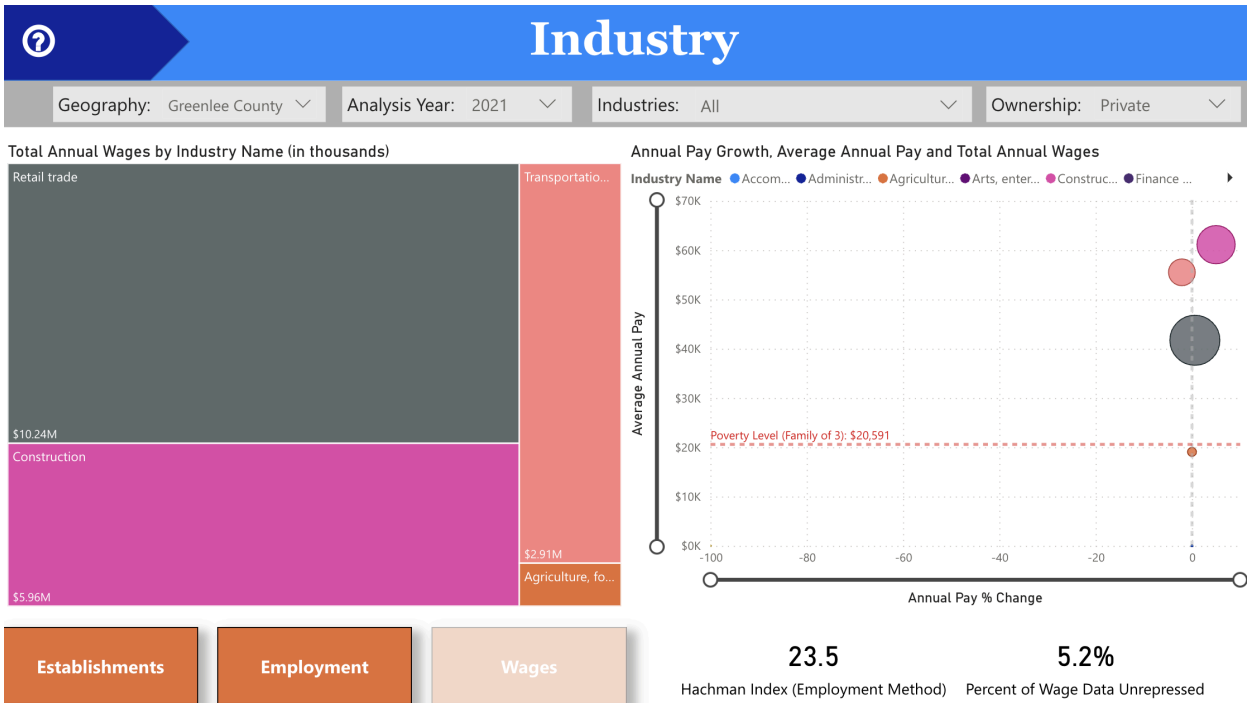


### Degrees Earned by Type



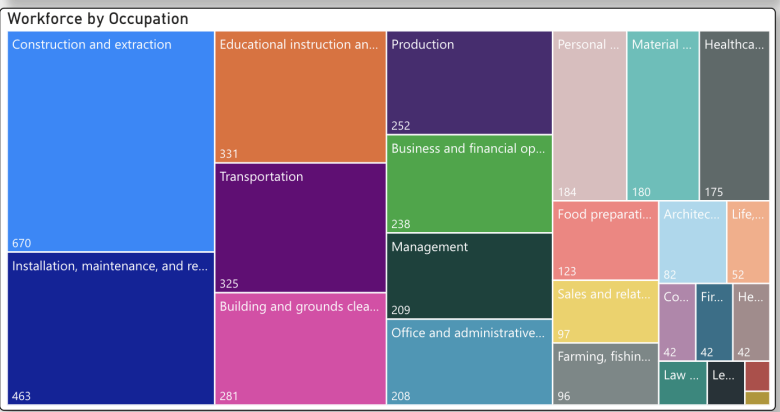
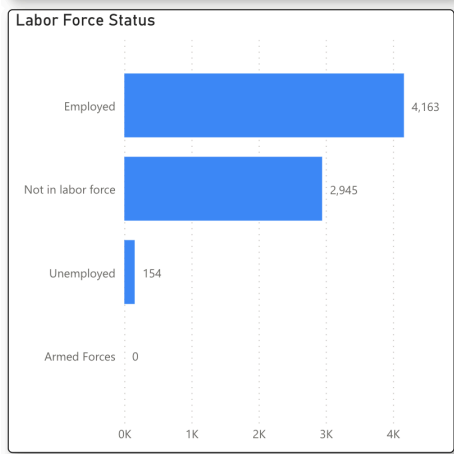
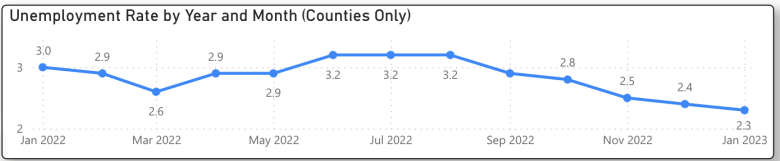
### School Enrollment





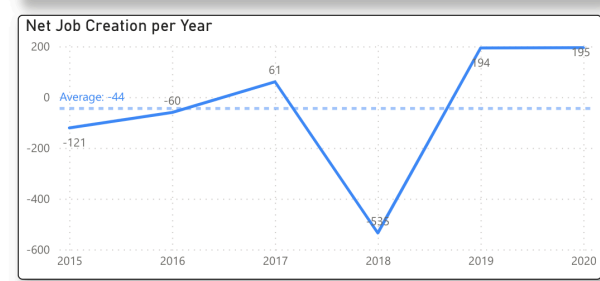
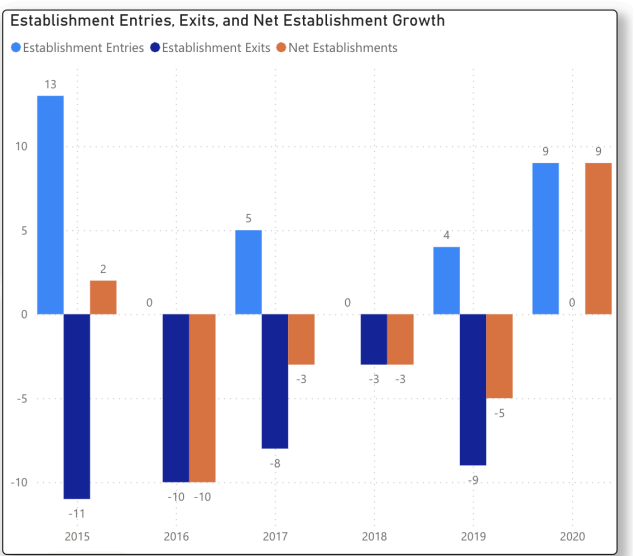
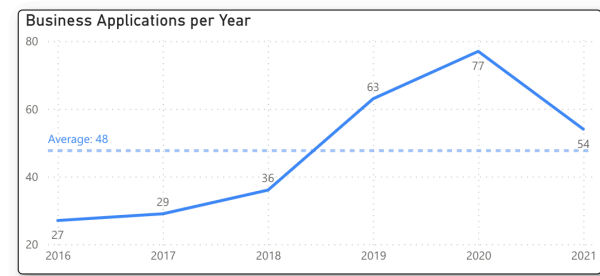
# Workforce

Geography: Greenlee County Analysis Year: 2017-2021 # %



# Entrepreneurship

Geography: Greenlee County Analysis Years: 2015-2021 (if available)







# Businesses (Employer & Nonemployer)

Geography: Greenlee County

Analysis Year: 2019

## Employer Establishments

151

Employer Establishments

3,509

Employer Employment

\$241.28M

Employer Annual Payroll

## Non-employer Revenues

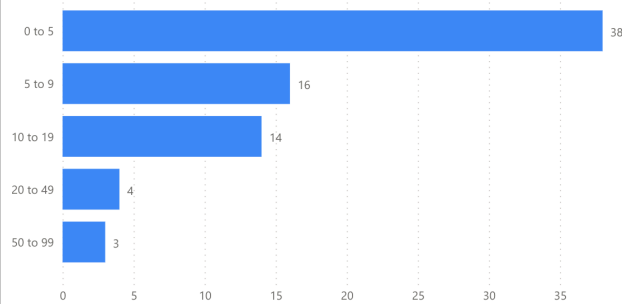
240

Non-employer Establishments

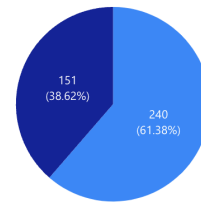
\$4.13M

Sales, Value of Shipments, or Revenue

## Number of Establishments by Employee Count (Employing Entities)



## All Establishments



● Non-employer Establishments ● Employer Establishments



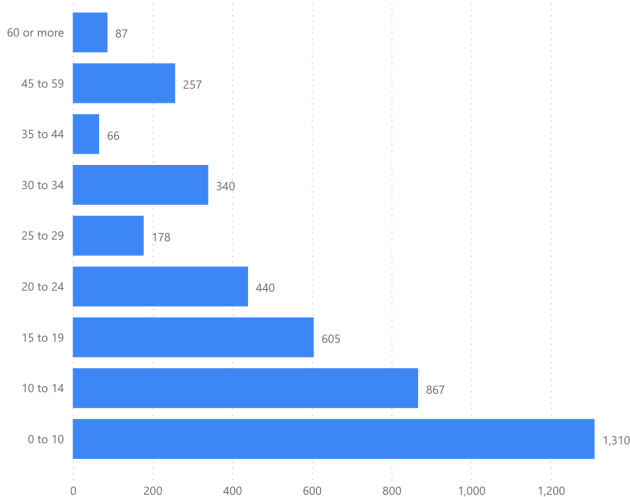
# Commuting

Geography: Greenlee County

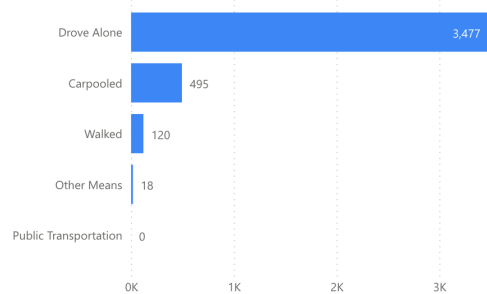
Analysis Year: 2017-2021

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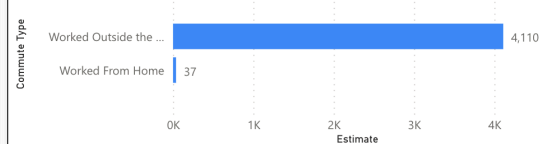
## Commute Time to Work



## Commute Type



## Work from Home





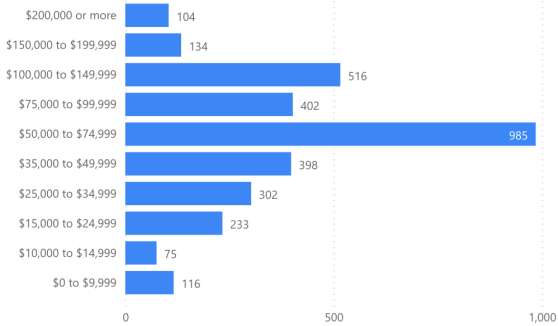
# Income and Earnings

Geography: Greenlee County

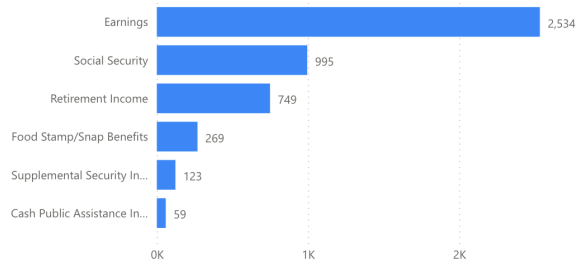
Analysis Year: 2017-2021

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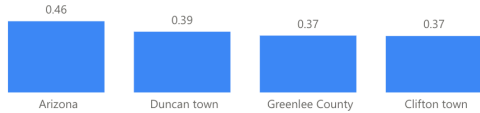
### Household Income and Earnings by Bucket



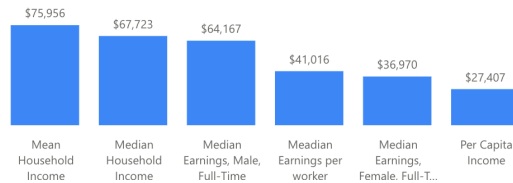
### Sources of Income (Non-exclusive)



### Gini Index Comparison (Lower means more income equality)



### Income Statistics



# Poverty

Geography: Greenlee County

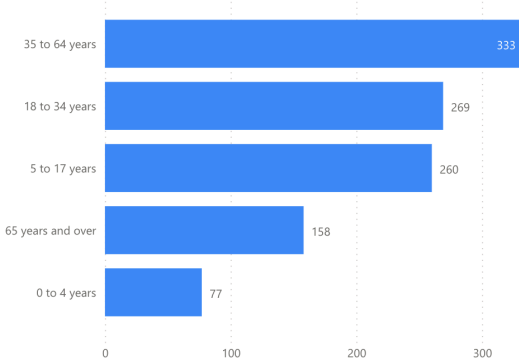
Analysis Year: 2017-2021

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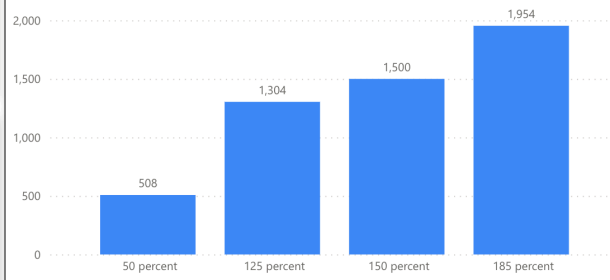
## 11.60%

Percent of Population Living Under the Poverty Level

### Estimate by Age Group



### People who Earn Below a Poverty Thresholds (Percent of Poverty Level)



### Estimate by Work Recency

