

# Strategic Plan 2020

San Juan Water Conservancy District

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### Strategic Plan 2020



#### I. Introductory Statement

The purpose of this Strategic Plan (the Plan) is to identify water resource issues in the Upper San Juan River Basin within the San Juan Water Conservancy District (SJWCD) geographical scope, evaluate the District's options for addressing those issues, and outline the options selected for action. All agricultural, municipal, domestic, commercial, recreational, and environmental water needs are considered. Other objectives in undertaking this planning process are to assist the Board of Directors in developing long-term direction for the District, relay that direction to the community, and identify measures the Board can implement in the future to further that direction.

The Plan is intended to be a dynamic document the Board reviews annually and updates as necessary to reflect changing conditions in the District and its water environment. In addition to providing guidance for the District in executing Board policies, the Plan is intended to serve as an accessible informational tool for interested parties regarding the activities of the District's Board and staff. Public comments on the Plan are encouraged, particularly during the budget process conducted by the Board in September, October, and November of each year.

Goals have been developed by the Board based on the District's statutory authority, Mission Statement, and Values Statements. They are intended to define the District's course of action in meeting the identified water issues. This edition of the plan has been organized to reflect the correlation of the District's activities with those specific goals. The Plan, including the Goals & Objectives, will be reviewed for possible revision annually by the Board as part of its budget process and serves as the basis for the Board's expenditure of District revenues.

#### II. Mission Statement

#### To be an active leader in all issues affecting the water resources of the Upper San Juan River Basin

#### III. Value Statements

The following Values Statements are listed in a collective fashion such that the order of the statements does not indicate a priority or relative value to any of the statements. The Board considers these statements as our principal guiding values that will enable us to accomplish our mission.

- The Board is committed to ensuring the current and future agricultural, municipal, industrial, environmental and recreational water supply needs are met through the various conservation and water management strategies and methodologies available. The Board strongly supports the domestic, agricultural, municipal, environmental, and recreation values derived from our water resources because of their importance to the economic, cultural and social aspects of the community.
- The Board opposes any new transfers of water from the Upper San Juan River and its tributaries upstream of Navajo Reservoir to basins outside of the Upper San Juan River Basin. We believe such transfers would interfere with existing beneficial uses of water, damage economic stability, and reduce environmental quality within the District and as such form the basis for our opposition.
- The Board is committed to effectively managing the water rights it holds on the San Juan River and other streams and the property it jointly owns with the Pagosa Area Water and Sanitation District as valuable assets of the District's constituents.

- The Board supports implementation of wise land use policies and planning processes by local, County, State and Federal governments to conserve and protect the water resources of the San Juan River Basin.
- The Board regards irrigation, flood control, municipal and industrial uses, ecological needs, recreational opportunities, and aesthetic values to be important matters for the District and the public it serves and advocates achieving a balance among competing uses of water within the District to minimize conflict among them, in accordance with Colorado water law.
- The Board is committed to managing and funding, within approved budgets, effective monitoring, protection and restoration programs in order to maintain high water quality standards as a necessary part of a healthy economy and environment in the District.
- The Board acknowledges scientific evidence of moderate and severe drought cycles in the American Southwest indicating a trend towards a general warming and possibly more arid condition in the foreseeable future. This warming trend has negatively impacted precipitation, evaporative water losses, natural stream flows, ground moisture content, and associated ecosystems. We believe the Board must be proactive in its planning to ensure current and future available water resources in light of these changing conditions.
- The Board believes that the District must participate in statewide planning processes, such as the Colorado Water Plan, to address challenges like climate change, drought, population pressure, water shortages, and projects and programs to address those challenges. In those statewide processes, the District must be a strong and consistent voice guarding against inequitable and unmitigated damage to Western Slope interests.
- The Board is aware of the close relationship between the many water issues, including but not limited to environmental, recreational, municipal and agricultural matters. Through this awareness the Board acknowledges a responsibility to treat them in policy-making decisions and action steps as interrelated, but also in accordance with Colorado water law. The Board recognizes the need for collaborative efforts with partners to develop positions

regarding legislation that has a nexus with water.

- The Board recognizes that effective water management requires attention to the health and viability of the entire watershed and the groundwater moving through the land and interacting with the surface waters. As such, collaborative efforts with local and governmental entities, and non-profits should be maintained and continued, based on District priorities.
- The Board recognizes the need to inform and educate the public about water matters.
- IV. Executive Summary

(To be completed following public comment period.)

V. Description and Accomplishments of the District

#### ORGANIZATION

SJWCD was formed on October 22, 1987 by decree entered in Case No. 1987CV100 by the District Court of Archuleta County following a majority vote of approval by its electors. It is a political subdivision of the State of Colorado and a duly organized water conservancy district pursuant to the Water Conservancy Act, §37-45-101 *et seq.*, C.R.S. The charge of the District is to provide water conservation, water resources planning, stream improvement, water rights protection, and development services within its service area. SJWCD is also charged with ensuring the property and residents within the District, the water resources of the San Juan River, and its tributaries will be benefited by these activities.

The District is funded through a mill levy of 0.316 on all property within the District boundaries. When SJWCD was first formed the mill levy was approved at 1.0 mill; however, the implications of TABOR over the intervening years have reduced the levy to what it is today. Attempts to increase the mill levy have been made over the years, but have not been successful. See Region 9 Economic Development District of SW Colorado below and the District's boundaries map courtesy of Archuleta County attached as Appendix A.



District Boundaries – Denoted in Purple<sup>1</sup>

#### COMPOSITION OF THE BOARD OF DIRECTORS

SJWCD is governed by a Board of three to nine Directors who are appointed by the District Court Judge. A Director must reside and own real property within the District. All powers, privileges, and duties vested in, or imposed upon, the District by law shall be exercised and performed by and through the Board, whether set forth specifically or impliedly in the District Bylaws. The District's current Bylaws are attached hereto as Appendix B. The term of each Director shall be four years, or less if appointed to fulfill an unexpired term, and each Director shall sign an Oath of Office.

<sup>&</sup>lt;sup>1</sup> Region 9 Economic Development District of SW Colorado Map with District boundaries denoted in purple.

<sup>&</sup>lt;sup>2</sup> See Harris Engineering, Inc., Appraisal Report to Evaluate Future Raw Water Demands and

The Board of Directors elects from its membership a Chair and President, Vice-President, Secretary, and Treasurer and may also elect Assistant Secretaries and/or Assistant Treasurers who shall be the officers of the Board of Directors and of the District. The Vice-President has all powers of the offices of President and Chair in the absence of the President. The officers shall be elected by a majority of the Directors voting at the election. The Board may appoint an acting officer in the absence of any individual officer. The election of the officers shall be conducted biennially at the first regular meeting of the Board held in even numbered years. Each officer so elected shall serve for a term of two years, or as otherwise directed by the Board.

The Board meets on the third Monday of even numbered months. Specific times may vary. Special meetings and work sessions may be scheduled at any time. All meetings are held at the District's office – 46 Eaton Drive, Suite #5, Pagosa Springs, Colorado, unless otherwise notified. Board meeting notices are posted on the District's website <u>www.sjwcd.org</u> no less than 24 hours prior to the meeting.

#### THE BUDGET PROCESS

The fiscal year of the District shall commence on January 1st of each year and end on December 31st. Based upon the requirements of the Local Government Budget Law and procedures recommended by the Colorado Department of Local Affairs, the Board has adopted the following budget schedule and procedure:

#### August board meeting:

- Board appoints a budget officer and reviews current year's goals and activities; preliminary discussion of next year's goals and activities.
- County Assessor to certify to all taxing entities and the Division of Local Government the total assessed valuation and real property values of all taxable property by August 25<sup>th</sup>.

#### September board meeting:

- Budget officer presents initial draft budget, including goals and activities for the next year, to the Board for discussion, prioritizing, and preliminary approval. The statutory deadline is October 15.
- Budget officer advises Board of Assessors' estimates of assessed and actual values.

#### Special October board meeting (optional):

• Revised draft budget presented to the board by budget officer, based on

September discussion. Board discusses revised budget and directs budget officer to make any agreed-upon changes.

#### **October board meeting:**

- Review of revised budget, including September/October changes, and draft budget message (optional). Proposed revisions must be based upon the budget officer's draft, as reviewed at the September/October meeting.
- From this revised budget, the Notice of Budget is prepared and published and public hearing on the budget noticed for the November Board meeting.

#### November board meeting:

• Board conducts public hearing on the proposed budget approved at the October board meeting. Following the public hearing, the Board may revise the proposed budget. Board directs budget officer to prepare final budget and budget message (optional), subject to final assessed valuations.

#### **December board meeting:**

- Board adopts the budget and sets the mill levy for the next year based upon receipt of final assessed valuations from the County Assessor, received by the statutory deadline of December 10<sup>th</sup>.
- Certification of mill levies to the Board of County Commissioners is due by December 15<sup>th</sup>.

#### MAJOR PROJECTS AND ACCOMPLISHMENTS OF THE DISTRICT

#### San Juan River Headwaters Project

The District's primary focus since its inception in 1987 has been water storage. To this end, the main project has been what was formerly referred to as the Dry Gulch Project and is now called the San Juan River Headwaters Project. This effort followed the historic drought years of 2001 and 2002 coupled with relatively rapid growth in Archuleta County from 1990 to 2010.

The proposed project site was selected based on studies completed in 1989 and 2003 of potential reservoir sites in Archuleta County, of which, the 2003 study concluded

the Dry Gulch site was the most favorable.<sup>2</sup> The project site is located approximately three miles northeast of downtown Pagosa Springs just east of U.S. Highway 160. It includes approximately 660 acres of ranch property, but additional land would be needed to complete the project. As planned to date, the project includes an 11,000 acre feet storage facility that would be filled and refilled by siphon. This method reduces the construction and operational costs of the project. The proposed reservoir site is an "off channel" site in that it does not require the source water, the San Juan River, to be dammed. For reference to size, 11,000 acre feet is approximately 10% of the capacity of Vallecito Lake and 1% of the capacity of Navajo Lake.

The conditional water rights for Dry Gulch Reservoir were originally decreed in 1968 for 6,300 acre feet of storage. In 2004, the District and Pagosa Area Water and Sanitation District (PAWSD) applied for a junior water right for a larger reservoir in Dry Gulch, a refill right, and specific filling sources and rates for it. Trout Unlimited opposed those claims, leading to protracted litigation and new standards from the Colorado Supreme Court for evaluating conditional water rights owned by municipal providers. SJWCD, PAWSD, and Trout Unlimited eventually stipulated to a decree providing for a maximum storage capacity of 11,000 acre feet for Dry Gulch Reservoir and other limitations on its use.

The District proposed a ballot issue in 2004 to increase the mill levy to fund the project, but the voters rejected the proposed increase. SJWCD formally partnered with PAWSD on the project in 2006 through a Memorandum of Understanding (MOU). The MOU addressed the acquisition, permitting, design, and construction. Funding for the project was initially provided through tax revenues collected by the District and Capital Investment Fees collected by PAWSD.

In 2007, SJWCD received a \$1 million grant from the Colorado Water Conservation Board (CWCB) to use towards the purchase of the property for the project, the Running Iron Ranch. PAWSD received a loan of approximately \$11 million from CWCB to provide the remaining funds necessary for the purchase of the property. PAWSD ultimately borrowed \$9,219,363 as no other property purchases were made and secured the loan with its revenues.

In addition to the Running Iron Ranch property, the proposed 11,000 acre feet reservoir would require a small amount of additional land currently owned by the U.S. Forest Service (USFS) and the Laverty Family. The District contracted with

<sup>&</sup>lt;sup>2</sup> See Harris Engineering, Inc., Appraisal Report to Evaluate Future Raw Water Demands and Water Supply Alternative Plans as of March 2003 (2003).

the Western Land Group to identify potential properties that might be acceptable to the USFS for a land exchange. A proposal for a land exchange was submitted to the USFS in August 2013. In addition, negotiations with the Laverty Family were initiated. SJWCD also contracted in 2017 with Rhea Environmental Consulting for an environmental baseline study and with La Plata Archeological Consultants for a cultural resources survey of the 11,000 acre feet reservoir pool basin.

Following the purchase of the property, the PAWSD Board decided to suspend the project due to community concerns regarding need and cost. Through a restructuring effort in 2016 titled Agreement to Restructure Colorado Water Conservation Board Dry Gulch Reservoir Loan Contract Number C150261, the recognized lead entity for the Project changed from PAWSD to SJWCD. PAWSD restructured its loan into two parts – Loan A and Loan B. Loan A is for \$4,290,930.32 at 1.75% for 20 years. Loan B is for \$4,565,000 at 3.5% and is deferred for 20 years. This restructuring allowed for a 20-year planning period with an option for an additional 20 years, which provides the entities with greater opportunity for additional partners to join the project. There are several options for PAWSD and SJWCD regarding how to utilize the property during the planning period, but at this time PAWSD is making the annual payments on Loan A, both entities are financially supporting the water rights associated with the project, and SJWCD is actively seeking additional partners.

In March 2017, the District submitted a loan application to the CWCB for an additional \$2,000,000 loan. This funding would allow for acquisition of the additional property necessary for the 11,000 acre feet reservoir, as well as a road easement, fencing, additional environmental studies, and preliminary engineering. Included in the application was a detailed narrative description and cost estimate for the project, including the dam, river diversion, Park Ditch Inflow Siphon, and a pipeline drain back to the river. The estimated construction cost was \$60,600,000, including contingencies. These construction cost estimations were based on the cost of the Long Hollow Dam, which was substantially completed in La Plata County, Colorado in 2014. Although Long Hollow is smaller, the dam and embankment are similar to those required to construct the project. The CWCB loan was approved in May 2017.

Amortization of the CWCB loan would require an increase in the mill levy of the District. Therefore, another ballot initiative was attempted in 2017 to raise the mill levy to 1.0 mills as was originally approved by the voters when the District was formed. However, this ballot initiative was also not successful as the voters again rejected the proposed increase by a 3-to-1 margin. Therefore, execution of the

CWCB loan is on hold while the District continues to pursue various partners for the project.

#### Upper San Juan Watershed Enhancement Partnership

SJWCD has provided financial support to the Upper San Juan Watershed Enhancement Partnership (WEP). WEP is an effort within Archuleta County to implement one aspect of the Colorado State Water Plan (CSWP) – development of a Stream Management Plan (SMP). SMPs are intended to identify, through a community driven process, the issues and needs present in a given watershed. Upon identification of the issues and needs, a scientifically based SMP will be developed and possibly implemented.

Envisioned as a three-phase process, the ultimate purpose of the WEP is to initiate, organize, and implement the Integrated Watershed Management Plan (IWMP) to seek opportunities to conserve the Upper San Juan Basin streams and their uses with wide-ranging community support and decisions based on current, relevant science and assessments. To this end, WEP is being led by a steering committee that is comprised of local agricultural, municipal, domestic, environmental, and recreational water users. The steering committee is working within the community using the IWMP process to identify representative stakeholders that will assist in implementation of the projects described in the SMP to address the identified needs and issues. Phase I of the WEP IWMP was finalized in April 2020.

Funding for Phase II of the WEP IWMP was approved by the CWCB in May of 2020. Phase II will directly address the identified information gap for water needs identified in the SW Basin Implementation Plan by tackling the next critical step in the process: identification of opportunities for multiple-use water projects from a combination of stakeholder input as well as technical expertise, analysis, and modeling.<sup>3</sup> Phase II is anticipated to last 12 months.

Development and implementation of the WEP IWMP and ultimately the SMP are supported by the CWCB. SJWCD is participating as a stakeholder and financial contributor to the WEP IWMP process and SMP development. Continued participation in the development and implementation of such efforts on common water resource issues will be mutually beneficial as it allows the District to continue to represent its constituents while efficiently utilizing resources.

<sup>&</sup>lt;sup>3</sup> See Ann Oliver and Carrie Lile, Harris Engineering Inc., *Basin Implementation Plan:* Southwest Basin Roundtable (2015).

#### Colorado Water Plan

The District was pleased to participate in the development of the Colorado Water Plan, which was completed in 2015.<sup>4</sup> This was the culmination of strategy crafted over a decade that allowed for more grassroots participation in water development and conservation. Efforts preceding the Colorado Water Plan established regional basin roundtables and expanded financial opportunities to fund water infrastructure and policy planning across the state. SJWCD has participated actively in the Southwest Basin Roundtable and continues to be represented. The San Juan River Headwaters Project is included in the Identified Important Projects and Process list developed by the Southwest Basin Roundtable. The SW Basin Implementation Plan portion of the larger Colorado Water Plan is currently in the process of being reviewed and revised.

#### Lower Blanco River Restoration

Since 1971, the U.S Bureau of Reclamation's San Juan/Chama Project has annually diverted over 80,000 acre feet of water from the Rio Blanco, 70% of the historical flows of the river, into the Rio Grande River basin via a transmountain diversion. The diversion point is about six miles upstream from the U.S. 84 bridge. This diversion caused poor water quality conditions and reduced fish habitat in the Rio Blanco below the diversion. Essentially, the river had too large a channel for too little flow after the diversion. Beginning in 1996, the District led a multi-agency public/private effort to improve and restore the streambed habitat in the lower Blanco. SJWCD was gratified to obtain the services of Dave Rosgen, an internationally known river restoration expert, in the design of the project. The first phase of the project was completed in 1999, extending from near the U.S. 84 bridge downstream about one mile. Based on the success of the first phase, a second phase was initiated in 2003, extending the project another 2.4 miles downstream. The second phase was completed in 2004.

The project had a number of objectives:

- Improve the natural stability of the lower Blanco River.
- Improve fish habitat to utilize the regulated low flow from the upstream diversion.
- Improve the visual values of the river.

<sup>&</sup>lt;sup>4</sup> State of Colorado, *Colorado Water Plan* (2015), https://www.colorado.gov/cowaterplan.

- Maintain channel capacity during flood events.
- Improve the sediment transport capacity of the river channel.
- Raise the local base flow stage to help subsurface water elevation hydraulically connected to surface water levels.

After 15 years, the restoration features remain in place and have withstood several major floods. The project is just one example of the District's pro-active role in managing water resources for the benefit of its constituents.

#### Snowpack Enhancement

The District has financially participated for a number of years in cloud seeding activities managed by the Southwestern Water Conservation District, and now by the Dolores Water Conservancy District. Cloud seeding is generally thought to enhance the amount of snowfall in the area being seeded by 5 percent with results ranging from 3 - 15 percent in areas where estimates were measured and documented. A report was recently prepared by the Desert Research Institute for the Southwest Basin Roundtable that describes the effectiveness of such efforts in southwest Colorado.<sup>5</sup>

#### Water Education

The District has been an active participant in and financial contributor of the Water Information Program (WIP) that is managed by the Southwestern Water Conservation District. WIP provides and/or contributes to a wide variety of educational programs in southwest Colorado. These include, the annual Children's Water Festival, the Forests to Faucets program for teachers, and the annual Water 101-201 – Water Education Seminars, which focus on water law.<sup>6</sup>

#### Coordination with other Organizations

SJWCD is an active participant in several organizations with an interest in water in the Pagosa Springs area. One of the most active groups in this area is the San Juan River Headwaters Forest Health Partnership (Partnership), a public/private body concerned with the health of our forests and fire prevention. Forest health has a direct bearing on water quality and quantity. The Partnership is currently

 <sup>&</sup>lt;sup>5</sup> McDonough, F. and J.F. Mejia, Department of Atmospheric Sciences Desert Research Institute Division of Atmospheric Sciences, High-resolution WRF Simulations for Six Storms that Produced Seedable Clouds and Precipitation Over the Western San Juan Mountains – Project Report (2018).
<sup>6</sup> See Water Information Program website: https://waterinfo.org/about-wip/overview/.

managed by the Mountain Studies Institute.<sup>7</sup> The District also recently joined with the Town of Pagosa Springs, Archuleta County, the Pagosa Lakes Property Owners Association, the Pagosa Fire Protection District, and several private entities to support the Growing Water Smart Working Group. The intent of the working group was to develop a community consensus on population projections for future growth of our county.<sup>8</sup>

#### VI. Geography, Population, and Economy

#### GEOGRAPHY

SJWCD is located wholly within Archuleta County, Colorado along the headwaters of the Upper San Juan River, near the southwestern corner of Colorado. To the north and east, the county includes portions of the San Juan Range of the Rocky Mountains, descending into rolling hills and meadows in the central portion of the county, and high desert terrain along the southern areas.

The San Juan River — running roughly north to south though the center of the county — is largely fed through the winter snowpack of the San Juan Mountains. The San Juan River is a tributary of the Colorado River that eventually flows 383 miles to Lake Powell in Utah. Tributaries that feed into the main stem of the San Juan originate in both Mineral and Archuleta Counties. Another significant river — the Piedra — courses through the western part of the county. The San Juan, Piedra, Rio Blanco, and Navajo Rivers feed into Navajo Reservoir in the southwest corner of the county.

Archuleta County is comprised of 867,263 acres (1,355 sq. miles). Most of the northern and eastern portions of the county (49%) are within the San Juan National Forest and are under the management of the U.S. Forest Service. Another 14% of the land within Archuleta County is comprised of Tribal lands administered by the

<sup>&</sup>lt;sup>7</sup> See Mountain Studies Institute website: http://www.mountainstudies.org/forest-health.

<sup>&</sup>lt;sup>8</sup> See RPI Consulting, LLC, Growth Trends and Projections: Archuleta County Growing Water Smart (2019).

Southern Ute Indian Tribe. See Region 9 Economic Development District of SW Colorado Map below. $^9$ 



About 31% of lands in Archuleta County are in private ownership, but only a small portion of the private lands have been developed in urban or suburban residential patterns. The remaining private lands consist mainly of rural cattle ranches.

<sup>&</sup>lt;sup>9</sup> Region 9 Economic Development District of SW Colorado, *Southwest Colorado's Comprehensive Economic Development Strategy, Fourth Edition 2011 – 2012*, (2011), https://www.scan.org/uploads/2011\_CEDS\_archuleta.pdf. <sup>10</sup> id.

Approximately 10% of Archuleta County's land area is included in the San Juan Water Conservancy District. The District includes nearly all of the developed residential and commercial areas in the county, but almost none of the ranches, National Forest, or Southern Ute Indian Tribe land. See District boundaries map courtesy of Region 9 Economic Development District of SW Colorado in section V. Description and Accomplishments of the District.

#### POPULATION

The population of Archuleta County over the first century of its existence remained at approximately 3,000 residents, but around the time voters created the District in 1987 the county's population was experiencing a dramatic increase. The population in 1970 was around 2,700; by 1990, the population had doubled to approximately 5,300; and, by 2010, the population had again doubled to around 12,000. Following the Great Recession of 2008 - 2009, however, the county's population has remained fairly static. It was estimated at about 14,029 in 2019. Of those approximately 14,000 or so residents, it is estimated 90% lived within the SJWCD boundaries.<sup>11</sup>

The residential and commercial areas served by the District include the Town of Pagosa Springs, the various Pagosa Lakes subdivisions, the Alpha subdivision, the Aspen Springs subdivisions, the Lower Blanco subdivision, residential properties along Trujillo Road, and numerous other small subdivisions located within 10-15 miles from the central core of town. See District boundaries map courtesy of Region 9 Economic Development District of SW Colorado in section V. Description and Accomplishments of the District.

Archuleta County has attracted a large population of retirees and second-home owners. While the average age in Colorado in 2017 was 37, the average age in Archuleta County for the same year was around 50 years old.<sup>12</sup> About 27 percent of

<sup>&</sup>lt;sup>11</sup> See U.S. Census Bureau, Quick Facts – Archuleta County, CO, (2019),

https://www.census.gov/quickfacts/fact/table/archuletacountycolorado/PST045219.

<sup>&</sup>lt;sup>12</sup> See Colorado Department of Local Affairs – State Demography Office, Age and Gender Population Data (2020), https://demography.dola.colorado.gov/population/age-gender-population-data/.

the county population is age 65 or older and about 11 percent of the residents live below the federal poverty line.<sup>13</sup>

The Growing Water Smart Work Group, a collaboration of several Archuleta County agencies, published a population study in 2019 suggesting that Archuleta County might grow at an annual rate of between 1 and 2 percent over the next 30 years. Such a growth rate would suggest a population, in 2050, of between 18,000 and 24,000 residents.<sup>14</sup> Based on the current population growth patterns, it can be reasonably assumed the majority of this increase will be within the District's current boundaries.

#### **ECONOMY**

Since the decline of the timber and other extraction industries in the late 1970s, the economy of Archuleta County has relied more heavily on tourism and recreation largely due to the area's natural resources and outdoor recreation opportunities. The Pagosa Springs Area Tourism Board noted in materials presented to the Town Council in March 2020 that tax revenues from municipal and county Lodgers Taxes have increased from about \$477,000 in 2010 to a projected \$890,000 for 2019.

The growth of the tourism sector has encouraged a similar growth in vacation rentals, which are mostly private homes converted to short-term rentals. Some estimates put the number of vacation rentals at around 600, which is approximately equivalent to the number of motel rooms in the county.<sup>15</sup> The retirement and second home industry is also experiencing growth as a result of increasing tourism. A report published in 2016 estimated that in 2006 approximately 38 percent of the homes in the county were second homes. The same report estimates the percentage of second homes in 2015 was about 41 percent, which shows the persistence of the second home market in the area.<sup>16</sup>

<sup>&</sup>lt;sup>13</sup> See U.S. Census Bureau, Quick Facts – Archuleta County, CO, (2019),

https://www.census.gov/quickfacts/fact/table/archuletacountycolorado/PST045219.

<sup>&</sup>lt;sup>14</sup> RPI Consulting, LLC, *Growth Trends and Projections: Archuleta County Growing Water Smart* (2019).

<sup>&</sup>lt;sup>15</sup> id.

<sup>&</sup>lt;sup>16</sup> Donna K. Graves, Information Services, Archuleta County Housing Report 2016 (2016).

Employment in the tourism industry also corresponds with the growth and now accounts for approximately 32 percent of the jobs in Archuleta County.<sup>17</sup> While the average annual wage in the county is \$34,990, this is only about 60 percent of the average annual wage for the state at \$58,942, and housing costs are second only to Durango in southwest Colorado as the most expensive. Recognizing the need for a skilled and reliable work force, the Town of Pagosa Springs, Archuleta County Housing Authority, and the non-profit Pagosa Housing Partners have been spearheading efforts to address affordable housing issues as the lack of work force housing can stymie economic growth and diversity.

Diversification of the economic base has been a much-discussed goal in Archuleta County since the decline of the extraction industries. While much of the current diversification is focused on tourism, the retirement and second home community, and the corresponding service industries, efforts have also included attracting other professional services such as medical. The largest increase in jobs since 2007 has been in the health services and governmental sectors.<sup>18</sup>

In January 2008, Pagosa Springs Medical Center (PSMC) opened to offer comprehensive hospital services, EMS, diagnostic testing, and wellness programs. The hospital's federal designation as a Critical Access Hospital allows for higher reimbursements for Medicare and access to grants only available to communities with this designation. PSMC also operates a family practice clinic.<sup>19</sup> The new facility has been a significant factor in attracting medical professionals to the area and currently employs a staff of approximately 280.<sup>20</sup>

<sup>&</sup>lt;sup>17</sup> id.

<sup>&</sup>lt;sup>18</sup> RPI Consulting, LLC, *Growth Trends and Projections: Archuleta County Growing Water Smart* (2019).

<sup>&</sup>lt;sup>19</sup> See Region 9 Economic Development District of SW Colorado, Southwest Colorado's Comprehensive Economic Development Strategy, Fourth Edition 2011 – 2012, (2011),

https://www.scan.org/uploads/2011\_CEDS\_archuleta.pdf.

<sup>&</sup>lt;sup>20</sup> See Region 9 Economic Development District of SW Colorado, Region 9 Economic Snapshot 2020, (2020),

https://www.scan.org/uploads/Final\_Report\_Economic\_Snapshot\_2020.pdf.

#### VII. Colorado Water Law, Colorado River Compact, and Water Resources

#### Colorado Water Law

In Colorado, water is a public resource. As such, water law in Colorado is the evolution of over 150 years of customs and values of the people to promote orderly development and use of their water resources. As the population has grown and evolved, some water rights that historically provided irrigation for agriculture have been changed to providing municipal water supplies and water for recreation and piscatorial protection.

Despite evolution with population growth, water remains a scarcity in Colorado. Some areas of the state receive less than 12 inches of precipitation per year, while the more mountainous areas can see over 40 inches. In light of water's scarcity and value in this arid region, Colorado water law must guarantee security, assure reliability, and create flexibility in the development and protection of water resources.

• Security resides in the law's ability to identify and protect water rights;

• **Reliability** is assured by the system's capacity to administer and enforce water rights over time; and

• **Flexibility** allows water rights to be leased, changed, transferred, sold or exchanged as the economy or values evolved.

The Colorado Constitution defines the water doctrine known as "prior appropriation"— first in use, first in right — which has stood the test of time as Colorado developed from a frontier western state and into the late 20th century. "Prior appropriation" confers priority to use water from natural streams based upon when water rights were acquired and appropriated. Holders of senior rights have the first claim to withdraw water over holders who have filed later claims and own what are called "junior water rights." In times of shortage, water is provided in full to the most senior rights, with junior rights being cut off.

Water rights are awarded for bona fide "beneficial uses" such as irrigation, livestock uses, drinking water and general municipal uses, industrial uses, and habitat

preservation. In issuing rights, users may only appropriate the amount of water that can be beneficially used. Any water diverted, but not beneficially used must be returned to the stream to be available for use by others. Rights generally allow for a diversion of a certain quantity of water, or for the storage of a certain quantity of water. The rights require the water to be used for a specific purpose (i.e., beneficial use), as defined by the court decree.

#### Colorado River Compact of 1922

The Colorado River Compact of 1922 is a governing agreement established after long negotiations between the seven states along the Colorado River to apportion water in the river among them. C.R.S. § 37-61-101 (Colorado statute enacting the Compact). Although the Colorado Compact formed the basis for the "Law of the River," much debate and deliberation followed the historic 1922 treaty. The State of Wyoming consistently challenged Colorado's right to divert headwaters flows from the west to east slope of Colorado. After the U.S. Supreme Court ruled the waters of the Colorado River would be governed according to the Doctrine of Prior Appropriation, the Upper Basin States (Utah, New Mexico, Wyoming, and Colorado) became concerned the Lower Basin States (Arizona, Nevada, and California) would be at an unfair advantage due to their more rapid development of water resources. As a result of complex negotiations between the states in a forum called the Colorado River Commission, the elements of the Colorado River Compact were forged between the seven states that utilize Colorado River water. The various compacts and projections of river flows resulted in approximately 3 million acre feet of depletions being available to the people of Colorado annually under the "Law of the River."

In 1944, a treaty was signed with Mexico providing our neighbor to the south with 1.5 million acre feet annually from the Colorado River system. In1948, the Upper Basin States agreed to a percentage appropriation of the waters of the Colorado River system. Colorado's share of the 7.5 million acre feet Upper Basin States' allotment was set at about 51%. Subsequent negotiations among the seven Upper and Lower Basin States and court decrees have quantified Colorado's share of the Colorado River system, which is still estimated to be approximately 3.1 million acre feet of water per year.

The Bureau of Reclamation (BOR) was created in 1902 as an agency of the federal government. Over the past 100 or so years, the BOR has been coordinating the planning, construction, and implementation of numerous water diversion and storage projects in the western United States. Many irrigation projects throughout the west are based on contracts between the water users and the BOR.

Recent drought conditions have resulted in a Drought Contingency Plan between the seven Upper and Lower Basin States party to the Colorado River Compact to consider ways to prevent Lake Mead and Lake Powell from dropping below the levels required for hydroelectricity generation and to maintain compliance with the Compact. Each state has come up with its own plan to help mitigate possible shortages.

Several transbasin diversions are present in the Upper San Juan River Basin that have direct and indirect effects on water availability within Archuleta County. For example, the Treasure Pass diversion on Wolf Creek Pass diverts water into the Rio Grande. The San Juan-Chama Project diverts water out of the Navajo River, into the Rio Grande watershed supplying water to Albuquerque, NM. A diversion out of the West Fork of the San Juan River ultimately feeds back into the Piedra River. All this demonstrating the complex "plumbing" system affecting water availability in Archuleta County.

#### Water Resources

SJWCD concerns itself with all water uses that affect District taxpayers, with a focus on the conservation and use of surface waters that flow into the San Juan River. Nearly all surface water in Archuleta County ultimately flows into the San Juan River. Because the vast majority of water users within the District are urban and suburban residential or commercial users, as opposed to agricultural users, we need to assess the domestic water supplies currently available to those users, as well as potential water supplies that might be obtained or developed in the future.

PAWSD reservoir storage fluctuates from year to year depending on annual snowpack. PAWSD has a total of five storage reservoirs, rights to two additional

non-constructed reservoirs, two diversion ponds, three diversions, and three water treatment  ${\rm plants.}^{21}$ 

#### **Diversions**:

Water Rights			
Four Mile	12.8	Cfs	Absolute
Diversion			
San Juan	8.0	Cfs	Absolute
Diversion			
	16.0	Cfs	Conditional
West Fork	5.0	Cfs	Absolute
Diversion			
TOTAL	62.7	Cfs	

The Four Mile Diversion, diverts water into the Dutton Pipeline. The first several hundred yards of the Dutton Pipeline is shared by PAWSD with the Dutton Creek Ranch and Anthony Trujillo/Alice Seavy. Both of these entities have a higher priority than PAWSD and both take a varying percentage of the available diverted flows.

<sup>&</sup>lt;sup>21</sup> Email interview with Justin Ramsey, PAWSD District Manager (October 9, 2019).

#### Storage<sup>22</sup>:

Reservoir Name	Volume (a	cre feet)	
	Spill way	Usable	
Hatcher Lake	1735	880	
Stevens Reservoir	1775	1730	
Lake Pagosa	1276	920	
Village Lake	700	228	
Lake Forest	465	300	
West Fork	14	12	
Diversion Pond			
*Pinon	198	162	
San Juan	24	NA	
Diversion Pond			
**Martinez	760		
**Dry Gulch/San	11,000		
Juan River			
Headwaters			
Project			
TOTAL:		4,070*	

Note: \*PAWSD does not use water from Pinon. The golf course and several condominium villages in the area use the raw water from Pinon for landscape irrigation; thus, Pinon's usable acre feet are not included in the total above.

<sup>22</sup> id.

\*\*Both Martinez and Dry Gulch are not constructed.

PAWSD raw water storage is held between the lakes outlined above and snowpack. During typical spring runoff PAWSD is able to fill the reservoirs from the melting snow. The lakes fill until around June 1<sup>st</sup>. As the snowmelt slows the lake levels will drop as PAWSD treats more water than enters the lake system. The longer the snow pack lasts the longer the lakes will stay full.

Lake Hatcher is primarily fed from the diversion on Four Mile Creek. Although the Four Mile Creek water right is about 13 cfs, it is a junior right and typically out of priority between June and November. Hatcher is the highest lake in the system and there is currently no method to move water from Stevens Reservoir or any other lake into Lake Hatcher.

Stevens Reservoir receives native flow from Dutton Creek and diversion water from the PAWSD Four Mile Diversion. PAWSD has the ability to divert water from the Dutton Pipeline into the Dutton Ditch, which flows into Stevens Reservoir. PAWSD will typically divert water into the Stevens Reservoir after Hatcher is full or nearly full. Water from Stevens can be released into Lake Pagosa through the Linn and Clark Ditch. Water from Lake Pagosa can be released into Village Lake.

Water in Village Lake is used by the golf course, multiple condominium communities, and the Pagosa Lakes Property Owners Association for raw water irrigation. The golf course also pumps raw water from Village Lake into Pinon Lake where it is used by the golf course and multiple condominium communities for irrigation water. Water from Village Lake can also be released into Lake Forest.

Water in Lake Forest can be pumped to the San Juan Water Treatment Plant. If water spills from Lake Forest, it enters Stevens Draw, which is a tributary to Stollsteimer Creek and eventually flows to the Piedra River.

Because precipitation from year to year is uncertain, the ability to store water becomes very important. Even with the storage PAWSD has available, there still exist some limitations in system flexibility that could become very evident in persistent drought years. The District's capacity to educate the community on conservation and efficient water use, especially larger water users, will be vital. Working with PAWSD to improve its system flexibility and dynamics will also allow the community to persevere drought years and potential Colorado Compact issues in the future. Utilizing the District's current assets, especially water rights, in the most efficient and effective manner will also be of the utmost importance.

#### VIII. Goals and Objectives

#### Goal 1: Educating Community on Water Issues

The Board recognizes that education of and input from constituents is an important value of the District, and it is committed to pursuing the following goals in this effort.

#### **Goals for water education:**

- Provide small grants to develop and sustain local water education programs.
- Work with teachers to develop and sustain water education programs.

-Support/provide guides and booklets available from Project WET (Water Education for Teachers).

-Support the Forests to Faucets program.

- Create presentation materials and have these available on the website.
- Host a Chamber of Commerce Business After Hours.
- Participate in a Chamber of Commerce Business Bites that focuses on educational programs.
- Participate in the annual Chamber of Commerce sponsored KWUF radio interview.
- Develop a presentation based on materials provided by the State of Colorado -Analysis & Technical Update to the Colorado Water Plan, Forest to Faucets, Water Education Colorado, and Statewide Water Education Action Plan.
- Review and use, as appropriate, materials provided through the WIP.

#### **Ongoing tasks:**

- Maintain and promote the District's website.
- Update the brochure and maintain distribution tied to the website.
- Submit water related articles to the local media.
- Participate in local Earth Day celebrations and 4<sup>th</sup> of July parade to generate public awareness of the District.

#### Action Items:

- Prioritize educational opportunities.
- Identify any supplemental funding needed for educational opportunities.
- Research potential sources for supplemental funding for education.
- Assign subcommittees to prepare materials for individual educational opportunities and any necessary supplemental funding.
- Work with partner groups such as WIP and Fort Lewis College to accomplish action items and ongoing tasks.

#### Goal 2: Develop Alternatives for Meeting Community Water Needs

The Board recognizes its funding limitations for large water supply projects such as reservoirs without the assistance of other entities; however, SJWCD is dedicated to its mission and the constituents it serves. To this end, the District must also focus on alternative approaches to meeting community water needs utilizing the limited resources available. As the population grows and precipitation is less than is needed to secure reliable water resources for the many uses within the District's boundaries, the following alternatives are meant to assist in meeting this demand.

#### West Fork Reservoir and Canal Water Rights

SJWCD owns conditional water rights for the West Fork Reservoir and West Fork Canal, originally decreed in 1968 for 39,356 acre feet and 70 cfs, respectively. Although at one time this was considered a viable reservoir location, PAWSD and SJWCD ultimately chose Running Iron Ranch as the property for the Dry Gulch Reservoir Project – now referred to as the San Juan River Headwaters Project. For many reasons, this is no longer a viable reservoir location and the viability and the use of the water rights in a different location need to be analyzed.

Due to several stipulations resulting from other water rights cases, the current West Fork Reservoir water right is for 24,000 acre feet and the West Fork Canal water right for 50 cfs. Should SJWCD decide to pursue building a reservoir on the Running Iron Ranch, the West Fork water rights will have to be used or perfected prior to reservoir construction or abandoned. The point of diversion and the storage location must also be changed from the current location,

SJWCD has invested in this asset in legal fees through diligence applications. It will need to be determined by the Board if it is worthwhile to pursue moving the point of diversion and storage site. This will need to be determined prior to the next diligence deadline in June of 2021.

#### **Headwaters Restoration**

Christine Brissette quantified the effect of stream restoration on nested scales of hydraulic exchange and temporal patterns of alluvial aquifer recharge and discharge.<sup>23</sup> They found that in Montana's Ninemile Creek, "for every mile of valley restored, an additional 0.51 cfs (1.01 acre-feet) of groundwater entered the stream each day at baseflow." While those results cannot be assumed everywhere, Brissette's work shows that strategic restoration can have a substantial impact on water storage and downstream water users. Water "stored" in the wetlands/riparian corridors of headwaters can be "released" via natural processes throughout the summer and fall assisting in meeting water supply needs. Working with the San Juan Headwater Forest Health Partnership to promote forest restoration will help in this effort.

<sup>&</sup>lt;sup>23</sup> See Brissette, Christine M., Stream restoration effects on hydraulic exchange, storage and alluvial aquifer discharge, (2017), Graduate Student Theses, Dissertations, & Professional Papers, 10992, https://scholarworks.umt.edu/etd/10992

#### Continued Stakeholder Involvement in Upper San Juan River Watershed Enhancement Partnership (WEP)

Continuing to be involved as a stakeholder in the Upper San Juan River Watershed Enhancement Partnership (WEP) and provide financial support, to the extent applicable and available, will allow the District to combine resources with other groups working on similar water issues. Utilizing the results of Phase II of the WEP in combination with Growing Water Smart population projections will assist the District in achieving a scientifically based future water needs and information gaps assessment.

#### Four Corners Water Center – Fort Lewis College Intern

Working with Four Corners Water Center at Fort Lewis College to again combine resources with other groups working on similar water issues and hiring an intern to assist with outreach and other water management issues outlined in the Strategic Plan will allow the District to continue to represent its constituents while efficiently utilizing its resources.

#### Water Banking

Water banking is the practice of forgoing water deliveries during certain periods and "banking" either the right to use the forgone water in the future, or saving it for someone else to use in exchange for a fee or delivery in kind. Developing and utilizing a water banking program in combination with, or as a part of, all the above to relieve the financial burden associated with meeting the community's future water needs would be a beneficial alternative.

#### **Develop Water Conservation Campaign**

Working with other water managers and users to update the water conservation campaign to support water conservation efforts in the community, including, but not limited to, education materials and small grants. The District's education efforts are described in more detail in Section IX. Goals and Objectives – Goal 1: Educating Community on Water Issues.

#### **Ongoing Tasks:**

- Explore alternative approaches to securing water resources for the various uses within the District's boundaries.
- Continue to cost-effectively manage the current water rights the District owns.

#### Action Items:

- Work with all waters users in the Upper San Juan Watershed, especially some of the larger water users such as ranchers and farmers, to improve their water use practices. This effort could include lobbying and educational efforts to affect statewide water policy.
- Hire a professional consultant/consulting firm to evaluate options for costeffective use of the West Fork Reservoir and West Fork Canal water rights.
- Develop a headwaters restoration program and campaign with other groups with similar interests.
- Contact Four Corners Water Center Fort Lewis College regarding a partnership and potential internship.
- Seek out potential partners for the research and development of a water banking program for the area.
- Engage in and support water policy research, long-range planning, and education.

#### Goal 3: Establish Goals to Best Utilize the Assets of the District

The stated purpose approved during the formation of the District is to conserve, maximize, and utilize the water resources of the San Juan River and its tributaries, and that property within the District will be benefitted by this purpose. The following are goals to be incorporated into the long-range strategic planning process to best utilize the current and future assets of the District in an effort to meet the water needs of the constituents.

#### Current assets of SJWCD

• Financial

SJWCD receives funds through a mill levy approved by the voters. The mill levy as of the 2019 certification is currently at a rate of 0.316 mils. This results in an annual income of \$70,000, on average.

• Current Water Rights Held

The District currently owns water rights within the Upper San Juan River Basin that are tabulated in Appendix C. The majority of these water rights are conditional water rights and are currently contingent upon future water storage development.

• Property owned in association with PAWSD

The District, working in cooperation with PAWSD, initiated the purchase of the Running Iron Ranch property northeast of Pagosa Springs for the purpose of developing a water storage reservoir. The property currently consists of three parcels that straddle U.S. Highway 160, which combined amount to approximately 660 acres. Presently, there are three leases in place: Occupancy, Agricultural, and Sand and Gravel. These leases all expire on January 3, 2023. The options available for the future management of the property, including leases, are currently being discussed with PAWSD. See map of Dry Gulch/San Juan Headwaters Project site courtesy of Archuleta County attached as Appendix D.

• Relationships and Collaboration with Organizations and Stakeholder Groups Sharing Common Water Resource Interests

The District recognizes the importance of establishing and maintaining collaborative relationships with local and regional organizations and stakeholder groups that share mutual water resource interests in the Upper San Juan River Basin. These organizations include, but are not limited to:

-Member of the Southwest Water Conservancy District (SWCD)

-Participating member of the SWCD Water Information Program

-Supporter of the San Juan Watershed Enhancement Program

-Participating member and supporter of the San Juan Headwaters Forest Health Partnership

-Participating member of Southwest Basin Roundtable

-Member of Colorado Water Congress

#### **Ongoing Tasks:**

• Continue to maintain basic operations and protect existing water right investments and contractual obligations within existing budget limitations.

#### Action Items:

• Financial

-Pursue additional funding sources for identified Goals & Objectives to promote the District's mission.

-Continue to foster mutually beneficial partnerships in order to enhance water resource opportunities within the geographical scope.

• Water Rights

-Hire consultants to determine options and feasibility for moving the West Fork Reservoir and West Fork Canal water rights.

-Determine how to cost-effectively manage the West Fork Reservoir and West Fork Canal water rights.

-Determine plan of action depending on the decision above.

• Property

-In coordination with PAWSD, determine the future management, including leases, of the Running Iron Ranch.

• Relationships and Collaboration with Organizations and Stakeholder Groups Sharing Common Water Resource Interests

-Continue to engage with local organizations and stakeholder groups to promote greater awareness of important issues regarding water supply and demand.

-Identify alternative water supply strategies and develop consensus on how best to meet the water needs of our community now and into the future.

-Improve relationships and collaboration with the following:

- Town of Pagosa Springs
- o Archuleta County
- $\circ \quad \text{Chamber of Commerce}$

#### Goal 4: Increase Fundraising Efforts

The District has limited annual revenue of on average \$70,000 provided through a mill levy. In order to implement projects that promote the District's mission, supplemental funding from other sources and/or partners will be needed.

#### The following are potential sources of supplemental funding:

- Southwest Basin Roundtable
- Southwestern Water Conservation District
- Colorado Water Conservation Board

-Water Supply Reserve Fund

• Water Smart – BOR

-Water and Energy Efficiency Grants – https://www.usbr.gov/watersmart/weeg/index.html -Small-Scale Water Efficiency Grants – small scale water efficiency projects funded with these grants include installation of flow measurement devices and automation technology, canal lining or piping to address seepage, municipal meter upgrades, and other projects to conserve water – https://www.usbr.gov/watersmart/weeg/ssweg.html

-Water Marketing Strategy Grants – https://www.usbr.gov/watersmart/weeg/watermarketing.htm

-Cooperative Watershed Management Program – provides funding to watershed groups to encourage diverse stakeholders to form local solutions to address their water management needs. Funding is provided on a competitive basis for:

> Watershed Group Development and Watershed **Restoration Planning**: In 2012, the BOR began providing funding for watershed group development, watershed restoration planning, and watershed management project design (Phase I). A watershed group is a self-sustaining, nonregulatory, consensus-based group that is composed of a diverse array of stakeholders, which may include, but is not limited to, private property owners, non-profit organizations, Federal, State, or local agencies, and Tribes. As part of Phase I activities, applicants may use funding to develop bylaws, a mission statement, complete stakeholder outreach, develop a watershed restoration plan, and watershed management project design. In March 2020, BOR awarded \$2.8 million for 29 watershed group development and watershed restoration projects in 12 states with no non-Federal cost-share required. Approximately \$463,000 was awarded to entities in Colorado.

Implementation of Watershed Management Projects: In 2017, the BOR started providing cost-shared financial assistance to watershed groups to implement watershed management projects (Phase II). These on-the-ground projects, collaboratively developed by members of a watershed group, address critical water supply needs and water quality concerns,

helping water users meet competing demands and avoid conflicts over water. BOR will award up to \$100,000 per project over a two-year period. For Phase II projects, applicants must contribute at least 50% of the total project costs.

- Partner with Natural Resources Conservation Service enhance riparian condition, whether through restoration efforts, enhancement of diversion structures; Environmental Quality Incentives Program; Regional Conservation Partnership Program.
- Establishment of a Water Fund Water Funds provide support for conservation and restoration activities that will protect their water supply, water quality, and recreational opportunities, creating a steady revenue stream for a healthy water future. Water Funds are voluntary and locally-controlled efforts that can be tailored to address the unique needs and priorities of different communities and partners.

For example, the Yampa River Fund (the Fund), which is facilitated by The Nature Conservancy, will invest in conservation and restoration activities that positively impact Yampa River flows. These efforts support natural resource-based livelihoods, including agriculture and recreation, throughout the river basin. The Fund ensures that a healthy, flowing Yampa River remains the thriving center of communities for generations to come.

- Partner with San Juan Forest Health Partnership on projects that enhance the Upper San Juan River watershed (e.g., projects that enhance the water table, riparian condition, and fire mitigation).
- Each year in January, Colorado Water Trust and the Colorado Water Conservation Board launch the annual Request for Water Process. This process offers a streamlined approach to water transactions to benefit the environment on streams throughout the state.

Limited opportunities throughout the year are available to apply for grants from the aforementioned entities. Successful and timely submission of applications will be critical in obtaining supplemental funding. Establishing a supplemental funding subcommittee and calendar of when grant applications are due will facilitate timely grant submission.

#### Action Items:

- Establish list of goals/activities in need of supplemental funding.
- Research potential funding source matches for the goals/activities in need.
- Appoint subcommittee for preparing calendar and materials per goal/activity in need of supplemental funding.
- Develop calendar for funding opportunities and deadlines.

## Goal 5: Develop Realistic Planning Statistics to Prepare for Growth and Development

Estimates of the amount of water to meet the agricultural, municipal, environmental, and recreational needs of the community are and have been hard to develop. Current efforts as part of the WEP Phase II will help quantify the environmental, recreational, and agricultural structural needs of the Upper San Juan River. See WEP efforts described in further detail section V. Description and Accomplishments of the District. The Growing Water Smart Group (Group) came to a consensus on population projection estimates for low, medium and high growth rates.<sup>24</sup> The Group is currently waiting for results of the 2020 census to further verify those estimates. These collective efforts should provide realistic planning statistics to assist the District in planning for the growth and development of the agricultural, municipal, environmental, and recreational water needs of the community.

#### Goal 6: Research Need for Area Streamgages

Streamgages are primarily operated and maintained by the U.S. Geological Survey (USGS), but most are funded in partnership with other Federal, State, local, Tribal, agencies or organizations. The shared costs result in the operation of far more streamgages than would otherwise be possible if financed solely by USGS. The State Water Engineer has recently noted the need for additional monitoring gages throughout the state to assist in the administration of Colorado's water usage,

<sup>&</sup>lt;sup>24</sup> RPI Consulting, LLC, *Growth Trends and Projections: Archuleta County Growing Water Smart* (2019).

maintain compliance with applicable water laws and compacts, and to assist in implementing the Colorado Water Plan.

There are currently three gages located in Archuleta County that are automatically updated to provide stream data<sup>25</sup>:

- #09342500- located on the San Juan River in Pagosa Springs, CO
- #09346400- located on the San Juan River near Carracas, CO
- #09349800- located on the Piedra River near Arboles, CO

The locations of historical gages in Archuleta County, especially in the Upper San Juan Drainage, have been identified on a map provided by Mountain Studies Institute.<sup>26</sup>

Installing and implementing additional streamgages in Archuleta County may offer tremendous benefits for area agencies and organizations. The information provided by gages on streams can show objective data, which might be useful in the following situations:

- Planning, forecasting, and warning about floods and droughts;
- managing water rights and transboundary water issues;
- define optimal flows for environment/habitat monitoring, stream health, and recreational uses;
- designing reservoirs, roads, bridges, drinking and wastewater facilities; and
- describing impacts to streamflow from changing land and water uses.

Concerns with streamgages to be considered include:

• Long-term expenses associated with operation and maintenance;

<sup>&</sup>lt;sup>25</sup> See data provided by the gauges at: <u>http://www.waterwatch.usgs.gov</u>.

<sup>&</sup>lt;sup>26</sup> Historical Streamgages Map courtesy of Mountain Studies Institute, http://www.mountainstudies.org/sanjuan/smp.

- community sentiment regarding the use of gages in historical areas; and
- regulation/administration of waterways once gages are installed.

The WEP, described in more detail in the Major Projects and Accomplishments of the District in Section V. Description and Accomplishments of the District, is a group of diverse water users in Archuleta County. Those represented in WEP share a common goal of supporting the Colorado Water Plan and could further collective knowledge by documenting additional stream data though the implementation of additional gages.

#### Action Items:

- Establish potential locations for new streamgages;
- discuss with potential partners funding for new streamgages; and
- implement community outreach to those that may have concerns/support the new streamgages.