



## 2020-2021 Speaker Series

Report of Activities and Recommendations

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Speaker Series Funded by the Colorado Department of Public Health and Environment's  
Office of Health Equity, through the Health Disparities Grant Program



## Executive Summary

The Housing+Health Speaker Series was designed to increase Chaffee County's collective understanding of land use and growth management strategies and to obtain input from community members regarding related policies and systems. This two year project first focused on community wide education, and then narrowed the focus to educational opportunities for the professional planning community within Chaffee County, while providing two community wide educational events. In addition, We Are Chaffee, a storytelling initiative whose mission is to build a more resilient community through the power of story sharing & engagement.

The Housing+Health project has been funded by Colorado's Department of Public Health and Environment's Office of Health Equity, and is part of the Health Disparities Grant Program. The goal of the program is to address the upstream social determinants of health, and the Chaffee County Office of Public Health and Environment and the Chaffee County Office of Housing (now Chaffee Housing Authority) focused on addressing displacement and gentrification, increasing housing affordability and stability over time, thereby improving long term health outcomes of Chaffee County residents.

To focus the Speaker Series on relevant topics, we continued to engage the Planning Collaborative to identify the topic selections and relevant activities. This Planning Collaborative, established during the first year of the grant, is comprised of professional planners from each municipality in Chaffee County as well as the Executive Director's from the Chaffee County Economic Development Corporation and Envision Chaffee County. The Planning Collaborative prioritized the topics covered in the speaker series, made recommendations to adjust grant activities, and participated in the auxiliary activities of a County-wide GIS evaluation and a facilitated Developers Forum on pertinent land use topics.

After subject matter experts were identified for each of the selected topics, the Housing+Health team hosted two community-wide educational events and four Planning Collaborative educational events, one for each identified topic. Due to the COVID-19 pandemic, all of the educational events, and the GIS evaluation were held via the online Zoom platform; the Developers Forum was held in person, at Mt. Princeton Hot Springs Resort. Recordings of these events, when available, are found at [www.housinghealthchaffee.org](http://www.housinghealthchaffee.org).

Recommendations from the most recent grant year (FY21) include the following:

- Institutionalize a quarterly convening of the Planning collaborative to focus on a more robust use of each jurisdictions GIS, including the following:
  - o Maintaining, updating, and sharing of the data dictionary;
  - o Identifying and securing regular professional development opportunities regarding GIS management and use;
  - o Migrating jurisdictional licensing to ArcGIS Online, allowing for sharing of data layers across jurisdictions, when appropriate.
- Improve municipal and county coordination on long-range planning and development review.
- Streamline the creation of prioritized housing types, namely those that are affordable to Chaffee County workforce.
- Provide resources, both financial and real property.
- Facilitate Smart Growth strategies county-wide.

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## Introduction, Background, and Context

Chaffee County, Colorado is experiencing a rapid transformation in population, which is challenging the professional capacity within the community to manage growth, address policy changes necessary to intervene in the rising cost of housing, both of renter and owner-occupied structures, and mitigate the displacement of low- and moderate-income residents. This pressure has only increased with the influx of new residents to Chaffee County brought on by the COVID-19 pandemic, and the historic private market rental stock transitioning into owner occupied housing for incoming residents who are able to work remotely. This displacement is resulting in many low to moderate income households being rent burdened, residing in substandard housing, living in crowded conditions, moving frequently, commuting long distances over mountain passes, or living in places not meant for human habitation, most prominently in vehicles and tents, many of whom are experiencing this extreme housing insecurity for the first time. All of these living arrangements have a negative impact on health and are associated with long term chronic cardiovascular and pulmonary disease.

Community interest in affordable housing interventions and land use is at an all-time high, resulting in the creation of the Chaffee Housing Authority, a multijurisdictional housing authority including the Town of Buena Vista, the City of Salida and Chaffee County. Other entities have housing affordability as a primary goal within their plans, including the Chaffee County Community Health Assessment and Health Improvement Plan 2017-2021, and the Chaffee County Economic Development Corporation. Moreover, realtors, developers, and construction professionals have voiced concern over the high costs of construction and certain regulatory impediments to development, which further exacerbate the increase in housing costs, for both renter and owner-occupied housing. Lastly, as a tourist community, much of Chaffee County's housing stock has been turned into short term rentals, and while we know this is impacting the availability, and therefore affordability, of long term rentals, we do not have enough quantitative data to inform the adoption of county-wide, comprehensive policies to manage this impact.

Through the CDPHE Office of Health Equity's Health Disparities Grant Program, we proposed a complex intervention in the housing production ecosystem, wherein diverse stakeholders within that ecosystem, including factions from the regulatory sector, the private market sector, and the conservation and agricultural sectors, as well as the general public, would convene to learn about land use topics and how they impact local policies, regulations, and practices.

The result became known as the "Housing+Health Speaker Series" and promoted community engagement and participation in the county-wide Comprehensive Plan update process. Results from FY 20 of this grant resulted in recommendations that were reflected in goals and objectives in the now adopted Together Chaffee Comprehensive Plan.

The theory of change we proposed is that an educated population would advocate for a regulatory environment that will reduce the cost of housing production and allow for a greater variety of housing types, thereby increasing the supply of affordable housing units county wide. This increase in the affordable housing supply will provide safe, stable, and affordable housing options to low to moderate income residents and ultimately reduce the health disparities associated with displacement and class gentrification.

Narrative from the original grant application can be found in Appendix A to this report, starting on page 7.

## Educational Topic Selection

### Planning Collaborative

To launch the second year of these grant activities, the Planning Collaborative was convened to identify topics that are most often identified as stressors within our growth zones. The following table documents the topics identified by the Planning Collaborative and the subject matter experts identified to provide education.

Educational Topic	Subject Matter Expert
Increasing Intensity/Density in Commercial Zones	Patrick Rawley, Stan Clauson and Associates
Reducing administrative and regulatory barriers to affordable housing development	AJ Favwer, Verdunity
Financing Affordable Housing Development	Chris Furlong, DOLA-DOH Kathryn Grosscup, CHFA Jeff Owsley, CHFA
Infrastructure costs for installation and long term maintenance;	Kevin Shepherd, Verdunity
Creating Metro Districts or other approaches to financing	Ann Terry, Special District Association of Colorado
GIS training for Planning, Evaluation, and Forecasting	Dara Seidl, Associate Professor of GIS, Colorado Mountain College

In addition to these educational events, two separate initiative were launched to inform the work of the planning collaborative, including a GIS Assessment and a Developers Forum.

### GIS Assessment

The Planning Collaborative identified the expanded use of GIS as a system change that could be beneficial to the management of growth and development within Chaffee County. Therefore, Argis Solutions was secured to assess each jurisdictions current state of use, collect feedback from the Planning Collaborative about their preferred future state of use, and make recommendations about how to move forward into that preferred state of use. Their resulting report of recommendations included, at a very high level, the continued convening of the Planning Collaborative on a regular basis to identify and share data as well as increase collaboration. A copy to the final assessment report is included in this documents Appendix B, beginning on page 13.

## Developers Forum

Root Policy Research was secured to facilitate a discussion about land use topics and development processes in the growth zones that were identified in the Together Chaffee Comprehensive Plan. The consultant began by hearing from the Planning Collaborative about various issues that they face in their professional roles while managing development in the growth zones. The resulting list of topics were then presented at a Developers Forum, an invitation only event for the local development community, where the topics were discussed. Participants provided their perspectives and suggestions on how the issues might be addressed, and Root Policy Research compared the developers input to the Planning Collaborative input, and identified areas of overlap. They produced a report, which included a list of recommendations, which has been submitted to the County's Planning Department to help inform the Request for Proposals that is being drafted to secure a consultant to update the County's Land Use Codes. A copy of the Root Policy Research report is included in this document as Appendix C, beginning on page 49.

## Results and Recommendations

The result of these activities culminates in the following over-arching recommendations:

- A. Increase the collaborative use of GIS across jurisdictions, to allow for more robust long-range planning, development evaluation, natural resource protection, and outcome evaluation over time. This can be initiated by agreeing to institutionalize a quarterly convening of the Planning collaborative to focus on a more robust use of each jurisdictions GIS, including the following:
  - Maintaining, updating, and sharing of the data dictionary;
  - Identifying and securing regular professional development opportunities regarding GIS management and use;
  - Migrating jurisdictional licensing to ArcGIS Online, allowing for sharing of data layers across jurisdictions, when appropriate.
- B. Increase collaboration between the planning community and the development community to address the housing needs of Chaffee County residents. This can be accomplished by agreeing to prioritize the following:
  - Improve municipal and county coordination on long-range planning and development review.
  - Streamline the creation of prioritized housing types, namely those that are affordable to Chaffee County workforce.
  - Provide resources, both financial and real property.
  - Facilitate Smart Growth strategies county-wide.

## Appendix A: Grant Application Narrative

### Statement of Need

**Issue:** Chaffee County, Colorado is experiencing a rapid transformation in demographics which is challenging the professional capacity within the community to manage growth, address policy changes necessary to intervene in the rising cost of housing, both of renter and owner occupied structures, and mitigate the displacement of low- and moderate-income residents.

In 2016, Chaffee County commissioned a Housing Needs Assessment from Economic and Planning Systems, Inc., the results of which recommended several policy interventions to increase production of housing and affordability of housing. In response, a grassroots effort of affordable housing advocates, economic development professionals, and support service entities established a Housing Policy Advisory Committee (HPAC), which is formally recognized as an advisory body to the Board of County Commissioners. To carry out the recommendations of the Housing Needs Analysis and to coordinate the HPAC, Chaffee County Board of County Commissioners, through an Intergovernmental Agreement with the City of Salida, Town of Buena Vista, and Town of Poncha Springs, created an Office of Housing, and in June of 2018, hired a Director of Housing. This collaborative environment is poised to evaluate a variety of policy interventions to increase housing affordability and reduce displacement, and the community at large, including governing bodies, are prepared to hear these evaluations and adopt new strategies.

In addition to the Housing Needs Analysis, several other community guiding documents and initiatives have identified “Lack of Affordable Housing” as a priority issue relevant to the overall well-being of the community. In the Chaffee County Community Health Assessment & Health Improvement Plan 2017-2021, “...lack of affordable housing, although not commonly thought of as a health issue, was one of the largest issues brought up by community members.” The Envision Chaffee County Community Action Plan, adopted in 2017, includes a vision where “...our community members are able to live locally and benefit from a resilient economy,” fed in large part by the dramatic increase in housing costs, an understanding for the need to re-evaluate our housing and land use strategies, and the execution of the 2016 Housing Needs Assessment. Moreover, in the 2017 Strategic Plan prepared by the Southern Colorado Economic Development District, the Chaffee County Economic Development Corporation, lists “Develop Housing” as its first goal, stating that “...the lack of workforce housing stymies economic growth and diversity when businesses can’t recruit employees because there is no place for them and their families to live.”

Rent asked in Chaffee County has risen 125% since 2009, according to the US Census American Community Survey, with the average rent asked in 2016 being \$1,675. During that same time frame, wages earned have only increased by 19%, with the median household income for 2016 sitting at \$50,993. Housing expenses at that household income, without being rent-burdened (that is, using no more than 30% of a household’s income for rent), should be around \$1,275. In addition, homes that were previously occupied by wage-earning residents have been converted into short term rental units, where the owners are asking, and getting, close to \$200 per night. Therefore, most wage earners, and specifically low to moderate income wage earners, in Chaffee County are managing their housing costs by one or more of the following:

- Spending most of their income on housing costs, which “impacts health by limiting the income spent on health care, food, and other essential needs.”
- Moving multiple times per year, particularly prevalent with 6- and 9-month leases, where the property owner relies on the short-term rental market to capitalize on the tourist season. “Frequent moves increase the risk for mental and behavioral health problems, substance misuse, teen pregnancy, lower health ratings in adulthood, and poor school performance.”
- Living in overcrowded environments, where multiple households share in the housing costs. This overcrowding is associated with “respiratory diseases, poor mental health, elevated stress levels, increased rate of infectious disease, and high blood pressure.”
- Commuting to locations in other counties, over mountain passes in many instances, increasing the “stress of travel [sic] and more hours and money required...” to commute to work and school.
- Staying in places not meant for human habitation, where homelessness “increases ill health effects including chronic disease, infectious disease, hunger, injuries, stress, violence, disruption of medical and mental health care, and malnutrition.”
- Accepting substandard housing, which often increases “exposure to lead poisoning and asthma attacks triggered by mold and other irritants.”<sup>1</sup>

**Affected Population:** Low to moderate income wage earners in rural Chaffee County comprise the majority of the resident population and are most affected by the soaring housing costs. According to the US Census 2012-2016 American Community Survey, of the civilian employed population aged 16 years and older, 79% of Chaffee county residents earn less than the Area Median Income of \$47,125; these are considered moderate income wage earners. However, 71% of the total workforce are considered low income, earning less than 80% AMI (or \$37,700) and 21% of the total workforce are considered very low income, earning less than 50% of the AMI (or \$23,600).

Chaffee County residents have a median age of 47 and are predominantly white (93%). Of the 7,601 households, 63.7% are family occupied with an average family size of 2.64.

However, disparities exist for low to moderate income residents that are not reflected in the standard demographic data. In the past six years, wages have increased by nearly 19%; during that same time frame, rental prices have increased 104%, pricing most wage earners out of the rental market. This results in people living in overcrowded and substandard housing, in their vehicles, and in tents.

**Geographic Area:** The geographic service area for this project is Chaffee County, Colorado, a total of 1,015 square miles, containing nearly 20,000 residents. That said, the Housing Director and the Housing Policy Advisory Committee work collaboratively with the Lake County Housing Implementation Team and the Colorado Mountain Housing Coalition, and will be inviting those additional partners to educational forums.

### Project Design

**System or Policy Changes:** The existing economic ecosystem that produces housing in Chaffee County is producing very expensive homes. The elements of this ecosystem are enumerated and evaluated in the recently published report by Shift Research Labs, “Factors Impacting Housing Affordability: Exploring

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<sup>1</sup> Colorado Department of Public Health & Environment; “Housing Stability: Lack of Affordable Housing;” June 8, 2017.

Colorado's Housing Affordability Challenges in all of their Complexity," and include the market, labor, land, materials, consumer preference, and the regulatory environment. All of these elements work together to impact the costs of producing housing. The report concludes that the "...housing affordability challenge is a market problem; demand is outstripping supply." A visual representation of the Chaffee County housing production ecosystem is included at the end of this Project Design section of the application, on page .

Therefore, this project seeks to address the regulatory environment, through collaborative partnerships within the broader market, by learning about a variety of land use strategies, lean development strategies, short term rental regulations, and permanent affordability incentives, making recommendations that are appropriate to the local economic ecosystem, and adopting strategic policies, plans, and interventions. The resulting regulatory environment will increase production of housing at a lower cost and include an increase in the number of affordable homes.

**Theory of Change:** By introducing facilitated educational opportunities and civil discourse into siloed factions within a community, we will create a space for increased collaboration, community engagement, and ultimately community readiness to embrace an overhaul of the County's land use and zoning policies, affordability incentives, and short-term rental regulations. During the first grant year, the goals include community engagement, education, and policy evaluation in addition to a comprehensive evaluation of the county's short-term rental economy. During the second grant year, continued facilitation will embed the Learning Collaborative's recommendations on land use and zoning policy and affordability incentives or interventions into the County's comprehensive planning initiative.

This project design was created in response to the recently published report by Shift Research Labs, "Factors Impacting Housing Affordability: Exploring Colorado's Housing Affordability Challenges in all of their Complexity," which states that the "...housing affordability challenge is first and foremost one of supply." Moreover, the report states that this unaffordability has "...negative effects on business, public tax bases, health, and education." Therefore, bringing all of those factions to the table to learn and discuss strategies that are appropriate for the community is the first step in addressing the issue and making the production of housing more affordable, which in turn, makes the rent and purchase price more affordable, particularly when paired with affordability incentives.

While this project will not take a "Two-generation Approach" as defined by the Aspen Institute, it is expected that the system change will begin improving health outcomes over time.

According to an article in BMJ Global Health, threats to complex interventions such as the one proposed here include power relationships between stakeholders. To mitigate this threat, we will ensure that a skilled facilitator will be engaged for the entirety of the project to serve as an objective broker during these relationship transactions<sup>2</sup>.

By educating and collaborating with factions across the housing production ecosystem, the community will identify local and culturally appropriate interventions to the regulatory elements of the housing production ecosystem that will generate a more affordable housing product. When more affordable housing becomes available, the residents of the housing remain stable, and the children of these

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<sup>2</sup> Maini et al.; <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5838401/>

households will experience health outcomes associated with housing stability, including a decrease in cardiovascular disease and pulmonary disease. Families will no longer have to drive multiple hours over mountain passes to work, they will be more engaged in community activities and experience a greater sense of belonging, engage in local physical activity opportunities, and experience stability and improved health outcomes.

**Upstream Determinant of Health:** This project will address land use policy and other regulatory elements to lower the cost of housing production and include interventions and incentives to allow for negotiation of permanent affordability with housing developers. By way of illustration, it’s estimated that only 3% of the land in Chaffee County is developable. In unincorporated Chaffee County, the smallest parcel of land allowable under our current code is two acres. Each of these two acre lots can only hold one single family home and requires a private well and septic system. So, before beginning to build, on average, the land and water/wastewater systems alone cost roughly \$150,000. Therefore, new construction is targeted at high-end buyers who can afford an average purchase price of \$355,000.

Therefore, low to moderate wage earners are pushed into denser communities containing older homes. Many of the higher quality homes are dedicated to the short-term rental market, which causes a further strain on the supply. Those homes left in the long-term rental market generally ask premium rents; the average rent asked in Chaffee County in 2016 was \$1,676, which is out of reach for low to moderate income households. Therefore, they are pushed into sub-standard, overcrowded homes, or in many cases, into places not meant for human habitation, living conditions that directly increase the risk for health inequities such as cancer, cardiovascular and pulmonary diseases. This project will address the regulatory elements in land use, zoning, permitting, and short-term rental oversight to address this issue.

Through education and collaboration, this community will make informed decisions about its land use strategies to encourage and incentivize affordable housing. Educational efforts will be focused on affordable housing intervention strategies included in the Housing Office’s Strategic Plan. These strategies include the elements enumerated in the table on the following page.

Affordable Housing Interventions: Public Benefit for public input/concessions	
Linkage ordinances	Infrastructure loans
Allowing innovative construction methods	Property tax rebate or exemption
Transfer of development rights	Deferral or waiver of fees
Height waivers	Exempt construction sales tax
Density Bonus	Priority annexation areas
Parking requirements	Smart Growth Principles
PUD requirements	Incentive zoning
Use by right	Upzoning
Zero lot line development	Review and approval processes
Clustered development	Affordable Housing revenue sources

An increase in the supply of safe, stable, and affordable housing options will provide appropriate living environments for low to moderate income households, prevent displacement, and ultimately improve their long-term health outcomes.

**Authentic Community Engagement:** Using the definition of the IAP2’s Public Participation Spectrum, this project intends to create a collaborative learning environment to bring about change in the housing production ecosystem. Chaffee County Public Health (CCPH) has a long history of community engagement; our local health alliance, Chaffee County Health Coalition (CCHC), was founded so that there would be a way to bring healthcare stakeholders together for networking, education, and information sharing. Members include community partners that collaboratively work together to help solve some of the county’s toughest health and wellness challenges. Participating entities have even pooled funding streams to continue focusing on chronic disease elements. CCPH is the host site for the Regional Health Connector (RHC) program on behalf of CCHC and the other counties in Health Statistic Region (HSR) 13 which include Lake, Fremont, and Custer Counties, demonstrating our success in coordinating with non-traditional health partners and our neighboring local public health agencies. The CCPH has been an active member of the HPAC since its inception.

Low- and Moderate-income residents are well represented on the Housing Policy Advisory Committee, through their network of housing advocates. Builders, realtors, developers, and land owners, however, are often left out of the affordable housing conversation; municipal finance directors, public works directors, community development directors, and planners are also frequently overlooked in the discussions around housing affordability. These overlooked factions represent a significant portion of the housing production ecosystem and their input into this system change is critical for its success.

This project expects community members to participate in civil discourse; community members expect the County Office of Public Health & Environmental Health and the Office of Housing to represent the people of the county and provide leadership that values diverse and equitable input. This project will be responsive to diverse cultural beliefs and practices, language barriers, and other communication needs. Should participants in this project necessitate language or literacy needs, we will include the appropriate support services.

**Project Evaluation:** Complex interventions on a system, such as the one proposed to shift Chaffee County’s housing production ecosystem, are difficult to evaluate, and therefore we propose to tailor the evaluation to very local circumstances. Moreover, we would look to the Colorado Department of Public Health and Environment for training and technical assistance in the evaluation of such project, as well in hiring a professional evaluation consultant to structure and execute the evaluation activities. As a high-level overview, the quantitative data elements will include, at a minimum, the following:

*Performance Measures for Community Engagement* To monitor the Learning Collaborative and community engagement, the following data elements will be tracked at every educational gathering: number of participants, gender of participants, number of low to moderate income earners or their representatives, what sector of the housing production ecosystem they represent.

*Performance Measures for Community Readiness* To monitor the Learning Collaborative’s success in promoting community readiness, the following data elements will be tracked at every educational gathering: Pre-education understanding of topic (survey), post-education understanding of topic (survey), and each recommended modification to the land use and zoning strategies or policies.

*Data Measurements for System Change* To determine if the complex intervention changed the housing production ecosystem to produce more affordable housing opportunities, the following data elements will be tracked through 2025, at a minimum: number of building permits, location of building permits,

single or multi-family, estimated value, affordability restrictions (i.e. deed restrictions, land use restriction agreements, etc.)

The projected results of this project include community engagement, community readiness, and community input surrounding land use and zoning strategies to encourage affordable housing production, thereby increasing the supply of affordable housing opportunities in Chaffee County which will provide residents with safe, affordable housing options, reduce displacement, overcrowding, and homelessness, all of which are upstream social determinants of health.

The results of the evaluation will be published on the Office of Housing website. Moreover, a data dashboard will be created and will be accessible to the public on the Office of Housing website. This Data Dashboard will illustrate the goals for affordable housing production alongside the actual numbers of housing units produced. This will allow planners and other interested parties real-time information on the housing stock in Chaffee County.

The evaluation documents, particularly the pre- and post-educational surveys, will be available in both English and Spanish, and should a participant require further modification, we would work with our partners to accommodate.

**Outline of Activities:**

Year One, Objective 1: Launch a Learning Collaborative to engage community members with facilitated educational opportunities and policy discussions around land use planning strategies and additional interventions to increase housing affordability. This will also be accomplished by drafting a request for proposals, distributing it through the appropriate channels, hiring a consultant to execute the steps of the collaborative. Specific steps include educational opportunities relevant to each discourse community at least monthly, followed by community feedback gathering on how each topic should or should not be implemented within Chaffee County.

Year One, Objective 2: Study Chaffee County Short Term Rental stock, evaluate its economic impact, facilitate discussions regarding best practice options, and make a recommendation for ongoing monitoring. This will be accomplished by drafting a request for proposals, distributing it through the appropriate channels, hiring a consultant to execute the study, and receiving a final recommendation.

Year 2: Comprehensive Land Use Planning using lessons learned through the Learning Collaborative. This will be accomplished through facilitated engagement with the Chaffee County Board of Planning and Zoning, drafting and releasing a request for proposals, hiring a facilitator, and moving through the comprehensive planning process.



# Chaffee County and Planning Collaborative GIS Assessment

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Version 1.1*

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## Executive Overview

Geospatial data is becoming more and more ubiquitous, and it is important for organizations and governments to organize, standardize, and cooperate in the implementation and application of geospatial capabilities. Hence, a holistic approach for handling all geospatial data, technology, and processes is recommended. It starts with a review of the entire geospatial process throughout the organization, exploring new technologies and processes, and learning how others are using their geospatial infrastructure.

Argis completed an assessment of the current state of GIS for Chaffee County and the planning collaborative members, which include the Towns of Buena Vista, Poncha Springs, and the City of Salida. This assessment allowed Argis to review who is doing GIS work, what type of work they are doing, and what data they have and maintain.

The review produced a variety of results, but the overall concerns of the condition and current use of GIS were similar from organization to organization. The key general themes are as follows:

- Team members are positive and excited about GIS and are looking for ways to improve their organizations through GIS.
- Team members did not know how to find the data they need.
- Team members felt undertrained and unable to effectively use and gain all the value from the GIS tools they have available.
- Team members felt they did not have effective access to data and did not know how to share their own data to make it easy for others to access.

There were a few cases of more advanced GIS usage and methods throughout the organizations. These cases still had the overarching themes listed above where the challenges of sharing data and data access would persist.

Argis proposes that the organizations focus their efforts on two primary directions. The first is team training. Almost every single person wanted some form of training and felt that their knowledge of GIS and GIS technologies could be improved, and this would help them overall. The second is building a GIS infrastructure that is shareable and accessible through effective use of modern cloud technologies.

By tackling these two areas, the planning collaborative will gain an organization skilled in creating, maintaining, and publishing GIS data, and an infrastructure that can visualize and share that data to those that need it, whether in the public or within the various municipalities.

## Current State

A Geographic Information System (GIS) is a computer system that analyzes and displays geographically referenced information, or data that is attached to a unique location on the earth. The strength of GIS is its ability to create distinct map layers for different types of information, and then to combine those layers in any way desired or needed. Each layer consists of geographic, or spatial, data linked to descriptive tabular information. In combining layers, GIS uses known earth coordinates (like latitude and longitude) to make sure each layer lines up correctly with the others.

Many routine operations of government are tied to a location and rely on the use of geographic information to accomplish goals. For example, a municipality might want to know how suitable different

areas of the town are for development. GIS can be used to generate maps showing where various conditions exist: prime agricultural land, surface water, high flood frequency, and highly erodible land. Planners can then use this information to make decisions about zoning designations and building permits.

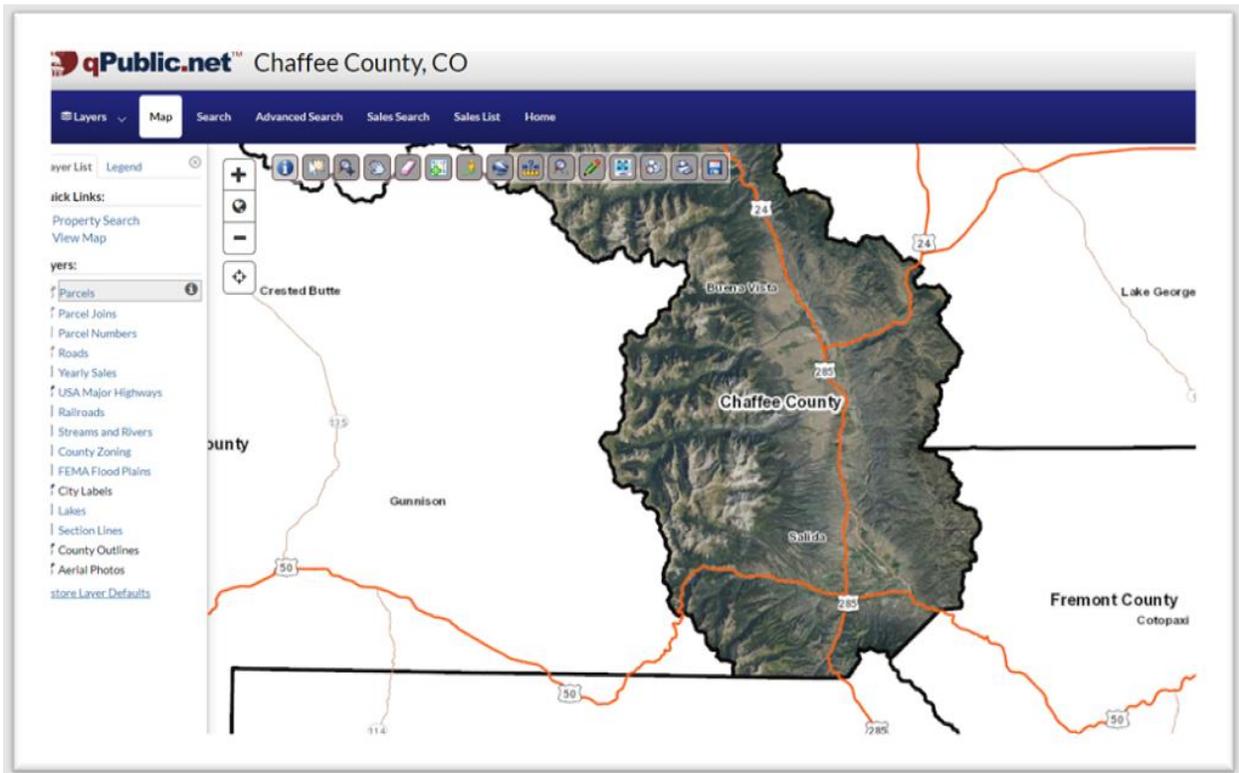
Through a series of interviews, we were able to gather information about the current state of GIS throughout the county and municipalities of Chaffee and break it down into three categories: GIS backlog, GIS pain points, and GIS goals.

There is a unanimous need for GIS throughout the various organizations but a lack of access and expertise to the necessary tools, limiting the execution of GIS tasks such as creating, viewing, managing, and sharing necessary data. Most groups are currently using minimum GIS to address immediate and internal needs and have a strong desire to create data that can be easily shared at various levels within their organization, throughout the county, as well as providing needed information to the public.

### Chaffee County

<https://www.chaffeecounty.org/>

Most of the GIS efforts and data currently in use at the County are generated and maintained by the County Assessor's office. The [Chaffee County map](#) is interactive and accessible to the public on the County website. Departments throughout the County have a need for additional GIS resources beyond the online map and layers available to support projects such as redistricting, planning, and development.



## Chaffee County GIS Professionals

There are several County employees with GIS experience, but they are spread throughout several departments, and communication is limited:

- Office of Emergency Management - Rich Atkins, 9 years of GIS experience
- Planning Department - Christie Barton, 3-5 years of GIS experience
- Assessor's Office - Dean Russell, 10+ years of GIS. Provides most of the GIS data used throughout the County and municipalities.
- County IT group – Years of GIS experience unknown. Handles on-the-fly map requests: transportation routes, etc.

## GIS Backlog

1. Data – Several GIS data initiatives are needed through the county.
  - Chaffee County Evacuation Plans
  - Mapping Hazard Mitigation Plan
  - Situational Awareness Procedures for damage assessment
  - Debris Management
  - 911 CAD system for first responders
  - Map of Emergency Help Spots located throughout the County
  - Comprehensive Plan implementation
  - Capital Improvements Plan
  - Infrastructure study
2. Access and Management – Additional backlog to visualize and access data and then update it as required.
  - Wildlife habitat and slope
  - Transportation Plan to Multi-modal Transportation Plan
  - Subdivisions, boundaries, deeds, covenants, and associated documents
  - Cell phone towers
  - Solar farm locations
  - Infrastructure/planning and development
  - Storm water systems
3. Cloud GIS – There are existing needs for cloud GIS for internal/external sharing and visibility.
  - Chaffee habitats
  - Focused development to sustain wildlife

## GIS Pain Points:

GIS pain points for the County are focused on data, access to data, and resources with time and the expertise sufficient to deliver GIS needs.

1. The data available are:

- Disseminated and difficult to access
  - The data available is often in many different formats, some of which I do not have the proper software to open.
  - The data available is in various places on a network that I do not have access to.
  - Receiving layers associated with my municipality is expensive. I provide the data to the county and get charged to receive it back.
- Inaccurate or incomplete
  - The GIS layers available are limited and are not relevant to my department.
  - The GIS layers provided for my department or municipality are often not the most current, or the data is inaccurate.
- Naming conventions not intuitive
  - The internal data layers available for my municipality are not given intuitive names and I have a hard time finding what I need.
- Hard to edit
  - The data layers provided are not enabled for editing (updating or modifying) by anyone other than the creator of the data layer.
- Not coordinated and connected with surrounding and unincorporated areas
  - Some municipalities share utilities that are maintained by a neighboring municipality. Therefore, they might have data that I need but I do not know what they have.
- Difficult to use for analysis
  - The data layers provided are difficult to query for analysis such as extracting the amount of planning and development to document change over the years.
- Need a viewing platform that does not require an expensive GIS license
  - I do not have access to mapping software, but I still need to access maps on my desktop and tablet for field work.
  - I would like to provide maps that are accessible to the public, who will likely not have access to proprietary mapping software.
- Static data
  - The PDF and online maps need to be more interactive to be useful.
  - PDF maps are provided but they have too many layers and I cannot turn them off. I need to be able to see what is displayed underneath that might be more relevant to a specific project or data-gathering effort.

## 2. Resources

- Insufficient GIS backup
  - GIS would make our jobs more efficient, but there is no one to do the GIS work except me for my department or team.
  - I am overwhelmed with GIS data requests and maintenance for the county departments and various municipalities.
- Delayed data request fulfillment
  - There is a wait for GIS data deliverables.

- No access
  - Groups within the County do not have access to active directory servers and firewalls separate various departments.
- No access
  - The only publicly available online map is the assessor map.
  - I do not know what data is available.
  - I must send an email requesting data and refer to the email string for locations and links.
  - The online maps created for the Envision Chaffee County are not available on their website.

## GIS Goals

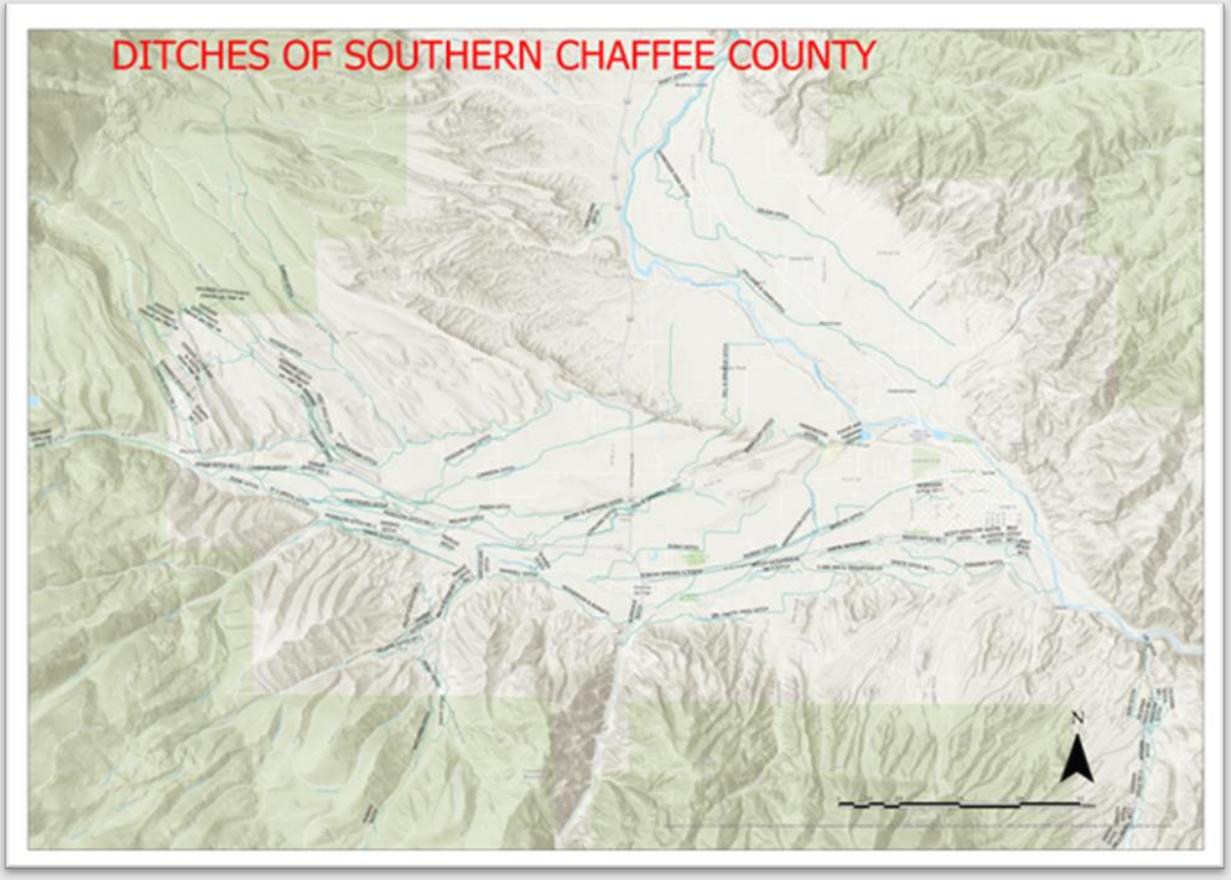
The County team is enthusiastic about GIS and excited to have a more robust system in place with better access to use it in day-to-day activities. Primary needs revolve around access to the data, tools, the ability to visualize data, as well as training to use those tools and data.

1. Enterprise GIS
  - To better interface with the community
  - Better use of GIS technology
  - To link data throughout the organizations and make it easily accessible in one place
2. Data
  - Create building footprints
  - Create publicly available online maps
3. Trainings
  - ArcGIS Pro
  - ArcGIS Online
  - Advanced subjects:
    - Editing workflows
    - ArcGIS Online administration
    - Data publishing workflows

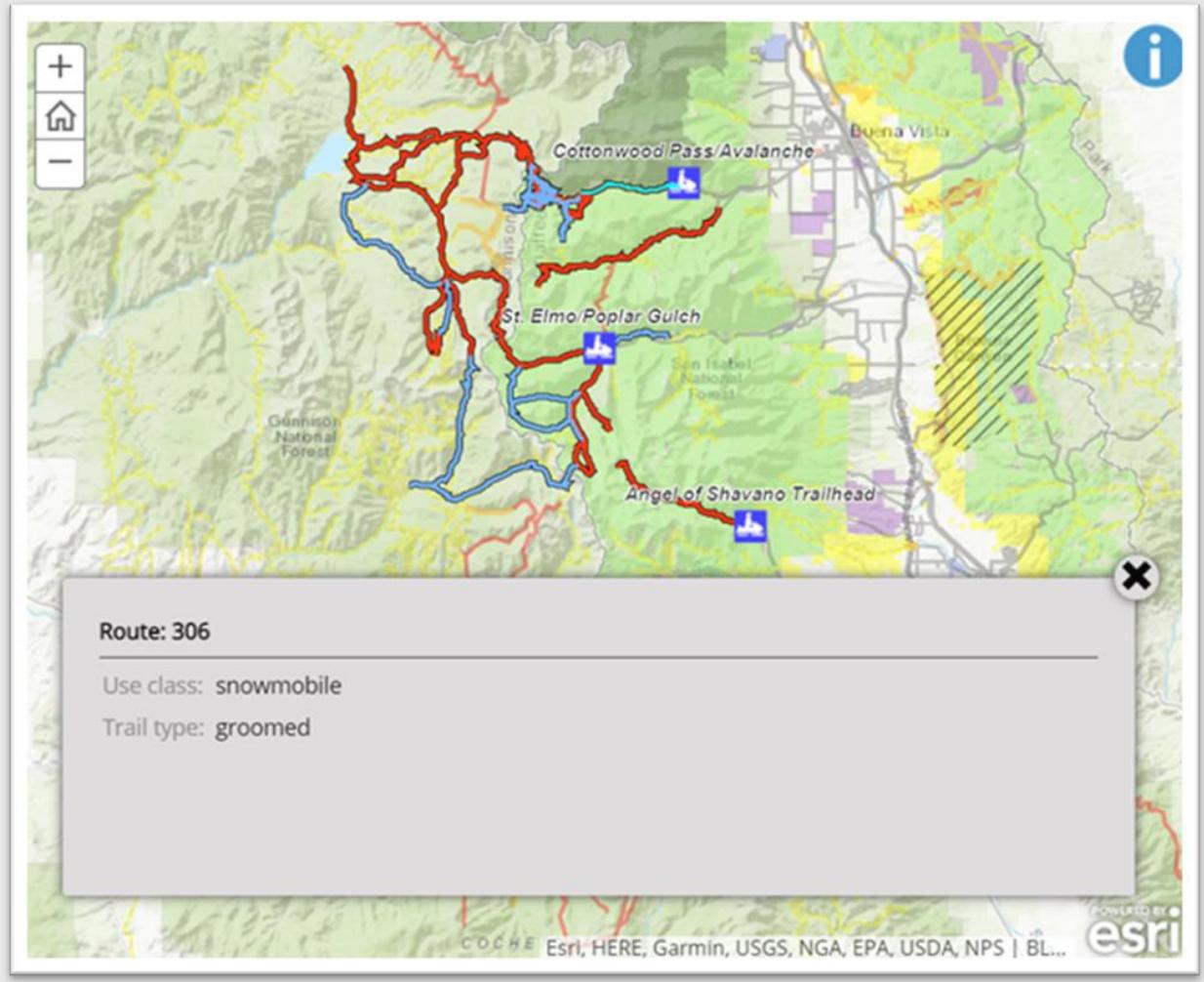
Buena Vista

<https://buenavistacolorado.org/>

Buena Vista owns and manages their own GIS data and tools. The focus of this team is primarily on parcel and utility data management. Data and analysis for the Town are primarily used internally and provided through static maps with no option to pan or zoom to locations of interest.



USDA recreational maps are also available at [buenavistacolorado.org/map](http://buenavistacolorado.org/map). The coverage area includes the entire county, rather than just the Town of Buena Vista, as a user searching the Town's website might expect. Users can pan, zoom, and (as shown below) select individual trails for additional information on the USDA map.



## GIS Professionals

The Town has one primary GIS professional. He focuses efforts on data management and coalition. Primarily skilled in esri's ArcGIS Desktop software, most GIS work is completed using a desktop computer with analysis performed at the desktop level as well.

## GIS Backlog

Buena Vista is primarily focused on data creation through the digitization of paper maps. This makes data accessible throughout different departments within the organization. They hope to move data to a cloud and make it accessible outside of their organization to the county, neighboring municipalities and the public.

1. Digitizing paper maps and stop adding to the paper pile
2. Move to cloud GIS environment
3. Generate interactive GIS data for internal and external users

## GIS Pain Points

Buena Vista's pain points include a need for data access and visualization of that data. Additionally, there is a need for training on the tools required for managing the data once they have it.

### 1. Data

- I need current data to do more accurate and efficient analysis such as
  - identifying patterns and trends
  - new and current development
- Paper maps
  - We have only paper maps to use as points of reference in the office and in the field.
  - I have no way of digitizing paper maps.
- No topography data
  - We have different building regulations based on various elevation levels. The topography maps available only show elevation at every 40 feet, it would be helpful to have data for every 10 feet.
- Assessor data
  - The data available for the Town is outdated, often wrong, and/or missing information.
- No historical information for infrastructure
- Aerial imagery
  - Aerial imagery available is 10m resolution.
  - Aerial imagery provided is outdated.
- Receiving layers associated with my municipality is expensive.
  - I provide the data to be updated and get charged to receive it back to me.

### 2. Resources

- There are minimal staff with GIS skills to keep up with our needs.
- We do not have the data that we need.
- Searching for third-party data available online takes a lot of time.
- Asset management software is needed to improve and speed up field collection for efficiently managing infrastructure and utilities.

### 3. Field Capability Needs

- Tablets and GPS equipment would be useful for field workers to update and track resources in the field.
- Public works teams require access to maps for field collection in areas that have no internet access.

### 4. Quality Assurance

- ☐ The necessary data to manage Town assets is not available.
  - I use what I can find online and cannot verify the accuracy.
  - We need accurate and current data for light poles, sewer system, building footprints, subdivision plots, and special event maps.

## GIS Goals

Buena Vista's goals align with the others throughout this report: they require access to current and accurate GIS data, training, and visualization. Their goals also extend to providing public access to GIS information, and they would like tools to give better service to their constituents while relieving pressure on staff.

1. Data
  - Public maps: online property information and historical records
  - Accessing historical maintenance data on infrastructure
  - Mapping for special events, current street closures, construction, housing counts, etc.
  - Accurate topography data (every 10 ft.)
  - Not adding to the paper-map pile
  - Interactive PDF zoning map online
  
2. Training
  - ArcGIS Pro
  - ArcGIS Online
  - Advanced subjects:
    - Field tools
    - Editing workflows
    - ArcGIS Online administration
    - Publishing workflows
  
3. Resources
  - An asset management system for locating utilities and breaks
  - Cloud environment
  - Access to data in the field
  - Capital support for GIS

### Poncha Springs

<http://ponchaspringscolorado.us/>

Last year, Poncha Springs worked with North Line GIS, a local GIS services company, to help digitize and organize data layers that were previously only available in paper format. North Line scanned and digitized all the paper maps and made them available online. Currently, Poncha's maps are only available for internal use and provide no mapping resources to the public.

## GIS Professionals

Poncha has one GIS professional on staff solely responsible for managing the Town GIS data. It is a part-time effort and will remain so for the foreseeable future.

## GIS Backlog

Poncha is perpetually in data verification and creation phase, focusing on validity, accuracy, and completeness.

1. Verify water infrastructure
2. Data accuracy
3. Adding new infrastructure

## GIS Pain Points

The pain points revolve around the limitations on time to dedicate to GIS work. The knowledge is limited and therefore is in danger of being lost when that resource leaves or retires.

1. Resources
  - We have a need for access to shared data from neighboring municipalities.
    - The data necessary is not publicly available for ease of access or sharing.
    - I do not have the necessary applications to open and use data when it is shared.
    - It is difficult to share data with the applications that I have available to me.
  - Data and resources available for the town are not easily accessible or in a common location.
  - GIS knowledge is not documented. When the person who created the processes and workflows leaves, the institutional knowledge goes with them.

## GIS Goals

The Town of Poncha Springs is looking for ways to make data more accessible and accurate while minimizing the effort to make this happen. Additionally, they could use training to learn more about what they can do with the tools available to them and better understand what GIS features and functions would be of benefit.

1. Data
  - Real-time data updates
  - A designated GIS resource such as a GIS technician or GIS analyst available to help implement and alleviate the GIS needs and backlog.
  - Reduce redundancies
  - Establish an online GIS platform
2. Training
  - ArcGIS Pro
  - ArcGIS Online
  - Advanced subjects:
    - Editing workflows
    - Field operations
    - ArcGIS Online administration

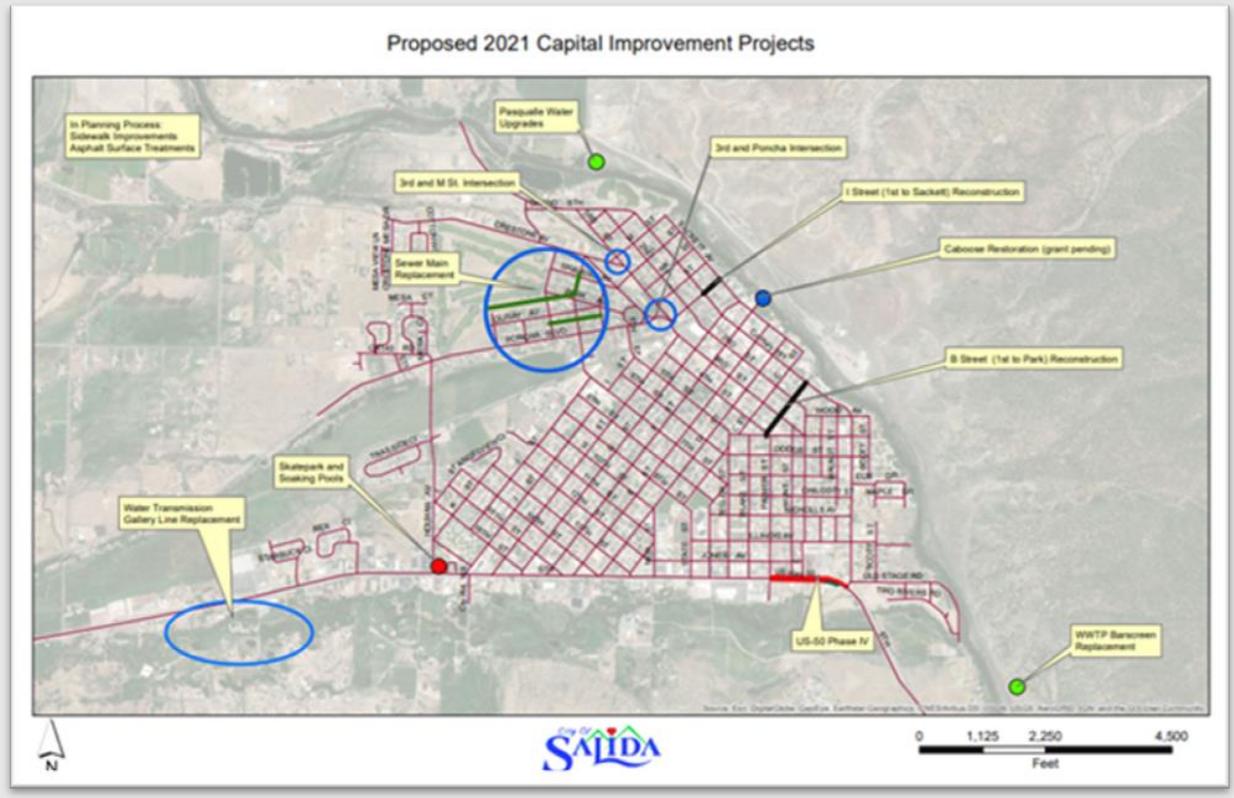
Salida

<https://cityofsalida.com/>

The City of Salida is an active leader in GIS and has collected a large amount of data for their city. They have similar challenges as the other municipalities when it comes to data acquisition, visualization, and training. Salida provides limited availability for public maps, such as third-party [historical maps](#) detailing Salida from 1883 to 1914. All maps are published in static PDF format, providing no dynamic layers for viewers to turn on or off for better visibility.



Sanborn Fire Insurance Map



## GIS Professionals

Salida has a team that supports GIS, including one part-time GIS technician who manages and develops the data on a day-to-day basis.

## GIS Backlog

Salida would like to primarily focus on data organization and make sure that more than one or two people understand the data and how to use it. They would like to make their data available to other departments and on their website for public consumption.

### 1. Data

- City website updates are difficult (see GIS Pain Points below), and therefore no maps are currently available on the city website.
- The planning department does not have access to the resources required to implement planning and parcel data set updates.
- Access is needed to regularly updated base maps to use beneath city data layers.

### 2. Resources

- The GIS workflows currently in use are not documented. It is all institutional knowledge. The City is at risk of losing information when employees with GIS expertise retire or leave.
- No inventory of agency data is available.

## GIS Pain Points

One of Salida's primary pain points is tracking down third-party GIS data that could benefit the City.

1. Data
  - As much as we try, there is still outdated and missing city data sets.
2. Resources
  - The website was created by a contracting company for the City to be able to add PDF maps. But uploading the links to those maps is proving difficult and departments are not able to complete the data uploads.
  - There are many third-party GIS companies providing data relevant to the City. Inventorying third-party GIS data is time consuming.

## GIS Goals

Salida's GIS goals focus on data, training, accessibility, and visualization.

1. Data
  - Share data city-wide
  - Automate updates
  - Public access for planning
  - Public amenities maps: public parking, recreation, pedestrian access, trails/scenic walks
  - Create and update infrastructure layers
  - Incorporate GIS throughout the City (OpenGov for financial reporting)
  - Integrate a bigger asset management system that will keep up with future growth
2. Training
  - ArcGIS Pro
  - ArcGIS Online
  - Advanced subjects:
    - Esri 3D
    - Esri Scene
    - Editing workflows
3. Resources
  - Framework improvements
  - Coordinating City and County goals

## Organizational GIS Infrastructure

Esri provides a popular suite of GIS tools for creating, managing, and sharing data. The following Esri licenses are purchased and administered directly by each organization:

<b>Chaffee County</b>	
<b>Noxious Weeds</b>	ArcGIS Online GIS Professional Basic Term License
	ArcGIS Tracker for ArcGIS Online Term License
<b>Office of Emergency Management</b>	ArcGIS Desktop Advanced One Year Timeout for Personal Use License
<b>Assessor's Office</b>	ArcGIS Desktop Advanced Concurrent Use Perpetual License
	ArcGIS Publisher for Desktop Concurrent Use Perpetual License
	ArcGIS Desktop Basic Single Use Perpetual License
	ArcGIS Desktop Basic Single Use Perpetual License.
	ArcGIS Desktop Basic Single Use Perpetual License.
<b>Town of Buena Vista</b>	
<b>Planners Office</b>	ArcGIS Desktop Basic Single Use Perpetual License.
	ArcGIS Desktop Basic Single Use Perpetual License.
<b>Salida</b>	
<b>Public Works Dept.</b>	ArcGIS Desktop Basic Concurrent Use Perpetual License
	ArcGIS Desktop Basic Concurrent Use Perpetual License
	ArcGIS Desktop Basic Single Use Perpetual License.
	ArcGIS Online Viewer (Formerly Named User Level 1) Term License
<b>Administration Office</b>	ArcGIS Desktop Basic Concurrent Use Perpetual License
	ArcGIS Desktop Basic Single Use Perpetual License.
	ArcGIS Desktop Basic Single Use Perpetual License.
<b>Poncha Springs</b>	
<b>Managers Office</b>	ArcGIS Online Creator (Formerly Level 2 Named User) Term License

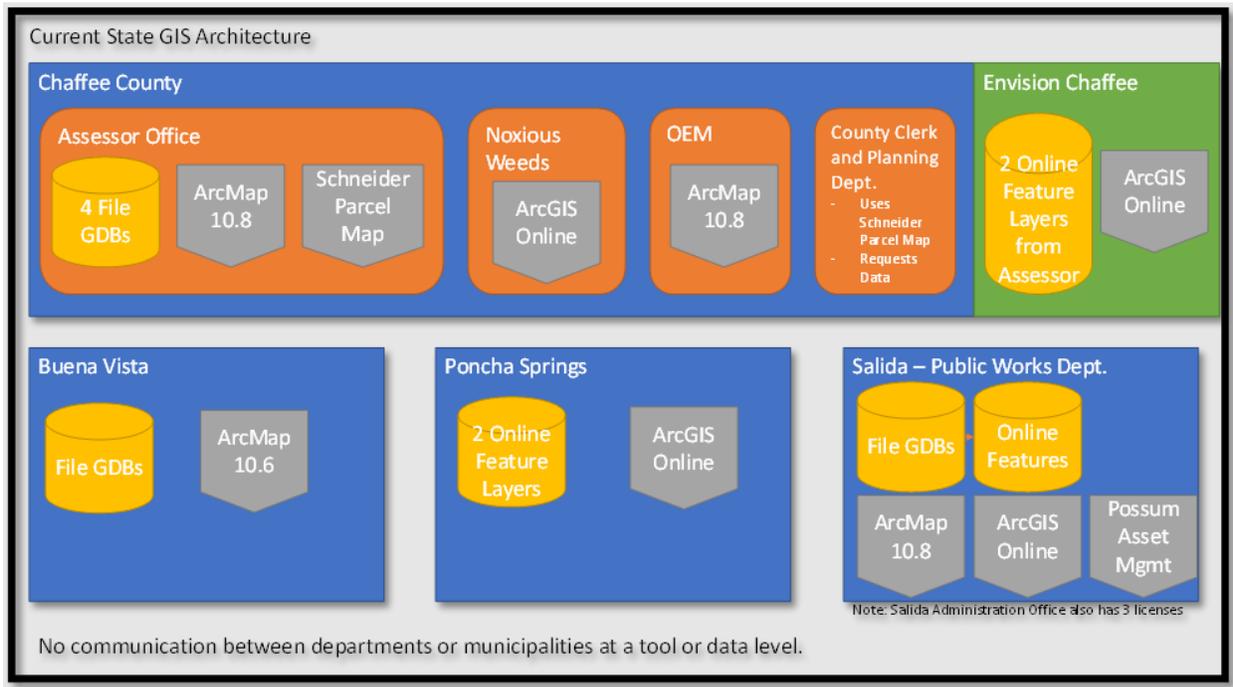
Throughout **the County** not all users have access to the network where most GIS data lives and clearing the firewall is problematic. This creates difficulty sharing data and delegating GIS responsibility. County email is not synced across devices (computer, tablet, phone, etc.) making it challenging to access data across various devices in the office and out in the field. Thus, data is shared through personal email or OneDrive.

In addition to Esri products, the Office of Emergency Management has implemented [MARPLOT](#), part of the CAMEO software suite; [WebEOC](#), for emergency management; Google Maps, for addresses; and free online GIS applications to complete GIS tasks.

**Buena Vista** uses an ArcGIS 10.8 single use license, with no access to ArcGIS Online, but they would benefit greatly from utilizing cloud infrastructure.

**Poncha Springs** uses Google Drive to access data across platforms and ArcGIS Online to reference digitized paper maps. Trimble Geospatial Positioning Systems (GPS) are used by the Public Works crew to acquire data in the field to update infrastructure and utility maps.

The **City of Salida** is using the latest version of ArcGIS Desktop and ArcGIS Online to manage and share GIS data throughout the City.



The figure above is a representation of the current GIS architecture within the County and municipalities. The diagram’s symbols are defined as the following:

- Blue boxes are each a distinct municipality.
  - The green box is the sub-organization, Envision Chaffee.
- Orange boxes are departments within the County.
- Yellow cylinders are the data structures. Mostly these are file geodatabases or groupings of shapefiles in folders.
- Gray arrows name specific GIS applications that are in use by various personnel.

### GIS Workflows & Commonalities

The County Assessor provides most of the GIS data used throughout the County and municipalities. They maintain three or four file geodatabases categorized by administrative, parcels, subdivisions, transportation, hydro, etc. These geodatabases can be accessed through the Assessor website, [www.chaffeecounty.org](http://www.chaffeecounty.org). In addition, the Assessor’s office generates and maintains the web maps for the Envision Chaffee County community project, <https://envisionchaffeecounty.org/>.

The maps generated from the county are beautiful but the data available for independent GIS use is too dispersed to be useful. The layer naming convention is not intuitive, making it hard to find things. Data

requests are filled months after they are requested and after they are needed. Web GIS access is limited and updating or creating new layers is difficult.

Third-party data sources for GIS information are used in addition to county data provided. These publicly available layers include [www.arcgis.com](http://www.arcgis.com), neighboring county maps found online, Esri Living Atlas, Forest Service and BLM layers for Colorado, public layers from ArcGIS Online, Esri dashboards, and census data.

### **Buena Vista**

The Town of Buena Vista has three geodatabases, but the data is not current or detailed enough to do efficient analysis, such as tracking current or historic development. The Town does not have the ability to generate or maintain their own data. The process to update the data they have is expensive and time consuming. Therefore, it is difficult to maintain or edit for accuracy. New data is provided in paper map format rather than a digital version. This contributes to the backlog of paper maps to be digitized for use in the field or sharing with the public online.

### **Poncha Springs**

Poncha Springs utilizes GIS data that they create as well as county data shared through email links. Paper maps used for reference in most GIS projects were digitized in 2020 by North Line GIS, a third-party GIS company, and are now accessible online in PDF format. The data now needs to be verified for accuracy and new infrastructure added as it happens. There is an urgent need to share infrastructure and utility data with neighboring municipalities.

### **Salida**

The City of Salida's data is dispersed based on type (infrastructure, utilities, etc.) among several geodatabases stored either locally on a desktop or in a city-wide shared GIS folder. Many of the City maps are accessible through ArcGIS Online, but only to internal users. They currently have no publicly accessible data but would like to be able to share what they have with other city departments and the public. Salida tries to utilize local data made available by local GIS companies but does not have the resources to inventory and catalog all the third-party data available.

### **GIS Data Dictionary**

The Data Dictionary details the various data sources available from each municipality. There were approximately 1,215 layers identified between the County and four municipalities. Please refer to the [Data Dictionary](#) Excel spreadsheet for detailed information about each layer. The contact information for the GIS representative for each organization is as follows:

- Chaffee County: Dean Russell  
[drussell@chaffeecounty.org](mailto:drussell@chaffeecounty.org)
- Town of Buena Vista: Doug Tart  
[dtart@buenavistaco.gov](mailto:dtart@buenavistaco.gov)

- Town of Poncha Springs: Brian Berger  
[manager@ponchasprings.us](mailto:manager@ponchasprings.us)
- City of Salida: David Lady  
[david.lady@cityofsalida.com](mailto:david.lady@cityofsalida.com)
- Colorado Department of Public Health and Environment  
[CDPHE Open Data](#)  
Devon Williford  
[devon.williford@state.co.us](mailto:devon.williford@state.co.us)

## Future State

Chaffee County and the municipalities contained therein have an excited group of personnel passionate about making GIS better for their organizations. Each organization has worked to get a basic GIS established and have built core data to help achieve their organizational goals at varying levels. This planned future state goal is to achieve a GIS architecture that allows for easy data sharing, both between departments and organizations and with the public in the future.

To achieve this goal, two primary activities need to occur. First, provide training for those involved so they can make the most of the modern tools that GIS technology, specifically Esri, have to offer. Second, make data available, accessible, and easy to find is key.

Training will not only empower each department and individual to better contribute to the overall data fabric of the County, but also educate others on the possibilities that come with a robust, integrated GIS solution. This will bring about ideas and focus direction for the future.

The efficiency of available data will free up time and resources. Move data to a shareable platform, and train people to use those platforms. This shareable platform will open opportunities, not only for data available among the municipalities, but also for the public and advanced workflow applications such as:

- Field Data Operations
- Integrated Asset Management
- Integrated Emergency Response Plans

This list can be expanded for all spatial needs of the area. Once the data is available and established, the collaboration can turn to advancing workflows for data creation, data maintenance, general portal administration, and specific work functions. The data will be available, and tools exist for advanced analytics and workflow, creating value throughout the region.

Finally, a key to succeeding in this overhaul of the GIS organization is establishing a GIS oversight group within the County and municipalities. Initially, this group will share changes in the data dictionary that occur in their respective organizations. However, as the tasks laid out in this plan start moving forward, this committee will help roll out each of these goals, updating them as time and requirements change the direction of the organizations. Setting up a 30-minute GIS standup every other week is recommended. The standup would cover what was accomplished this period with GIS, any data changes (assign an owner to the data dictionary to be updated accordingly) and identify any data needs. The effort will pay off in the long run with more efficiency and the freeing up of resources.

## GIS Infrastructure/Tools

Argis recommends that each organization continue to hold their own license agreement with Esri. In discussions with Esri, it was determined that this would keep each organization within good license agreement and allow them to cooperate through Esri's ArcGIS Online cloud platform. The following section details a basic license structure and example costs to give a ballpark estimate on future costs for Esri licensing for the County and all municipalities.

In discussions of this infrastructure with Esri, they have shared several options for each organization. Chaffee County could possibly benefit from an Esri Enterprise Agreement (EA). Each municipality does not show a license count need large enough to worry about an EA but will have some licenses increase

so that more people in their organization will have access to the ArcGIS Online implementation for their organization.

Your Esri representative is Bryn Brum ([bbrum@esri.com](mailto:bbrum@esri.com)). Argis is happy to help your organizations get quotes for the final and accurate license counts. What is included here is estimation only, for the purpose of guiding towards a future state identified in this document.

## **Chaffee County**

The County already has 5 ArcMap licenses and some ArcGIS Online licensing. Assuming the Assessor team is using all three ArcMap licenses, the County could benefit from a 6<sup>th</sup> ArcMap license with the current staff. Because of this growing need there are options within the County for future state licensing.

The first option is simply buying additional licenses and paying yearly maintenance. If the licenses are increasing by one, and ArcGIS Online users are purchased to share among personnel for the County, this would cost approximately \$22,900, which includes current maintenance costs. Most of the new price is for a new ArcMap Advanced license at \$14K. Maintenance in the future would be approximately \$15,000 per year. As Argis did not get a chance to interview all of the Assessor staff we were not able to determine if 5 licenses are truly in active use or not. If not, this price could reduce, however it is expected that the County will be investing in ArcGIS Online users to increase the ability to share and visualize data around the County.

A second option is to upgrade to an Esri Enterprise Agreement (EA). Overall, this would be more expensive, but this option offers major benefits for future growth. Esri can provide more details, but in general, an EA agreement would allow the County to have essentially unlimited Esri licensing. Desktop licenses would be available for everyone that needs them, along with online licenses for the entire organization, including commissioners and other primary decision-makers. The price per year for an EA would be \$27,500.00. Esri is willing to stage this over a three-year period, charging approximately \$9,350 the first year, \$18,500 the second year, and \$27,500.00 the third year.

This is a decision for the County to weigh carefully. The price point of the EA is significant enough that this investment would need to be considered in this years and future budgets, offsetting against expected growth and need. If the organization grows enough to need two or three more desktop users, then it will be valuable to consider the EA. If expected growth could occur in the next 1 to 2 years, Esri's offer could be unbelievably valuable, providing additional licensing to allow the County to invest in setup and advancement of the GIS system over the next two years.

## **Buena Vista**

Buena Vista has been moving towards developing a system of record within their organization. It is expected that Buena Vista will require additional Viewer licenses for ArcGIS Online. This will happen with the addition of publishing the data to ArcGIS Online so it can be shared both publicly and securely with groups such as the Utility team. The Esri Viewer licenses can be upgraded to Field User licenses once editing in the field starts to become important. These licenses are expected to cost approximately \$1,200/year.

## **Poncha Springs**

Currently, we do not see any need to change the licensing in Poncha Springs. As better security is needed, and if the GIS team wanted to share secure data among the organization, then buying ArcGIS Online viewer licenses could benefit the Town.

## **Salida**

Salida has a strong base of usable data, so we are recommending growth in ArcGIS Online Viewer licenses, possibly upgrading to Field User licenses as the need for field data updates grows. To purchase these licenses, the expected cost is approximately \$1,200/year.

While Salida has 6 desktop licenses, it is not expected that they will need to elevate to an EA until they invest in GIS for the full utility team. The pricing would be like what is estimated in the County section. If Salida is considering this, Argis can work with Esri to find accurate pricing and include the same type of deals afforded the County.

To reiterate, these prices are estimations only. We would need to work together with Esri to obtain accurate and documented quotes.

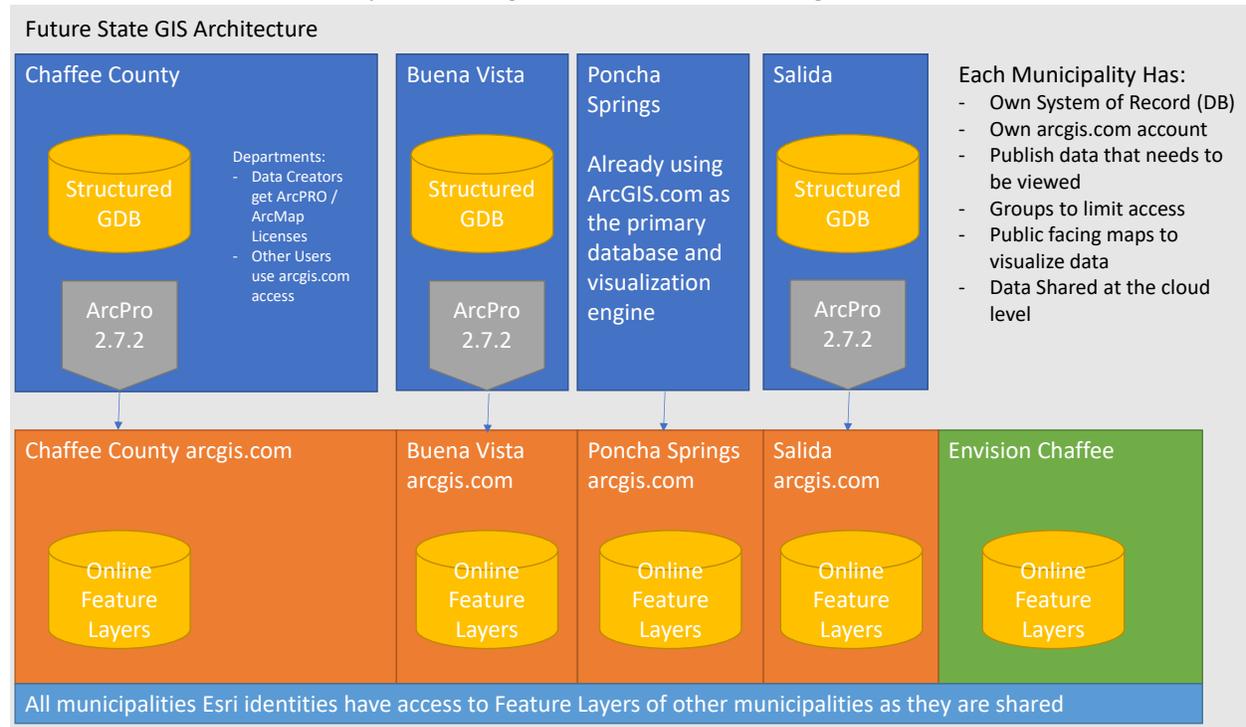
## **GIS Proposed Architecture**

Argis proposes that each organization hold their own system of record. This means that the data the organization is tasked with owning, updating, and maintaining will be in the system of record, or database. Each organization will then publish this data to be shared among specific groups with set privileges for access after publishing. In this initial architecture, published or online data will be considered read only, except for Poncha Springs, which will be fully online in this initial architecture. This means that changes or updates to the data will be completed on the system of record held by each organization and republished as an overwrite of the existing published data.

Each organization will have its own discrete ArcGIS Online organization. Creating groups and adding the Esri user will allow the data to be viewed and shared among all organizations of Chaffee County. This will meet the needs of visible, shared data that can easily be found and used throughout the County.

Additionally, this modernizes the current infrastructure by moving the organization to ArcGIS Professional with the capability of publishing to ArcGIS Online. This is the new best practice standard for

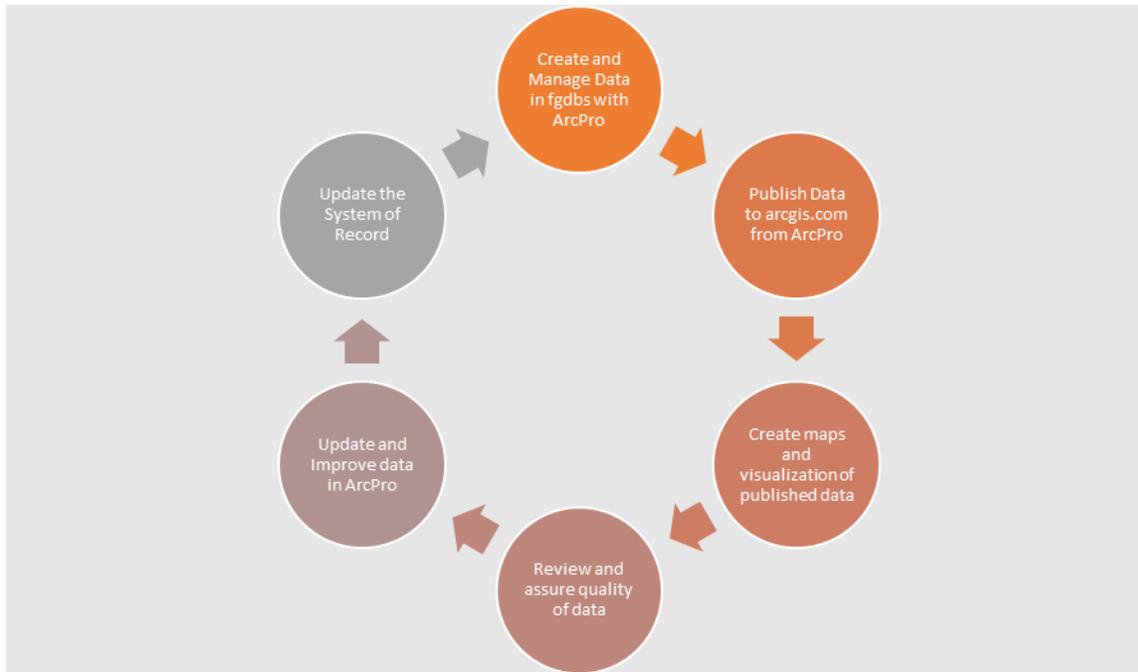
Esri and will create the stability for training and resources for the organizations.



The figure above describes the future state for the municipalities within the county. The details are designed as follows:

- Blue boxes define each municipality. The integrated architecture of starting to drive data from local hard drives to ArcGIS Online means the specific departments are not listed. The concept is that each department has created a workflow to publish, and therefore share, their respective data sources.
- Orange boxes define the online portion of the infrastructure. The goal is for each organization and department to push data up into a cloud environment that can then be either shared publicly with citizens and other organizations, or through Esri identities for secured sharing between other organizations with Chaffee County.
- Yellow cylinders are data stores. The yellow cylinders within the blue boxes are the local data stores. These will be File Geodatabases (fgdbs) that store the core information and where data is updated and cleaned. The cylinders within the orange boxes are the online data stores. These will be where the data is primarily read-only and used for visualization and sharing as the future state is implemented.
- The green box is the Envision Chaffee online presence which is another location within the Chaffee County ArcGIS Online account and the data is published from either Chaffee County or the partner organizations, such as Colorado State University.
- The gray arrow boxes represent the software that is used to manage, edit, and publish the data. This architecture identifies the County and municipalities upgrading from ArcMap to ArcPro.

The following workflow is an example of GIS data management in the County and other organizations:



## GIS Applications

The applications specifically listed within this infrastructure are identified in this section.

1. [ArcGIS Online](#) (arcgis.com)  
Make interactive maps, features and web applications available anytime, anywhere, and to anyone. Various security levels can be set to limit access where applicable.
2. [ArcGIS Professional](#)  
GIS desktop application supporting data visualization and advanced analysis. This is the modern 64-bit replacement for ArcGIS Desktop (ArcMap) that includes advanced tools for 3D data. This integrates more seamlessly with ArcGIS Online.
3. [ArcGIS Desktop](#)  
Legacy GIS desktop application to support maps, perform spatial analysis, manage geographic data, and share results. This is slowly being phased out in lieu of ArcGIS Pro.

## GIS Training

A need for a better understanding of Esri tools was a common request throughout the interview process. Esri provides a multitude of free online training available to customers under a current maintenance contract. The trainings listed directly below are self-paced and will provide a basic understanding of ArcGIS Online, ArcGIS Pro, and how to share data.

1. [ArcGIS Online Basics](#)  
ArcGIS Online is a cloud-based geographic information system used to map data, share content, and collaborate. This course will provide a foundation for working with ArcGIS Online and the benefits of using it.
2. [Share GIS Resources through Publishing](#)

Share data over the web or publish maps to an ArcGIS Online or ArcGIS Enterprise portal to create hosted web layer items. Help people in your organization or the public work with the resources these services and items represent, share them with others and include them in apps.

3. [ArcGIS Online: Administration Basics](#)

Discover the benefits of administering your ArcGIS Online organization.

4. [Getting Started with ArcGIS Pro](#)

This course introduces the ribbon-style interface, project-based organization, key capabilities, and ArcGIS Pro terminology. Users will learn to import an ArcMap map document, create 2D and 3D features, modify symbols, use geoprocessing tools to perform analysis, create map layouts, project packages, and web layers for sharing work.

5. [Editing Basics in ArcGIS Pro](#)

ArcGIS Pro provides editing tools that allow you to update existing features or create new features. Using the editing functionality in ArcGIS Pro, change the geometry of features or the informational attributes. This course will teach the editing basics and how to use workflows in ArcGIS Pro.

6. [Managing data](#)

Hosted feature layer views provide a unique set of capabilities that allow you to meet the needs of each audience. Using views helps to simplify work, reduce unintended edits, and avoid duplicating the source data. Finally, add the views to a map to compare the different user experiences. Add and delete features to confirm views are ready for use within your organization and the community.

The following is a suggested 1 day in-person training agenda. Argis can assist in finding an instructor if none are available through Colorado Mountain College.

- Mapping GIS Data
  - Learn the best type of map to display features based on data type.
  - Learn to use symbols to differentiate among data types.
  - Understand the relationship between a layer and its source data set.
- Coordinate Systems
  - Learn basic properties and best practices for using coordinate systems.
  - Understand the difference between geographic and projected coordinate systems.
  - Learn to choose appropriate projections for an application or geodatabase.
- Managing Data
  - Best practices for organizing GIS data.
  - Learn to compile data for geodatabases.
  - Learn to document data sources using metadata.

- Attribute Data
  - Learn how tabular data are stored and queried.
  - Learn how to edit and calculate fields in tables.
  
- Data Analysis
  - Learn commonly used functions to perform data analysis.
  
- Sharing GIS
  - Learn how to share data using ArcGIS Online.
  - Develop metadata to document shared items.
  - Use ArcGIS Online to drive mobile mapping and survey applications.

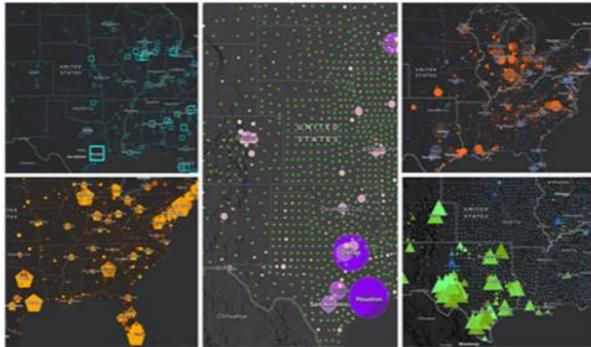
### GIS Local Data Stores

As the GIS committee gets established and a workflow is created to update and keep the data dictionary relevant and accurate, the committee will need to start including third party data sources that can benefit the overall organizations of the County. Argis has identified a few (listed below) that were mentioned as useful, but there are many more to be identified and added to the data dictionary.

- [Esri Living Atlas](#)  
ArcGIS Living Atlas of the World is the foremost collection of geographic information from around the globe. It includes maps, apps, and data layers to support your work.

## What's new

Explore items recently added to ArcGIS Living Atlas of the World, learn about GIS events, and discover ways to use content.



### U.S. GDP by industry now available

United States Gross Domestic Product (GDP), by industry, is now available in ArcGIS Living Atlas of the World. This new layer contains 2019 GDP estimates from the Bureau of Economic Analysis (BEA) for the nation, regions, states, and counties. Learn more about GDP and how to include this layer in your economic and business analysis and maps.



### USA Wildfires Live Feed update

The USA Current Wildfires layer in ArcGIS Living Atlas of the World has been updated with new fields and cartography. Updated every 15 minutes using the Aggregated Live Feed Methodology, this layer now includes calculated fields for days since an incident record was created and modified, new symbology to differentiate prescribed fires, and more.



### Broadband availability and adoption

ArcGIS Living Atlas of the World now includes a broadband availability layer for United States neighborhoods and outlying areas. This layer summarizes the Federal Communication Commission (FCC) Form 477 data by transmission technology used and speeds offered at Census Block and larger areas.



### Precipitation layers in Living Atlas

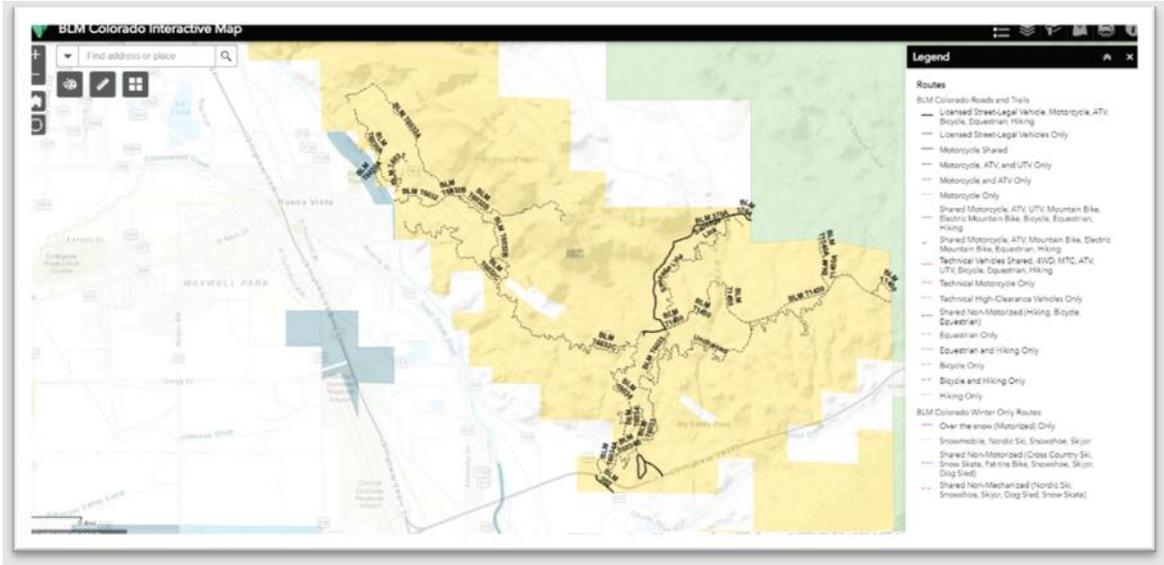
ArcGIS Living Atlas of the World includes precipitation layers that can support a wide range of environmental analysis and mapping projects. With the addition of two new layers, IMERG and WorldClim 2.1, you can display a time series of monthly precipitation rasters from June 2000 to the present and view mean monthly and total annual precipitation from 1970-2000.

- [CO-Treeview](#)

A web and mobile mapping application for Urban & Community Tree Inventory and Data Management in Colorado.

- [BLM Colorado Interactive Map](#)

The Bureau of Land Management (BLM) Colorado offers a variety of GIS data sets as web services that can be consumed and viewed within web mapping applications. This interactive map shows the statewide BLM data available.

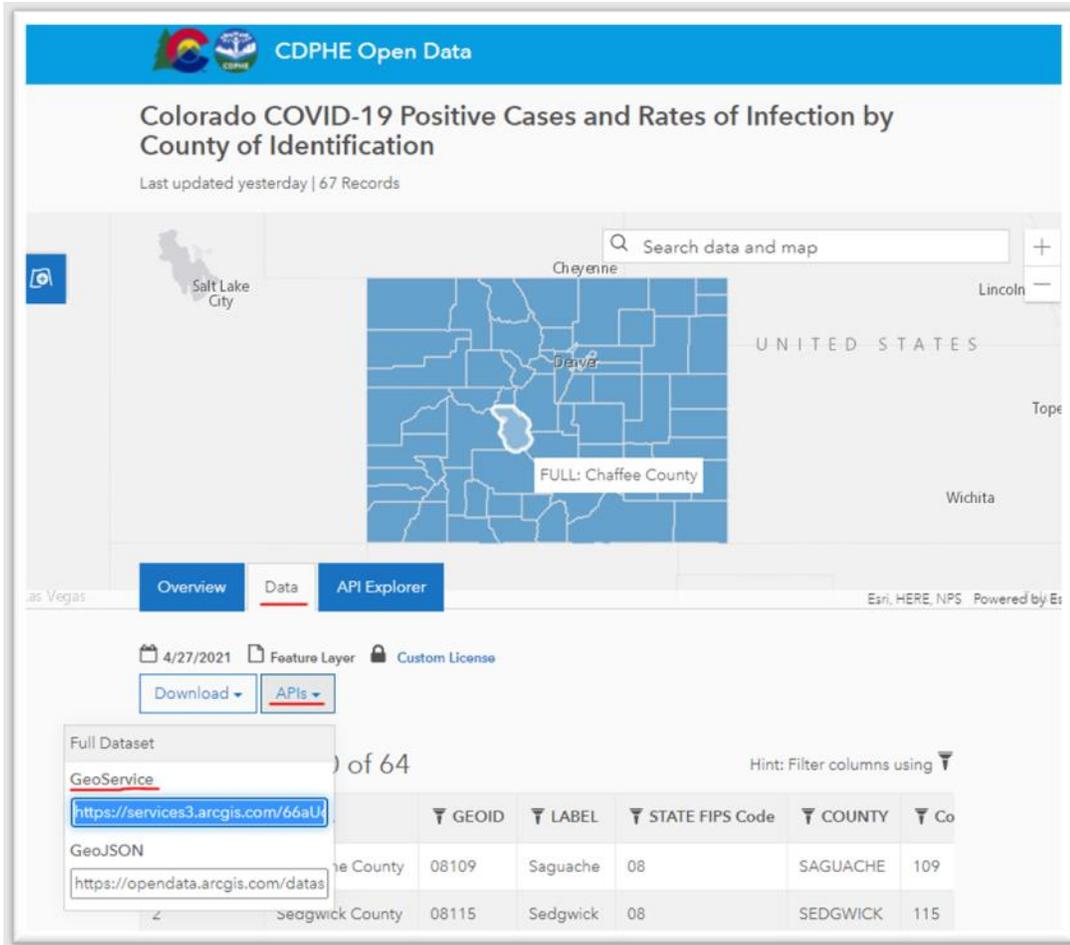


- [Colorado Public Health and Environment Open Data](#)

The NEW Colorado Department of Public Health Information Dataset (CoHID) provides improved access to state and local-level data and resources compiled by the Colorado Department of Public Health and Environment (CDPHE) and its partners to help understand health and related issues affecting Colorado.

Search for public health datasets that track policy changes affecting the long-term health outcomes in Chaffee County. Access dynamic layers using the GeoService link to embed in a web map. The example below provides information on the number of positive COVID-19 cases in Colorado counties, how to embed it into ArcGIS Online (AGOL) and share it publicly.

1. Search for the [Colorado COVID-19 Positive Cases and Rates of Infection by County Identification](#) dataset on the CDPHE Open Data portal.
2. Copy the [GeoService link](#) from the *Data* tab > *API* > *GeoServices*. This will provide dynamic updates as changes are reported by the CDPHE.



3. Log into your organization's ArcGIS Online account and open a new web map.

Sign in to Argis Solutions, Inc. with

ArcGIS login

Username

Password

Keep me signed in

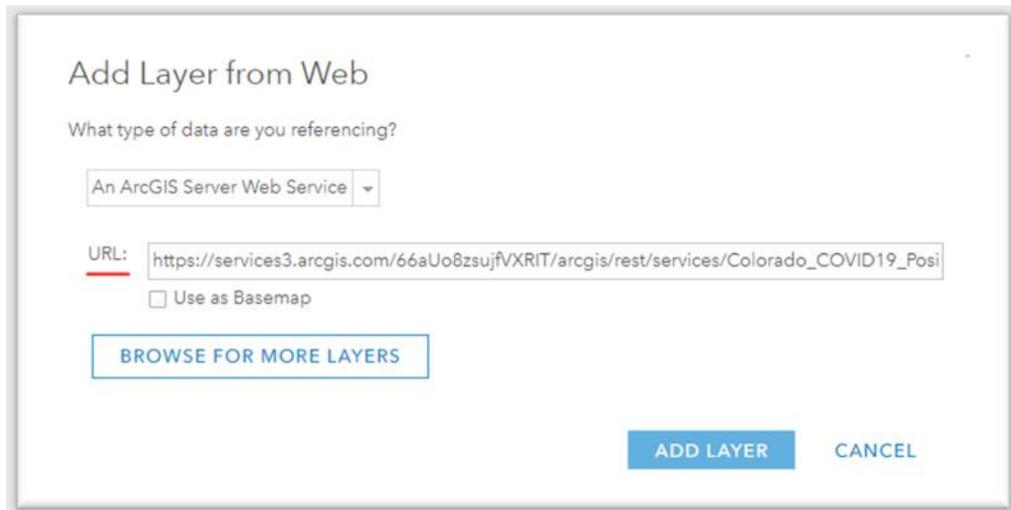
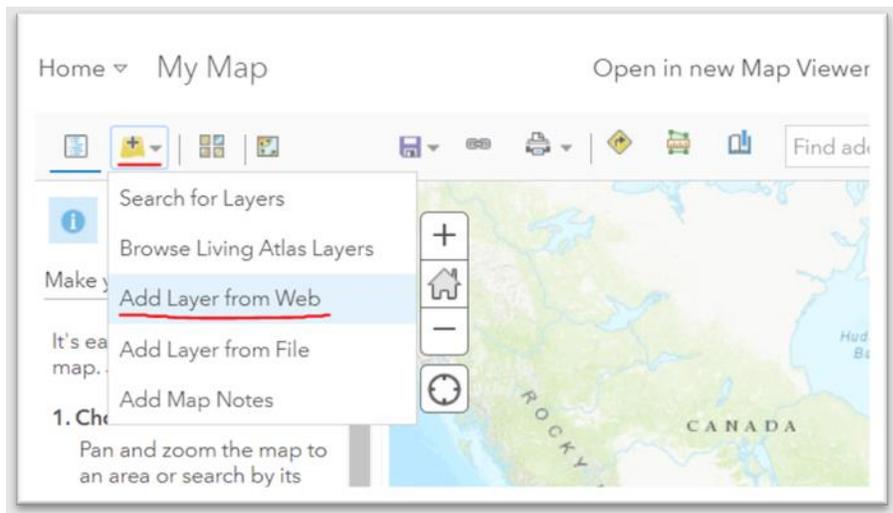
[Forgot username?](#) or [Forgot password?](#)

Not a member of this organization?  
[Sign in to your account on ArcGIS Online](#)

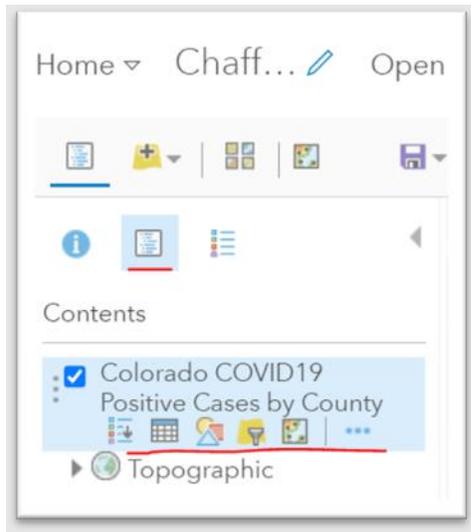
[Privacy](#)



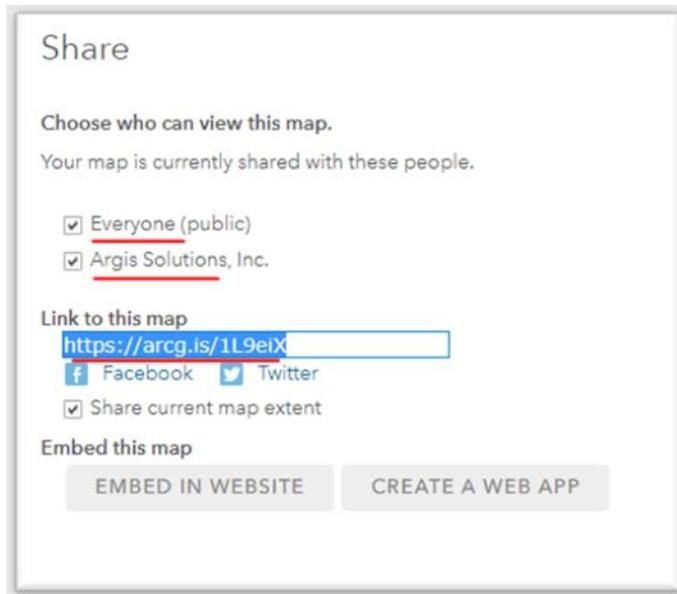
4. In the new map, add the CDPHE GeoServices data link copied in step 2 by choosing *Add Content to Map > Add Layer from Web*



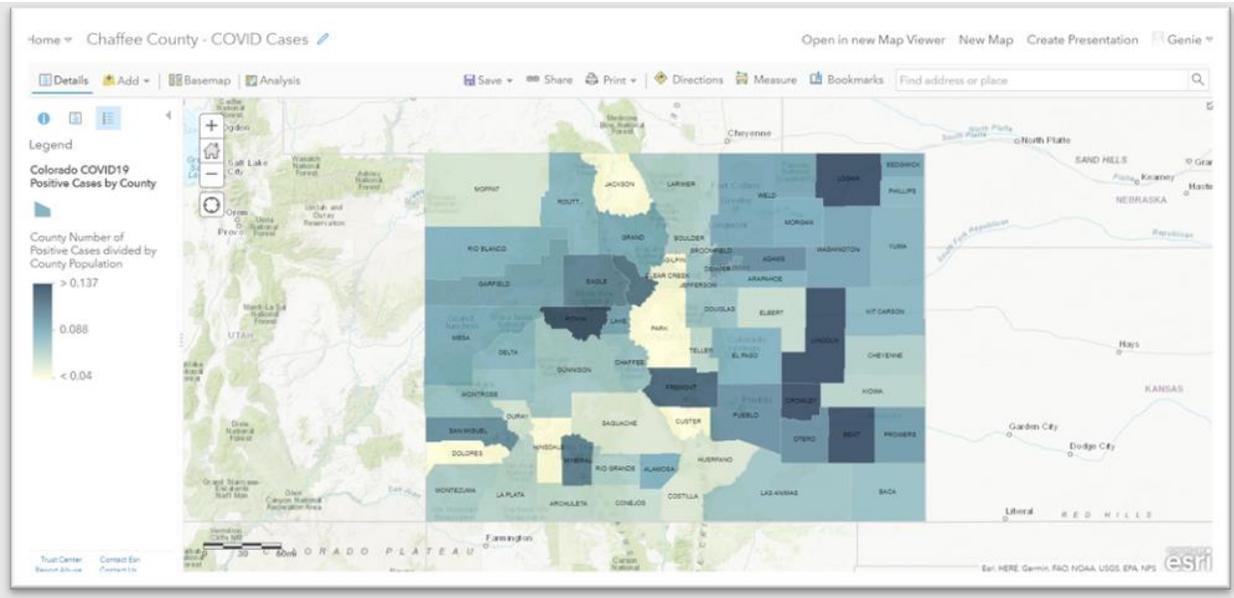
5. Personalize your map with the tools available in the *Contents* pane.



6. Save your map and choose the level of sharing. Either share within your organization or the public. Copy the link to share.



[Colorado COVID19 Positive Cases by County](https://arcg.is/1L9eiX)



This dataset is published by the Colorado Department of Public Health and Environment (CDPHE) and contains the number of COVID-19 positive cases by county, county rate of infection per 100,000 persons, death data by county, statewide COVID-19 prevalence data and associated statewide COVID-19 related statistics. This data is updated around 4pm MST daily. Further information concerning case data can be found at <https://covid19.colorado.gov/data/>.

### Planned Agile Implementation

Agile is a project methodology that bases delivery of effort and results in an iterative cycle, allowing the team and owners of the results to redirect as the project moves forward to make sure that the final deliverable will be what is needed, not what was thought to be needed at the beginning of the project. Read more about Agile methodology, specifically the Scrum methodology, here: [Scrum.org](https://www.scrum.org/).

Argis recommends the following steps as the project plan to move Chaffee County and the planning collaborative to a modern, shareable, and effective GIS platform.

#### Agile Steps:

1. Setup bi-monthly GIS Meetings with the county and municipalities
  - a. What has changed in your GIS world?
  - b. GIS Data Dictionary updates (if any)
  - c. Re-distribute Data Dictionary.
  - d. Add steps as the GIS process(es) get more complete or change.
2. Establish data dictionary and access for 3<sup>rd</sup> party data sources and providers.
  - a. Add to the initial list of 3<sup>rd</sup> party supporters.
3. Organizing Licenses and Access to arcgis.com and ArcGIS Pro
  - a. Setup Initial Free Training for ArcPro Fundamentals and arcgis.com
  - b. Setup up ArcGIS Online [user roles](#):
    - i. Viewer – View GIS content. Viewers cannot create, edit, share or perform analysis on items or data.

- ii. Editor – View and edit data shared by other ArcGIS users. Editors cannot analyze, create, or share items.
  - iii. User – Users have editor privileges and the ability to create groups and content.
  - iv. Publisher – User privileges and the ability to publish features and map tiles.
  - v. Administrator – Publisher privileges and the ability to manage organizations and users.
- 4. Go through GIS 101 Training at Colorado Mountain College or other source of training.
  - a. Work on metadata, data descriptions, projections, and known accuracy.
- 5. Determine a Publishing Workflow and official system of record.
  - a. Go through training on publishing and arcgis.com administration.
- 6. Determine what has been published and set up using the publishing process.
  - a. Start publishing data and setting appropriate rights for all users.
    - [Best practices for sharing](#)
  - b. Training on privacy levels, user [roles](#) and rights
- 7. Establish the Portal views of data.
  - a. Many choices exist for shared data visualization through web maps.
    - i. ArcGIS Hub
    - ii. Web AppBuilder/Experience Builder?
    - iii. Web map on ArcGIS Online
  - b. Training on ArcGIS Hub and open data
- 8. Establish Chaffee Collaboration Portals
  - a. Each organization has a portal on ArcGIS Online with data shared to the proper people across the county, departments, and organizations.
    - i. Internal to the organization
    - ii. Between the county municipalities
    - iii. The public
  - b. Identify specific Web applications that benefit and create future plans and projects.

## Appendix A: What is GIS?

Copied from the USGS Site: [What is a geographic information system \(GIS\)? \(usgs.gov\)](http://www.usgs.gov/what-is-a-geographic-information-system-gis/)

### What is a geographic information system (GIS)?

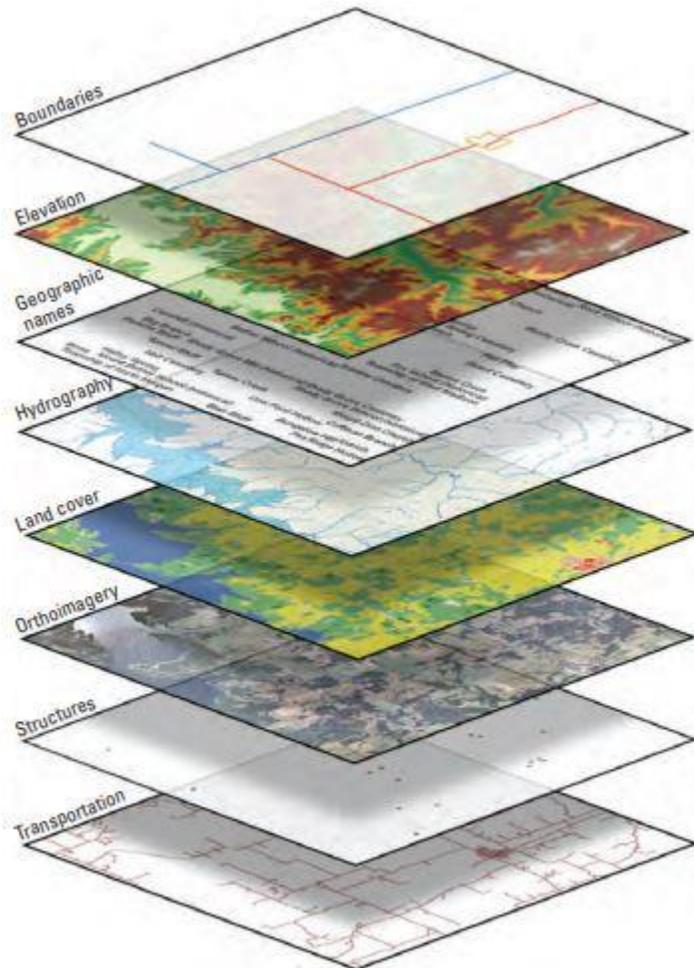
A Geographic Information System (GIS) is a computer system that analyzes and displays geographically referenced information. It uses data that is attached to a unique location.

Most of the information we have about our world contains a location reference: Where are USGS stream gages located? Where was a rock sample collected? Exactly where are all a city's fire hydrants?

If, for example, a rare plant is observed in three different places, GIS analysis might show that the plants are all on north-facing slopes that are above an elevation of 1,000 feet and get more than ten inches of rain per year. GIS maps can then display all locations in the area that have similar conditions, so researchers know where to look for more of the rare plants.

By knowing the geographic location of farms using a specific fertilizer, GIS analysis of farm locations, stream locations, elevations, and rainfall will show which streams are likely to carry that fertilizer downstream.

These are just a few examples of the many uses of GIS in earth sciences, biology, resource management, and many other fields.



**Figure 1.** Eight base layers of *The National Map*.

## Appendix B: Argis Solutions Rate Card

Argis Solutions, Inc. is a full-service GIS consultancy that can help the Chaffee County organizations with their GIS needs, from data collection and cleaning to complex architecture and software development. We include a rate card so your organizations can have a sense of the costs associated with various stages in moving this architecture forward.

Role	Rate
<b>GIS Data Analysis and Data Management</b>	\$68 / hour
<b>Senior GIS Manager</b>	\$110 / hour
<b>GIS and IT Architect</b>	\$135 / hour
<b>GIS Developer</b>	\$125 / hour

*All of the above prices can be discounted with yearly maintenance agreements.*

Argis believes that a few small projects to get the proposed architecture implemented could be very beneficial. While final pricing would require knowing the specific steps that the County and municipalities would like to implement, the following offers scoping examples:

- Setting up Web AppBuilder with configuration tools and an initial map – 10 hours
- Administering ArcGIS Online for an organization and training and confirming tools work with Esri updates – 8 hours per quarter
- Building a custom website with custom analysis tools – a large range, from 40 to 200 hours
- Building up the ArcGIS Online portal for visualization around the organization and creating links to maps for primary websites – 6 to 24 hours.

Argis hopes this helps generate ideas of future work and budget needs for the organizations. Argis is happy to discuss any specific needs and their associated costs.

## Appendix C: Root Policy Research Report, Developers Forum

### Introduction

Chaffee County, located in central Colorado, recently completed a county-wide Comprehensive Plan: *Together Chaffee County*. The County is preparing for the subsequent Land Use Code update, which will present an opportunity to address the County's growing housing challenges.

During the past two years, the Chaffee County Office of Housing has led a Housing+Health Speaker Series to explore how land use policy and system changes could facilitate housing affordability. That effort was driven by discussions with the County's Planning Collaborative, representing town and County planning directors and staff, and culminated in a Developers' Forum, representing area developers and economic development commissioners.

This report was developed by Root Policy Research, a women-owned consulting firm in Denver, to present findings and recommendations from the Planning Collaborative and Developers' Forum to inform the pending Land Use Code update. Root facilitated conversations with both the Planning Collaborative and Developers' Forum to identify barriers to development and land use solutions that would facilitate housing affordability.

**Planning Collaborative.** This group was convened with funding from CDPHE's Office of Health Equity's Health Disparities Grant Program and helped evaluate and prioritize land use recommendations.

The Collaborative included:

- Wendell Pryor, Economic Development Corporation
- Cindy Williams, Envision Chaffee County
- Mark Doering, Buena Vista Planner
- Jon Roorda, Chaffee County Planning Manager
- Christie Barton, Chaffee County Planner
- Brian Berger, Poncha Springs Administrator, et. al.
- Bill Almquist, Salida Community Development Director

**Developers' Forum.** Chaffee County Office of Housing and the Economic Development Corporation (EDC) convened this group of engaged and invested residential and commercial developers, builders, and financing institutions to identify challenges and explore solutions for creating more affordable housing in Chaffee County.

The Developers' Forum included:

- Tom Warren, General Manager Mount Princeton Hot Springs and Morgan Reed
- Matt Litvay, Mount Princeton Hot Springs
- Jeff Post, First Colorado Land Office
- Dave Blazer, EDC Board Chair
- Andrew Bascue, Project Manager, Hammerwell
- Charlie Chupp and Donnie Schell, Fading West Development
- Dustin Nicholls, TBK Bank
- Jay Smith, Collegiate Peaks Bank
- Jed Selby, President, South Main
- Joel McGuire, Hensel Phelps Engineering
- John Diesslin, General contractor, Diesslin Construction
- Karin Adams, Real estate developer
- Paige Judd, Workforce housing developer and owner/operator
- Walt Harder, Real estate developer

Members of the EDC and other stakeholders in attendance included:

- Andy Hill, Colorado Division of Local Affairs
- Becky Gray, Chaffee County Office of Housing
- Carlin Walsh, Elevation Brewery owner and Economic Development Corporation Board member
- Georgie Craig and Michael Scott, Pure Greens, major employer
- Joseph Teipel, Chaffee Community Foundation
- Wendell Pryor, Economic Development Corporation Director

## COUNTY Land Use Priorities

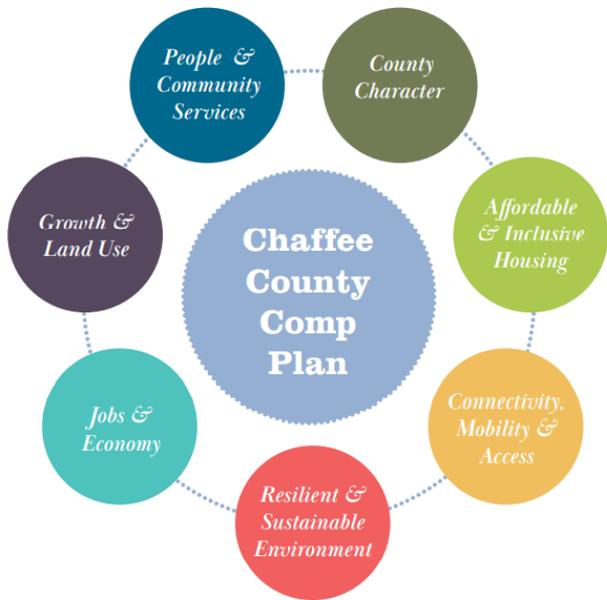
The newly adopted Comprehensive Plan— *Together Chaffee County* —identifies the following vision and priorities for land use planning in the County:

“A desire to focus high-quality growth near existing communities, and ensure development in unincorporated areas meets high quality design and use standards.”

The plan then recommends that the County prioritize the following which include two specific mentions of affordable housing:

- A land use code update that includes a new zoning code that allows for a mix of development types at different densities.
- Municipal-County collaboration and the necessary infrastructure analyses to enable more development in and around the municipalities at greater densities.
- Completion of the resource assessments, maps, and plans to guide the development of appropriate subdivision and zoning standards that will protect priority sensitive areas, open lands and community assets.
- Completion of a Regional Multimodal Transportation Plan that addresses the need for better multimodal connectivity.
- Identification of specific sites and zoning districts that prioritize the development of affordable and attainable housing to support the economy and local workforce.
- Identification of funding sources to support development of multimodal infrastructure (roads, pedestrian and bicycle trails, airport, rail, telecommunication, freight and transit) and affordable housing.

The Implementation Plan includes the specific actions associated with the above priorities, as well as a commitment that the County Planning Commission will work to steward implementation and communicate progress annually.



## Envision Chaffee County Report Card

Since 1999, according to Envision Chaffee County, 160 subdivisions have been created in the County, involving 9,570 acres (or 8% of all private lands). Currently, 51 percent of the population lives in the unincorporated county. The majority of new population growth between 2010 and 2016 (47%) occurred in the unincorporated county, according to the State Demographer. Note that, in this data, the “unincorporated county” includes growth zones immediately adjacent to city limits.

<sup>3</sup> It is noted that the two later measures could be misleading as growth in contiguous residential communities extending beyond city limits is counted negatively (included in the county numbers).

Envision Chaffee County recently prepared a Report Card on growth in Chaffee County. For that effort, the organization examined Chaffee County Assessor’s Office data showing acres subdivided within and beyond a 3 mile radius around current town limits. They also examined Census data showing population growth in towns versus the unincorporated county. Finally, data on building permits granted in towns versus in the county were analyzed.<sup>3</sup>

Taken together, the metrics indicate that 30 to 44 percent of development is occurring in areas well outside of buffer zones extending 3 miles beyond towns. Envision Chaffee County graded this growth a “D”—with a “?”—because it is not clear at this time what a target percentage may be.

### Envision Chaffee County Growth Report Card

#### RURAL LANDSCAPES AND GROWTH CONCENTRATED IN AND AROUND TOWNS

**Population in Towns vs. County** ..... **D?\***  
Half of population growth since 2010 in the county versus towns.

**Development in Towns vs. County**..... **D?\***  
62% of single family dwelling units in county over the past 10 years.

**Number of Rural Open Space Incentive Developments** ..... **D**  
The number of ROSI developments declined from 21 between 2002 and 2008 to only 1 in the subsequent years.

## Key Findings and Recommendations

**Planning Collaborative.** Two virtual meetings were held with the Planning Collaborative to discuss challenges with land use codes and the development process, and to explore solutions to facilitate affordable housing development.

### Current challenges.

- There is a lack of understanding of the development process by both decision makers (planning commissioners, city councils) and developers.
- More clarity on what is expected of developers is needed—for example, when an application is complete, the community’s vision for design, how to maximize density.
- There is a mismatch between what is being developed, what codes are incentivizing, and the county’s housing needs—including rental units, which are not being built. Most developers are keen to accommodate second homeowner needs but not locals’ needs.
- Developers need to better appreciate community growth goals and prepare to address infrastructure improvements v. fighting infrastructure requirements.
- Development design and character are important to residents—and not always the highest priority of developers—which can fuel community anti-growth sentiment and resistance to development.
- Developers need to be proactive in seeking community input and responding to concerns

### Solutions.

- Improve the development review process to: 1) Minimize uncertainty and streamline review; and 2) Provide consistent water and sewer drainage standards.
- Develop a flowchart for developers to respond to including working with the community early to ensure buy-in and help navigate anti-growth attitudes.
- Expand knowledge of elected and appointed officials about community plans—including their appropriate roles.
- Develop a concise and specific land use code which delineates areas of growth from areas of conservation. Then, use that adopted plan to guide growth, rather than respond to community anti-growth sentiment.
- Clarify the County’s commitment to curbing sprawl and driving growth into municipal growth areas—for example, if the county truly wants to preserve ranchland, it should discourage sprawling large acreage subdivisions.
- Publish a clear plan and municipal goals for annexations—to allow for a streamlined and predictable process and incorporate density and affordable housing benefits.
- Acknowledge that income-restricted affordable units are needed to maintain longer-term affordability, especially in rentals, in addition to non income-restricted units.

**Developers’ Forum.** Developers discussed the primary unmet housing needs in the county; barriers in responding to housing demand; and solutions to affordability challenges.

**Unmet housing needs.**

- “There is nowhere to rent in the county.”
- “Workforce-” or moderately-priced housing, defined as less than \$1,200 per month for rent and \$400,000 to buy
- There continues to be an unmet demand for higher-end luxury housing. Addressing this demand will lessen the competition between workforce and non-local buyers

**Barriers to residential development.**

The approval process is the most significant barrier:

- Across municipalities, new development almost always requires a zoning change, which is time consuming and raises costs
- Expectations change throughout the process as the public, planning commissioners, and city councilors become involved. The typical process requires three meetings—two with planning commission and one with city council

High tap fees that are not calibrated to dwelling unit or lot size.

**Solutions**

Process solutions:

- Increase transparency and speed up the approval process to get units on the ground, prioritizing moderately-priced units.
  - Reduce regulatory requirements for moderately priced units.

- Allow administrative approval for priority housing types including permanently affordable or deed restricted housing.
- Reduce the need for subjective interpretation of the code and require that the written interpretation be included in the code and made available to the public and developers.
- Catalogue interpretations of the code when decisions fall in “gray areas” and make this information available to the development community to facilitate better applications

Land use and zoning solutions:

- Allow increased density and smaller lots and reduce the suburban-style development incentivized by current codes. The most effective way to build up inventory is to get more units out of each project
- Allow duplexes/fourplexes and townhomes by right within growth boundaries. Align zoning, construction, and financing by modifying codes to allow 4-unit developments by right. This is allowable by conventional lenders but treated as commercial by current building code
- Allow flexibility in standards for moderately priced units

Financing and programming solutions:

- Invest in public sector solutions, such as Low Income Housing Tax Credit (LIHTC) developments, and land donations
- Dis-incentivize acquisition of units for short-term rental use (< 30 day rentals) by taxing those units as if they are hotels and using funds for affordable housing

**Areas of agreement.** The following themes emerged and gained consensus in conversations with the Planning Collaborative and the Developers' Forum.

**Additional housing supply and density are necessary to achieve housing affordability.** All agree that providing opportunities to construct higher density residential development in areas where infrastructure and amenities can support density will increase the supply of housing and encourage affordability.

- Developers see the solution in increasing housing supply without imposing affordability requirements—and maintain that supply alone could address much of the County's housing shortages.
- Planning Collaborative members are skeptical that increasing supply without imposing affordability requirements will produce workforce housing. The difference between returns on market rate and moderately-priced housing is simply too large.

**There is a lack of understanding about the development process.** Development decisions should be more heavily weighted toward staff who have expertise in this complex area. There is a need for increased clarity and collaboration in determining the role of staff, City Council, County Commissioners, and members of the public in the development process. Developers would benefit from transparent requirements with specific expectations.

**Infrastructure—particularly water and sewer—present major challenges for growth and development.** Capacity limitations inhibit development of the housing supply needed to address needs. The County and municipalities must commit to an immediate, concerted, and collaborative approach to solve infrastructure limitations.

**Short term rentals (STR) should benefit the local community.** While there is not consensus on how to achieve a local community

benefit from STRs, all parties agree that the STR market has an adverse impact on housing affordability for residents.

**Community buy-in is a challenge.** Community involvement in planning and land use decisions is valuable—but it should not countermand adopted plans. Once plans are adopted, conforming development should be allowed to proceed without community negotiation.

## Zoning and Land Use SCAN

As part of the development of recommendations, the consultant team scanned zoning and land use codes in Chaffee County, as well as Salida and Buena Vista, and prepared the following observations.

- Height restrictions throughout the county—maximum heights of 35’—prohibit mid- to high-density multifamily development which is needed for moderately-priced or income-restricted affordable housing.
- Minimum lot widths and lot sizes limit the types and density of residential development. These minimums favor single family residential development over mixed housing types
- Middle density housing types and multifamily housing developments are not permitted by right in any zoning district in some codes. These more affordable housing types are subject to higher tiers of development review and, in some cases, several public hearings.
- Limited impact and major impact development review processes strongly discourage increased residential densities and create barriers to lower cost housing development. Salida and Chaffee County both require a major impact review for multifamily development—in Salida, this is required for developments with 20 or more units. This level of review is more extensive than what is seen in some urban environments.

### CONSULTANT Recommendations

After considering all viewpoints from those engaged in the Planning Collaborative and Developers’ Forum discussions, we recommend the following to activate land use solutions to the County’s housing

challenges. These recommendations are primarily oriented to the County yet many also apply to cities and towns:

### Improve municipal and county coordination

- 1.1 Set a goal for the proportion of workforce units countywide and within each municipality and build this goal into the code audit to ensure removal of barriers to production. Ideally, this goal is based on a current assessment of housing needs. Allow municipalities the flexibility to tailor codes and development to meet that goal (e.g., cooperative housing communities, income-restricted housing, attached homes) yet uniformly apply best practices where possible.
- 1.2 Expand elected and appointed officials’ knowledge about adopted planning documents and how plans relate to land use decisions. Provide a visual representation of the process they can reference in decision making. Clarify the respective roles and responsibilities of municipal and county planning commissions, city/county councils, and staff in the development review and approval process.
- 1.3 Conduct a complete audit of municipal and county codes for inconsistencies and conflicts in facilitating moderately priced housing (building upon the scan in this report), and address those conflicts through the County Land Use Code update.
- 1.4 Evaluate the adopted International Building Code for consistency across municipalities and suitability for the range of development contexts and types, including pre-fabricated housing.
- 1.5 With the Chaffee County Authority and Economic Development Council as leads, regularly convene county and town administrators, the Planning Collaborative, area businesses, and developers to monitor progress and update these recommendations and resulting action items—to ensure this plan is a “living document.”

### **Streamline creation of needed housing types**

- 2.1 Allow developments by-right and with administrative approval in all but very low density residential districts when including moderately priced housing and income-restricted housing.
- 2.2 Provide a clear framework for development review, developer expectations, and decision maker expectations, and, as staffing allows, work toward a reduction in review meetings for consistent developer compliance.
- 2.3 Refine subdivision requirements for development in the County to maximize density and encourage affordability near and within municipal growth boundaries. For example,
  - 2.3.1 In areas where density is encouraged, permit residential development based on the scale of the built structure rather than the number of units—e.g., four 1,000 square foot units or one 4,000 square foot single family home.
  - 2.3.2 Prohibit covenants that have a minimum square footage for units.

### **Provide resources**

- 3.1 Set aside public land for development of affordable and moderately-priced housing through private/public partnerships.
- 3.2 Establish a housing trust fund and fund through an excise tax on luxury development, a STR “hotel” tax on out-of-town owners, and/or other mechanisms.

### **Facilitate smart growth**

- 4.1 Commit to the Comprehensive Plan as a guiding document for determining the County’s development and growth vision.

- 4.2 Solidify municipal growth boundaries and commit to upholding intergovernmental agreements to support denser development within the growth boundaries.

#### 4.3 Clarify and make better use of annexations:

- 4.3.1 Implement a review of the annexation process to identify understanding by staff, planning commissioners, and policymakers of their roles in annexation.
- 4.3.2 Identify parcels to annex and provide a clear process during predevelopment.
- 4.3.3 Require a commitment to the County’s affordable housing goals from developers (from action item 1.1) as part of the annexation and/or subdivision process.

- 4.4 Re-examine required open space dedications to achieve denser housing within planned growth areas and minimize in-commuting, thereby mitigating sprawl and allowing for the preservation of natural environments.

- 4.5 County take the lead on facilitating options and seeking funding for municipal water acquisition; require city infrastructure installed in the joint planning area.

- 4.5.1 Require infrastructure installed within municipal growth boundaries to meet respective municipal standards.