

Prepared for the Palmer Land Conservancy



The Economic Impacts of Dry-Up on Colorado's Bessemer Ditch

A scenario-based analysis with a review of 1041 requirements, best management practices, and mitigation policy recommendations

EXECUTIVE
SUMMARY



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A scenario-based analysis with a review of 1041 requirements, best management practices, and mitigation policy recommendations.



In Partnership With

Major Funding Provided By



Contributors

Scott Campbell, Author, Principal Investigator
Owner, Innovative Conservation Solutions, LLC

Michael Bartolo, Ph.D., Crop Enterprise/Irrigation Data
Manager, Senior Research Scientist
Colorado State University (CSU) Arkansas Valley Research Center

Anthony Basile, Legal Analysis
Water Attorney, Lyons Gaddis Attorneys & Counselors

Andrew Boyd, Spatial Analytics, Mapping, GIS
Practitioner, Innovative Conservation Solutions, LLC

Denise Dethlefsen, Research/Documentation
Administrator, Innovative Conservation Solutions, LLC

Jeff Kahn, Legal Analysis
Water Attorney, Lyons Gaddis Attorneys & Counselors

Chris Markuson, Economic Impact Analysis, Land Use
Owner and Principal, Anza Group, LLC

Andrew Seidl, Ph.D., Strategy, Quality Control
Professor, Economist, and Public Policy Specialist
CSU Department of Agricultural and Resource Economics

Cover design: Giusti Design
Cover photos: Russ Schnitzer

The consulting team would like to thank the many individuals and organizations who contributed to this report by sharing information, research, and ideas.

May 11, 2021

1. Introduction

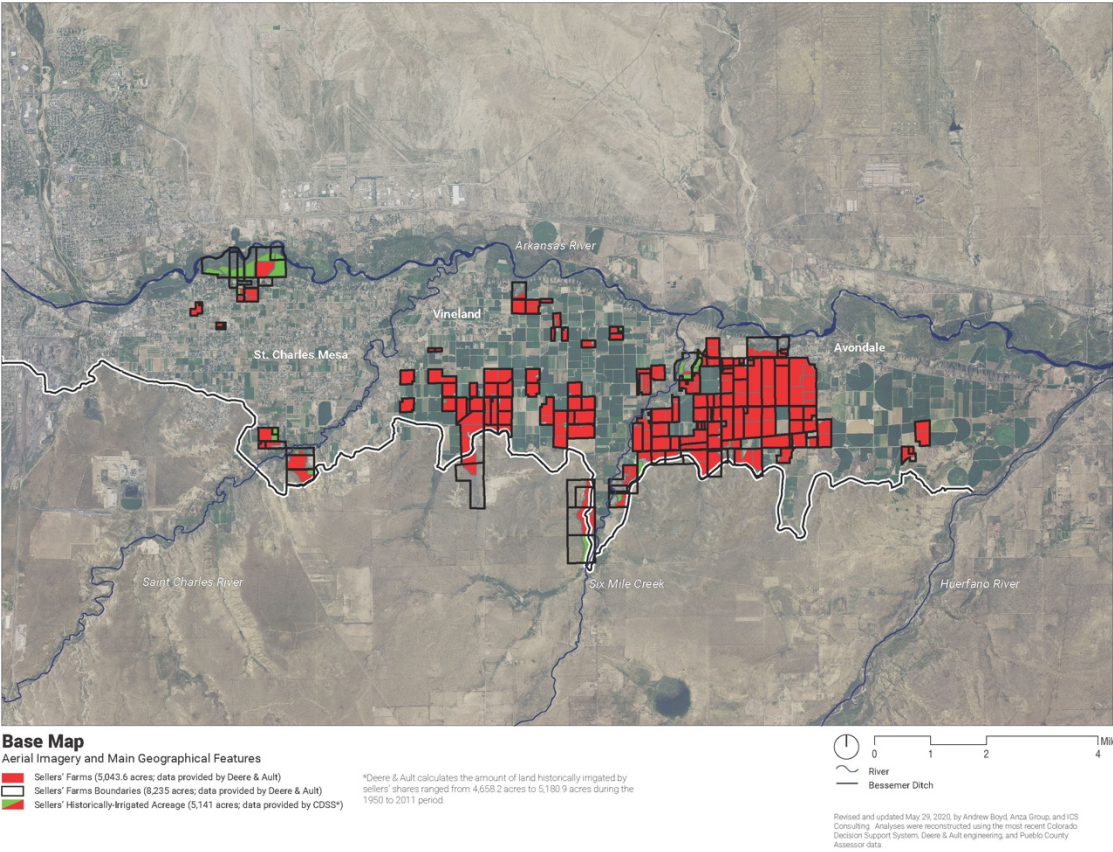
In 2009 and 2010, the City of Pueblo's water utility, The Board of Water Works of Pueblo (Pueblo Water), purchased 5,540 Bessemer Irrigating Ditch Company (BIDC) shares from Pueblo County farmers. The purchase will remove one-third of Bessemer-irrigated farmland from production in the St. Charles Mesa, Vineland, and Avondale communities.

In 2015, 2016, and 2017, a consulting team commissioned by the Rocky Mountain Farmers Union—representing a broad consortium of local stakeholders—executed a series of analyses, which indicate that the dry-up area (approximately 5,141 acres) contains some of Pueblo County's most productive or potentially productive farm ground (Innovative Conservation Solutions (ICS), 2017, p. 13-14). The analyses go on to identify a dry-up alternative with the potential to preserve critical production areas (CPAs), benefit remaining farmers who did not sell their water, retain greater production capability in Pueblo County, and improve ecosystem services—all while enabling Pueblo Water to secure its full municipal yield.

From 2017 to 2019, the Bessemer Project Association (BPA), an opposer in the Water Court change case, worked with Pueblo Water to establish a provision in its decree that would enable this alternative to move forward. The result was a “substitution of dry-up” provision (District Court, Water Division 2, Colorado Case Number 17CW3050, 2019, Section 6.2.4). The substitution of dry-up provision enables Pueblo Water to work with farmers, conservation groups, impact investors, and others to retain the best farmland in production by substituting less productive areas for dry-up. These dry-up candidate areas (DCAs) often exist in locations where environmental gains, such as water quality improvements, can be achieved through more strategic dry-up. Substitutions are advanced through voluntary, market-based transactions, supported by a retained jurisdiction process in Pueblo Water's decree.

In 2020—with financial support from the Colorado Water Conservation Board (CWCB), the Gates Family Foundation, the Robert Hoag Rawlings Foundation, and the David and Lucille Packard Foundation—Palmer Land Conservancy (PLC) commissioned this study, which assesses the economic impacts of drying irrigated farmland in Pueblo County using an exploratory scenario-planning approach. By examining the direct, indirect, and induced economic impacts of different dry-up scenarios made possible by the substitution of dry-up provision and other statutorily enabled dry-up alternatives, this scenario-based economic impact analysis (EIA) can help decision

makers advance a water development plan of action that supports the most efficient use of water, maintains robust economic outputs on fewer irrigated acres, and achieves the best possible socio-economic, land use, and environmental outcomes for Pueblo County.



Pueblo Water's purchase will permanently dry one-third of Bessemer-irrigated farmland (5,141 acres) across three communities: St. Charles Mesa, Vineland, and Avondale—almost all Farmlands of National Importance as designated by the National Resources Conservation Service (ICS, 2017, p. 13).



2 Executive Summary

An agricultural-to-municipal water transfer on Colorado's Bessemer Ditch is poised to remove irrigation water from 5,141 acres of farmland in three unincorporated Pueblo County farm communities: St. Charles Mesa, Vineland, and Avondale. Dry-up will supply the City of Pueblo with municipal and industrial water. The dry-up area equates to one-third of the Bessemer-irrigated farmland in the three communities. This study assesses—and proposes approaches to mitigate—dry-up's economic impacts, which are substantial. The range of loss to Pueblo County is estimated to be between \$8.4 million and \$17 million annually.¹

Pueblo County has enacted some of Colorado's most stringent requirements for mitigating the agricultural-economic impacts of water supply projects through its 1041 permit regulations. 1041 permit review standards state:

1. water supply projects must address the **"loss of agricultural productivity;"**
2. water supply projects must address **"impacts...on the local economy;"** and
3. water supply projects must **"not significantly degrade any current or foreseeable future sector of the local economy"** (Pueblo County Land Use Code (LUC), (n.d.), Chapter 17.172, Section 120E(5)(b), E(9); Section 130B(10); Section 260B(6)).²

The requirement to not degrade any current or foreseeable future sector of the local economy, which includes agriculture, requires mitigating the impacts of dry-up within the agricultural sector itself, irrespective of the urban economic gains made through the procurement of new water supplies.³ Accordingly, this study limits its economic impact analysis (EIA) to the effect dry-up will have on agricultural production's direct, indirect, and induced economic impacts in Pueblo County and options the Board of Water Works of Pueblo (Pueblo Water), the City of Pueblo's municipal water provider, has to mitigate these impacts.

¹ \$8.4 million is the estimated reduction in total, current, annual agricultural-economic output; \$17 million is the estimated reduction in foreseeable future economic output.

² Colorado's Areas and Activities of State Interest Act (AASIA) gives local governments authority (commonly known as "1041 powers") to regulate land use matters of state interest in order to protect "the health, welfare, and safety of the people [and the] environment" (C.R.S., 2018, § 24-65.1-101).



Bessemer-irrigated farmland in Pueblo County, Colorado. The Arkansas River is on the left. The City of Pueblo (pop. 111,000) is behind the photographer. Bessemer farms represent some of the best production lands in the state and are served by some of the most senior water rights in the Arkansas River Basin. Photo © John Wark/Airphoto NA.

³ The appropriation of agricultural water by municipal interests usually results in economic growth in the receiving region (i.e., the City of Pueblo) and economic decline in communities of origin (i.e., St. Charles Mesa, Vineland, Avondale), and it is not uncommon for economic gains in urban areas to exceed economic losses in agricultural ones.

The study does this by investigating the economic impacts of water development under different dry-up scenarios. Through a “substitution of dry-up” provision in its decree and through other alternatives enabled by state statute—as well as through proactive mitigation actions and investments—Pueblo Water has the ability to advance an approach to water development that avoids or redresses dry-up’s economic impacts and keeps Pueblo County’s farm communities, if not whole, at least functioning at robust capacity.⁴ Some alternative dry-up scenarios are more effective at mitigating the economic impacts of water development than others. Some can be implemented without reducing Pueblo Water’s consumable yield. All optimize the use of limited water supplies to create better economic outcomes. Optimization practices examined in the scenarios include:

- drying lands strategically to retain irrigation on the most productive soils,
- improving yields and reducing operating costs through precision irrigation,
- shifting to more water-efficient, high-value crops, and
- establishing innovative water-sharing partnerships that retain more irrigated land in production.

The study then makes policy recommendations to lower the barriers that limit adoption of these practices by farmers. By linking scenario-based economic analyses to mitigation policy recommendations, a decision support framework is established that can help Pueblo County and Pueblo Water negotiate a dry-up plan of action that promotes the efficient utilization of water; enables farm communities to maintain robust economic outputs on fewer irrigated acres; and achieves the best possible agricultural, socio-economic, land use, and environmental outcomes.

Mitigating Dry-Up

Policy recommendations draw from national best management practices (BMPs) that can inform a regional approach to mitigating dry-up’s economic impacts. BMPs generally focus on two types of mitigation activity: (1) actions taken to reduce the impacts of the water transfer; and (2) monetary investments made to offset impacts. Examples include:

In buy-and-dry contexts, the primary (and often only) community-oriented strategic objective that the notion of “willing buyer, willing seller” supports is a municipal one: obtaining a maximum yield of water through a minimal number of purchase transactions. Municipal acquisitions often target the most senior water rights (since the most senior rights are the most reliable), the largest holdings (reducing the number of transactions required), and the most productive lands (since the most productive lands often demonstrate the greatest consumptive use history and therefore yield the most water). On the Bessemer, the sale of water interests from less than 10% of its shareholders will dry-up one-third of the production ground in St. Charles Mesa, Vineland, and Avondale, creating repercussions that will affect over 700 remaining shareholders and result in an \$8.4 to \$17 million annual loss to the Pueblo County economy.

- In California, municipal water providers helped establish a \$50 million grant program in the Imperial Irrigation District (IID) and a \$6 million community improvement fund in the Palo Verde Irrigation District (PVID) to offset the economic impacts of municipal lease-fallowing. The municipalities recognized that even the economic impacts of temporary, term-limited dry-up on forward- and backward-linked industries, employment, and consumer spending would be substantial. The \$50 million mitigation investment on IID equates to 30% of the total 15-year municipal water lease price. The \$6 million investment on PVID equates to 4% of a 35-year lease price (WestWater Research, 2018, p.7).
- In Nevada, the Walker Basin Restoration Program (WBRP) acquired and dried farms to improve water quantity and quality in Walker Lake. \$24 million supported the acquisition and resale of farms, ditch analyses, irrigation improvement projects, and an Agricultural Sustainability Pilot Project (Yardas & Aylward, 2016, p. 16, 32). The pilot project demonstrated how support for optimized crop production on fewer irrigated acres could mitigate the economic impacts of dry-up. It advanced a “food-not-feed” program where water-efficient, high-value vegetable crops replaced alfalfa and irrigated pasture. Economic studies showed that for every 6.5 acres WBRP acquired, if one acre of food-not-feed was established for 5.5 acres of dry-up, the labor force would remain constant and overall economic output would increase by 10% (Yardas & Aylward, 2016, p. 72).

⁴ The substitution of dry-up provision in Pueblo Water’s decree (District Court, Water Division 2, Colorado Case Number 17CW3050, 2019, Section 6.2.4), enables Pueblo Water to work with farmers, conservation groups, or others to retain the most

productive farmland (critical production areas or CPAs) in production by substituting less productive areas (dry-up candidate areas or DCAs) for dry-up—areas where environmental gains, such as water quality improvements, can be achieved.

- In Colorado's Lower Arkansas Valley, the City of Aurora retained nearly 900 of 2,800 acres in a Continued Farming Program when it purchased shares on the Rocky Ford Ditch. The city dedicated augmentation water to support farmers using groundwater-served drip irrigation systems and covered the costs of installing those systems up to \$1,400/acre (LGAC, 2021, Aurora—Arkansas River ATM Plans, p. 2).⁵ The program enabled farmers to convert to high-value, water-efficient crops such as vegetables, melons, and grains. More recently, in 2019, Colorado's first statutory Interruptible Water Supply Agreement was transacted between the Lower Arkansas Valley Super Ditch Company and the City of Fountain, establishing a term-limited water sharing agreement that provides an alternative to permanent dry-up (LGAC, 2021, ATM Analysis, p. 5).

These BMPs demonstrate the variety of ways western communities are working to reduce and redress dry-up's impacts. Implicit in them all is the acknowledgement that, without proactive mitigation actions and investments, dry-up results in the failure of forward- and backward-linked agricultural industries, job loss, diminished growth potential in the agricultural sector, increasing hardships for farmers who remain in farming (incentivizing additional water sales), main street business decline, and fiscal and land use challenges for local governments.



Pueblo Chile peppers from Bessemer farms. Photo by Russ Schnitzer.

⁵ Actual 2005 cost. In 2020 dollars, this equates to \$1,855/acre.

The Economic Impacts of Dry-Up

Strategic approaches to dry-up, enabled by Pueblo Water's decree and state statute, can aid the utility's obligation to mitigate dry-up's impacts. To compare the economic trajectory of different dry-up approaches, the EIA assesses the economic impacts of multiple production and dry-up scenarios in light of 1041 requirements and dry-up mitigation BMPs. The scenarios include:

1. **Current Production.** Production outputs are evaluated for the five most recent production years where production data was available: 2014-2018. A representative year with median production outputs, 2017, is used to represent current production.
2. **Foreseeable Future Production.** Historic production trends from the 1940s through the present are examined. Those with a reasonable likelihood of re-emerging—but for dry-up—inform what a foreseeable future production scenario might look like. Emerging markets are also considered in this scenario.
3. **Anticipated Dry-Up.** The effects of dry-up on both current production and foreseeable future production are calculated. Calculations assume dry-up occurs on all lands where Pueblo Water purchased water, subject to the decree.
4. **Dry-Up Alternative 1: Substitution of Dry-Up.** Substitution of dry-up alternatives evaluate the effects of drying lands more strategically in order to retain irrigation on the most productive soils. Most substitution of dry-up scenarios combine substitutions with shifts to more water-efficient, high-value crops.
5. **Dry-Up Alternative 2: Continuing Farming.** Continuing farming alternatives evaluate a water-sharing approach that does not result in total dry up. Drip irrigation systems are installed on the most productive lands and are augmented by Pueblo Water. These systems also support water-efficient, high-value crops.
6. **Dry-Up Alternative 3: Rotational Fallow.** Rotational fallow alternatives evaluate another water-sharing approach, which fallows fields three out of ten years to serve both municipal and agricultural needs. A greater percentage of water-efficient, high-value crops are grown on participating farms.

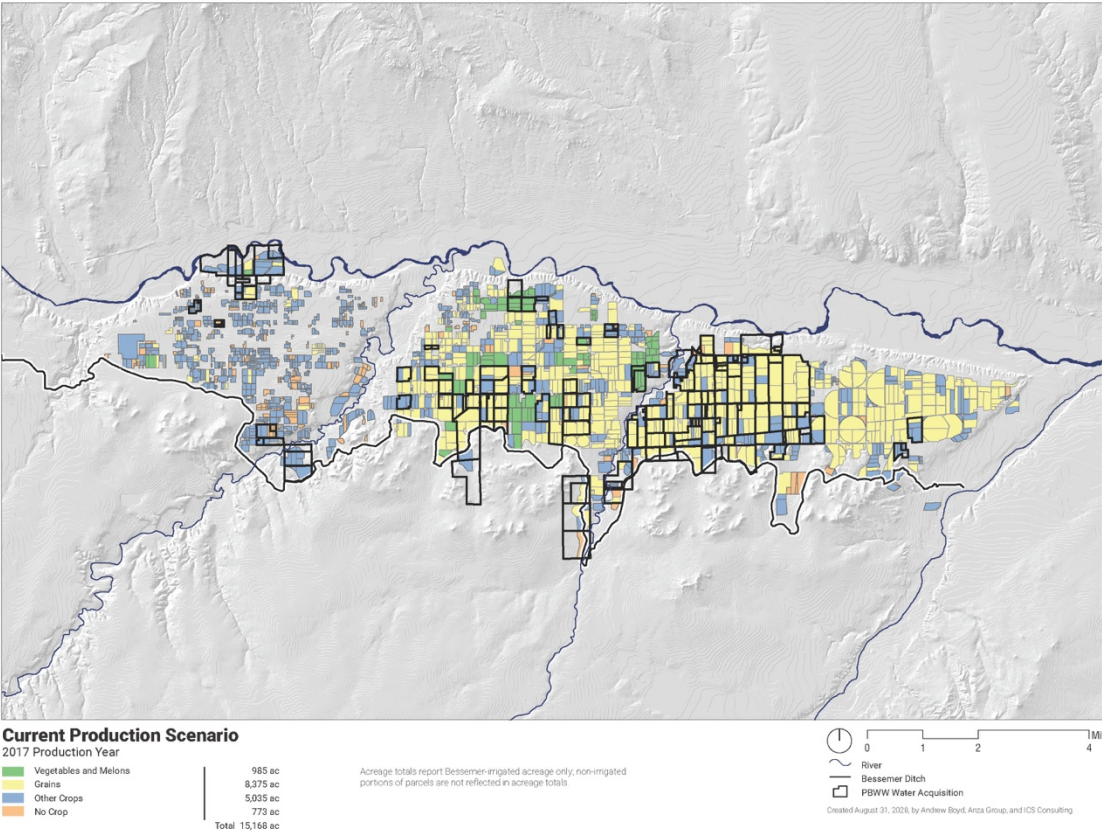
The results, represented in 2020 dollars, are as follows:⁶

⁶ Results generated by the IMPLAN® model, using inputs provided by the user and IMPLAN Group LLC, IMPLAN System (data and software), 16905 Northcross Dr., Suite 120, Huntersville, NC 28078 www.IMPLAN.com

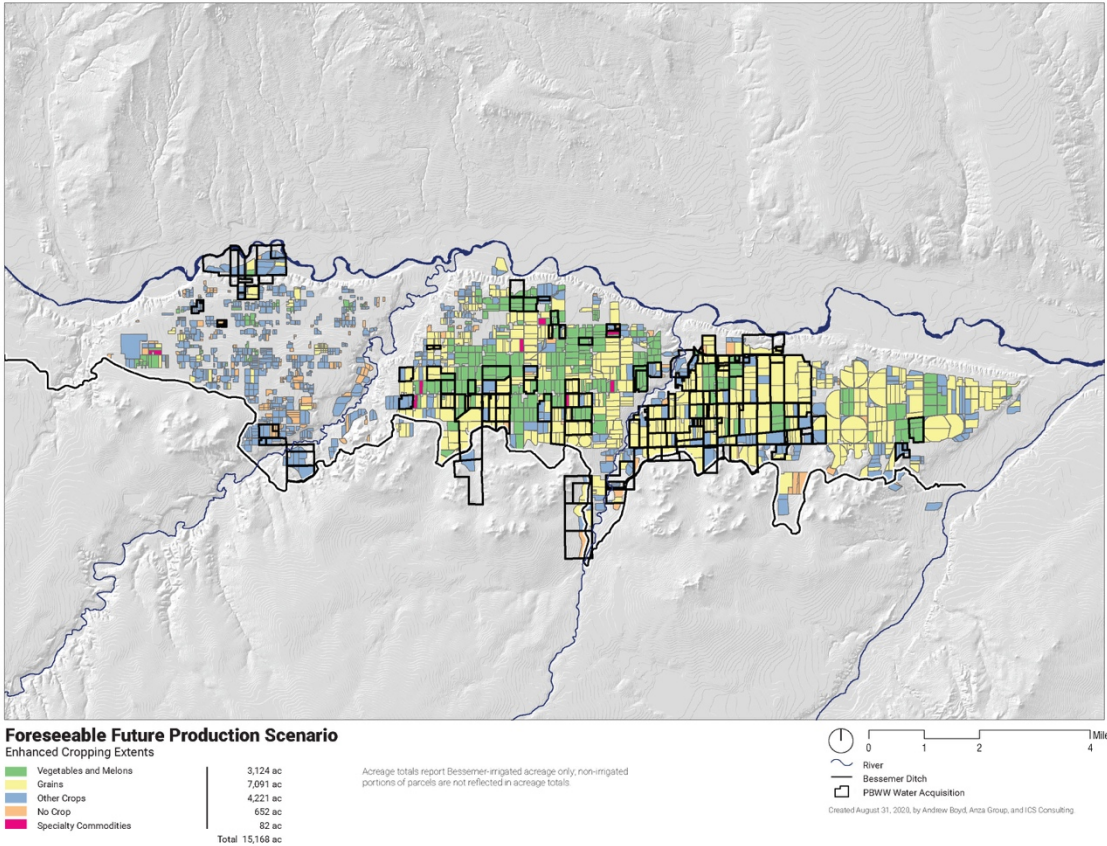
Current production on Bessemer-irrigated lands (see map below) generates \$29.1 million/year in county-level economic activity. It supports a robust number of jobs: approximately 530 full-time equivalents (FTEs). The FTE count equates to a higher number of actual jobs due to the fact that many jobs are part-time (i.e., 530 FTEs may represent 700, 800, or even more livelihoods). Under current production, \$18.7 million in economic activity is generated by gross crop receipts alone. These are the direct economic impacts of Bessemer production. An additional \$6.5 million is generated from forward-linked and backward-linked industries. These are the indirect economic impacts of Bessemer production. Forward-linked industries include businesses such as processors, distributors, and wholesalers; backward-linked industries include businesses such as

seed, irrigation, and equipment suppliers. Over \$3.9 million in induced economic activity is generated from the infusion of Bessemer-derived earnings into the Pueblo County economy. Induced economic impacts reflect spending on homes, cars, restaurants, etc. The sum of these direct, indirect, and induced economic impacts (\$29.1 million) is the total economic output derived from Bessemer production.

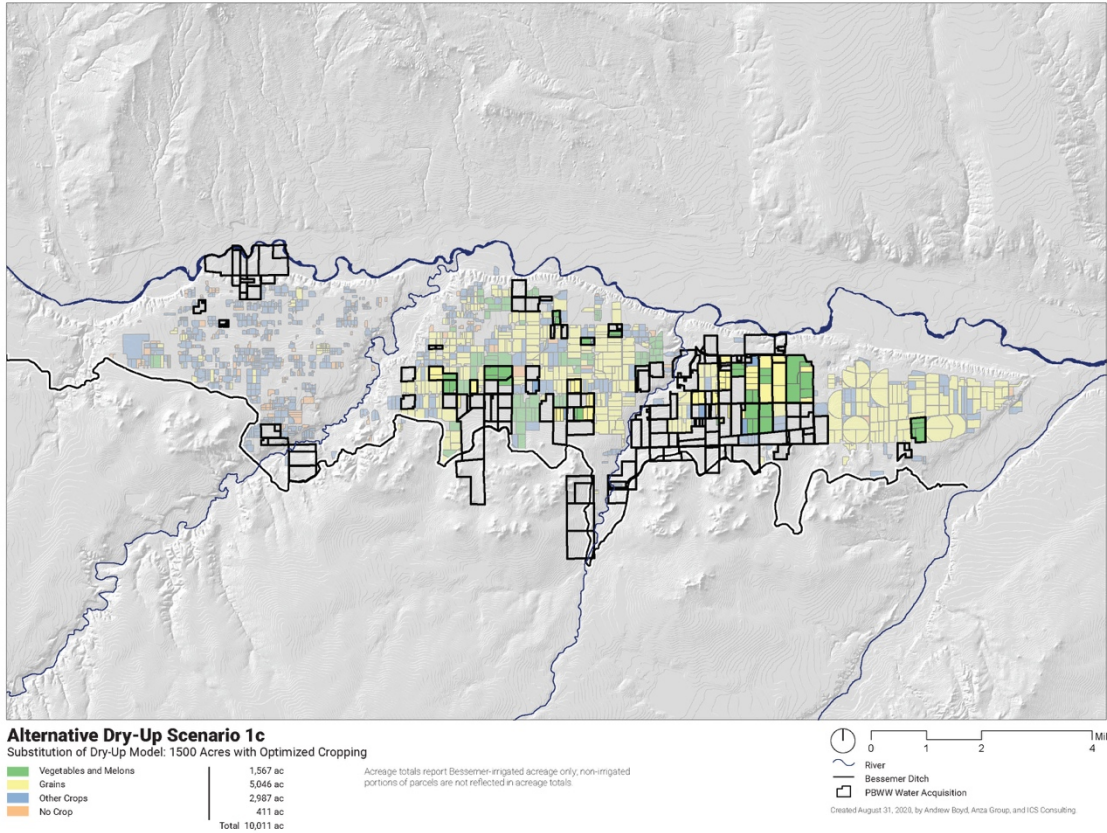
Dry-up by Pueblo Water (see map below) will reduce total economic output by \$8.4 million/year (to \$20.7 million) and result in the loss of 145 FTEs. This is the cost of dry-up. Dry-up will also



affect foreseeable future production potential. Foreseeable future production (see map below) contemplates vegetable and melon production commensurate with 1990 levels (just over 3,100 acres—less than what was produced throughout much of the 20th century, but more than what is produced currently). It also contemplates 80 acres of specialty commodities (non-THC hemp for CBD oil production). The effects of dry-up under this scenario will reduce total economic output by \$17 million annually (from \$65 million to \$48 million) and employment by 271 FTEs (from 1,052 to 781). This is the opportunity cost of dry-up.



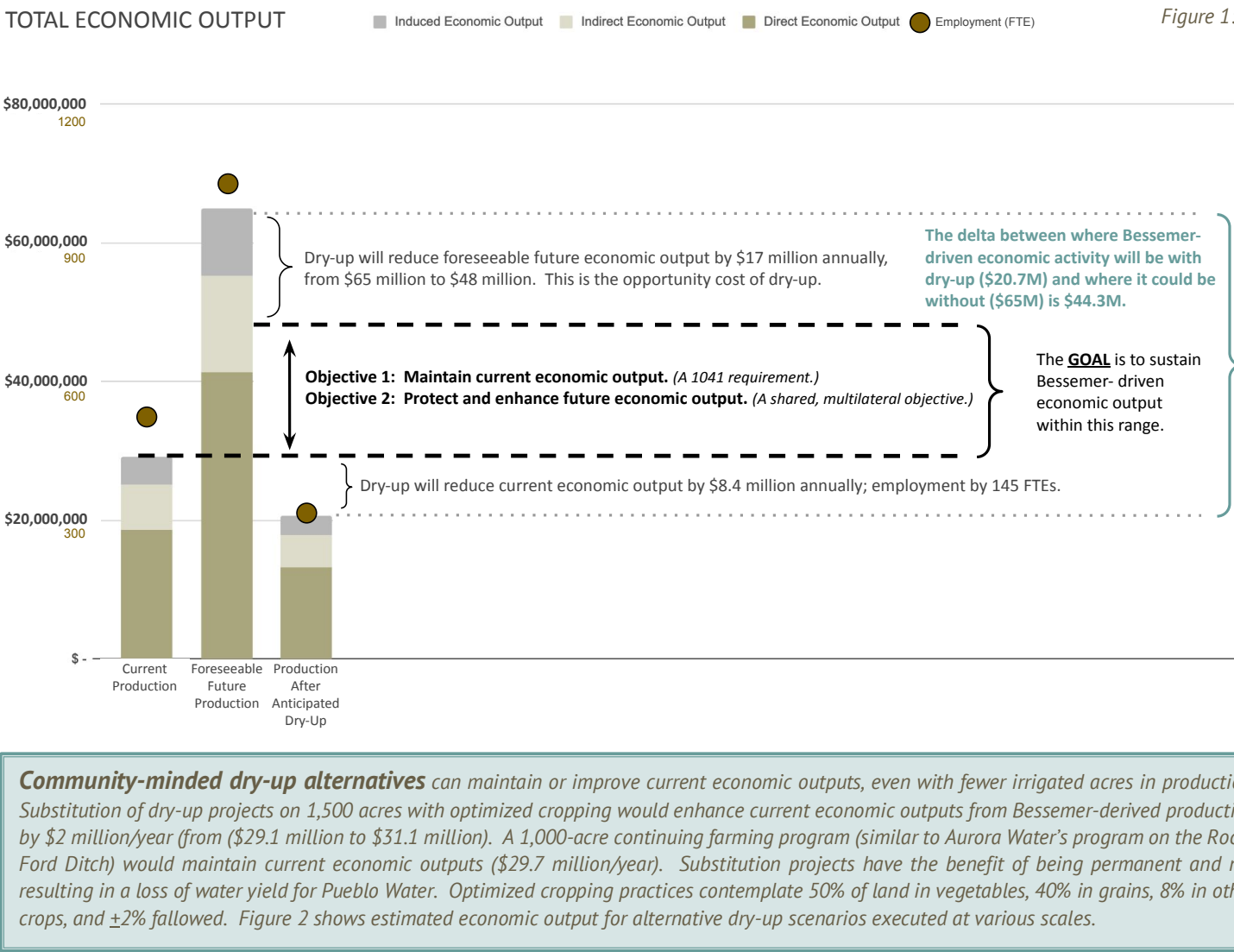
Strategic dry-up alternatives demonstrate potential to maintain and even enhance current economic outputs derived from Bessemer-irrigated lands. For example, substitution of dry-up projects on 1,500 acres with optimized cropping (see map below) would enhance total economic outputs over current Bessemer-derived production by \$2 million/year (from (\$29.1 million to \$31.1 million), even with 5,141 acres of dry-up. Substitution of dry-up projects have the benefit of being both permanent and enabling Pueblo Water to secure its full municipal yield. A 2,000-acre rotational-fallow alternative (similar to the Super Ditch lease-fallow program in the Lower



Arkansas Valley), combined with optimized cropping, can more than offset the dry-up loss (\$36 million/year in total economic output). Unfortunately, this scenario is complex and, due to statutory hurdles, is likely to be temporary—something sustained for a period of 30 years or less.⁷ The scenario also results in a loss of yield for Pueblo Water. Finally, a 1,000-acre continuing farming alternative with optimized cropping (similar to Aurora Water’s Continued Farming Program on the Rocky Ford Ditch) would also maintain current economic outputs (\$29.7 million/year). A continuing farming alternative could be temporary or permanent depending upon how it was implemented. It offers an innovative water-sharing model that results in some net loss of yield for Pueblo Water.

Guiding Principles

It is impossible to dry-up one-third of Bessemer production ground and not permanently degrade foreseeable future growth in the agricultural sector. The goal, therefore, must be to sustain Bessemer-driven economic outputs between current levels (\$29.1 million) and the growth limits that dry-up will impose (with 5,141 acres of dry-up: \$48 million) (see Figure 1). Two objectives underlie this goal. The first objective is to maintain current economic outputs. This is central to 1041 requirements, and Pueblo Water will be obliged to address this matter. The second objective is to protect and enhance future economic output. This is not a unilateral responsibility of Pueblo Water, but rather a shared, multilateral objective.



⁷ This statement assumes this program would be run through an interruptible water supply agreement. The program could be made permanent through a rotational crop management contract, but this: (a) requires adjudicating the contract in Water Court; and (b) has not been done before.



TOTAL ECONOMIC OUTPUT

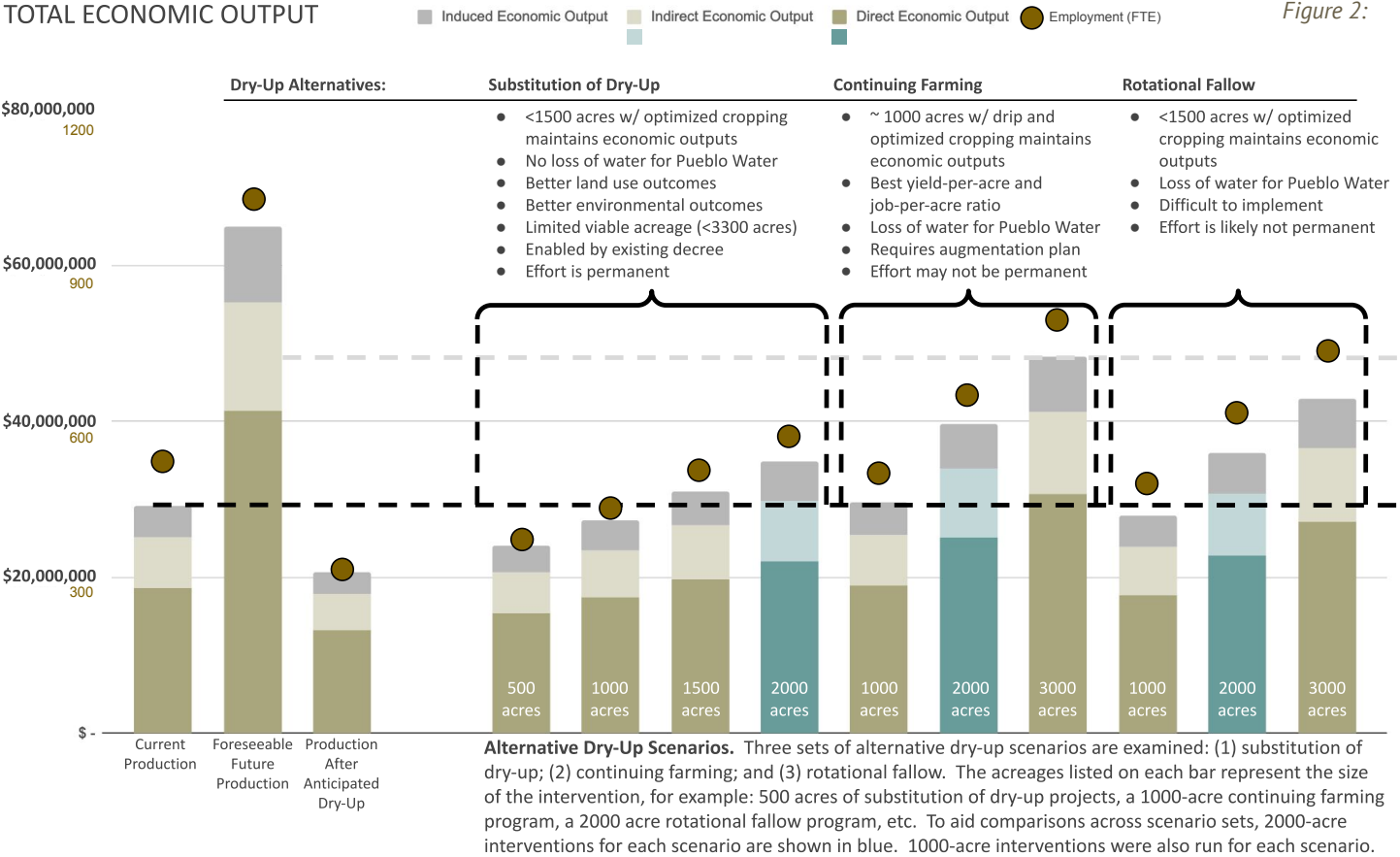


Figure 2:

In undertaking these efforts, four principles should be guiding:

1. Redress loss within the Bessemer economic ecosystem.

Redress to Bessemer farms, businesses, and industries requires, in part, higher outputs from fewer Bessemer-irrigated acres. This can be achieved by supporting higher value crops and/or higher crop yields. There are obviously impediments to achieving higher values and higher yields—otherwise, farmers would already be doing it. Impediments might include: (a) lack of access to labor; (b) lack of processing and/or distribution infrastructure; or (c) undercapitalization (for example, capital to install irrigation systems that increase yields and/or reduce costs, or capital for expanding into high-value markets). Removing these impediments strengthens remaining production capacity.

2. Retain the best lands in agriculture.

Retaining the best lands in irrigated agriculture—an opportunity enabled by state statute and made even more feasible by the substitution of dry-up provision in Pueblo Water’s decree—will incentivize higher-value crop production: farmers will naturally seek higher returns on higher value lands. Better lands will also produce better yields. The EIA indicates that 3,300 acres of substitution projects, with no change in current crop type, would reduce annual losses by 22% over anticipated dry-up—lessening the total economic impact of dry-up from \$8.4 million per year to \$6.6 million.⁸

3. Support remaining producers.

Remaining producers are the agents who will enhance economic outputs on a smaller agricultural land base. As

⁸ 3,300 acres represents total substitution project potential. Implementing 1,000 acres of substitution projects (restoring permanent water from approximately 1,000 DCA acres to 1,000 CPA acres) seems highly feasible; 2,000 acres likely represents a threshold for what is viable given farmer interest, parcel size, etc., although greater numbers are possible.

such, investing in their work is essential. Mitigation activities and investments can focus on efforts that generate both direct (field level) and indirect economic benefits. These may be bottom-up investments (such as helping farmers expand or enhance production, processing, and distribution capacity) or top-down investments (such as helping supportive industries raise the production outputs of all farmers).

4. Protect remaining production acreage.

The total economic output on 15,168 acres of Bessemer-irrigated farmland equates to just under \$2,000 per acre. Retaining this economic output on 10,027 acres requires each acre to generate \$3,000 in total economic activity rather than \$2,000. This 50% increase is achievable and falls within historic precedent. But a loss of just 2,500 more acres (leaving 7,500 acres in production) requires each acre to generate \$4,000 in total economic activity. A loss of 5,000 acres requires each acre to generate \$6,000 in total economic activity—a 200% increase with no historic precedent. As such, protecting the remaining irrigated land base is essential to preserving Pueblo County’s foreseeable future agricultural potential.

Policy Recommendations

Five policies to advance guiding principles are proposed. The policies draw from national dry-up mitigation BMPs and address the specific needs, opportunities, and challenges present in Pueblo County. Policies one and two are largely administrative but foundational. Policies three and four embody the most substantive and important mitigation actions and investments. Policy five focuses on structures and processes to implement mitigation efforts effectively. The policies are:

1. Affirm Non-Negotiables.

The requirement to not degrade any current or foreseeable future sector of the local economy, including agriculture, is a defining non-negotiable. Additional non-negotiables should be established to protect parties’ abilities to mitigate the anticipated impacts of dry-up as proactively as possible, to the greatest extent possible, for the longest period of time possible.

2. Establish Smart Lease Guidelines.⁹

Mitigation is going to be hampered by split estates. If Pueblo Water owned the farms where it purchased water, it could be highly strategic in establishing locations for continuing farming

programs or substitution of dry-up projects. It could convey lands at subsidized rates to remaining farmers interested in helping to offset the economic impacts of dry-up through optimized production practices. Pueblo Water’s lease of Bessemer shares back to selling farmers will need to be strategic if it is going to address the problems posed by split estates. Without a strategic approach to lease renewal, lease extensions may simply enhance water sellers’ assets without necessarily benefitting remaining farmers, incentivizing higher value production practices, or insulating the farm community against projected economic decline. Pueblo Water must consider these challenges when renewing leases.

3. Support Alternative Dry-Up Scenarios.

Through the substitution of dry-up provision in its decree, and through alternatives enabled by state statute—including interruptible water supply agreements, augmentation plans, and rotational crop management contracts—Pueblo Water has the ability to advance a water development approach that retains the best lands in production and achieves the best possible socio-economic, land use, and environmental outcomes.

4. Invest in Farms and Farm Enterprises.

Maintaining current economic outputs on fewer irrigated acres requires optimizing production practices. This means lowering or removing barriers to optimization. Four types of mitigation investments can reduce barriers, protect remaining farmland, and enhance production outputs. These include: (a) farmland preservation investments; (b) irrigation technology investments; (c) enterprise development investments; and (d) labor force investments.

5. Establish Mitigation Operating Structures and Investment Protocols.

Pueblo County will ultimately determine the regulatory and financial obligation Pueblo Water has to mitigate the economic impacts of dry-up. The county’s goal will be to ensure mitigation actions and investments are sufficient to maintain current economic outputs and protect future growth. Pueblo Water’s goal will be to minimize mitigation cost and maximize return on investment. Both objectives require strategic leadership and competent administration of funds. Creating or designating a mitigation administrator that can operate as though it is one part farmland conservation organization and one part community development corporation—with operating and investment guidelines to support policy recommendations—will ensure effective oversight.

⁹ Following its acquisition, Pueblo Water leased all of its purchased water back to farmers. The leases terminate in 2029. In November of 2020, Pueblo Water offered 10-year lease extensions (i.e., until 2039) to all of its lessees. Standing lease rates equate to 100% of BIDD share dues (presently \$55/share). Extensions were offered at 120% of share dues (\$66/share).

Pueblo County is poised to set two critical precedents. First, the 1041 permit that Pueblo County issues will set the mitigation standard for any future, out-of-ditch, agricultural-to-municipal water transfer on the Bessemer by any other municipality. Second, as virtually no other location in the country demonstrates such an incredible opportunity to optimize water use for both agricultural and urban users, Pueblo County can forge an unprecedented ag-urban partnership—one that mitigates the economic impacts of dry-up and creates better outcomes for cities, agriculture, and nature.

Figure 3 lists 17 potential actions and investments that support the five policy recommendations. In the Policy Recommendations chapter, these actions and investments are expounded upon and ranked using a method that factors in both implementation considerations (cost, difficulty, time, durability) and adherence to guiding principles. Not every action needs to be taken or investment made to ensure mitigation is effective, but neither can a single action taken alone bring about the desired results. A majority of actions, logically intertwined, is needed to be effective.

Two examples of high-performing mitigation approaches that link mitigation actions and investments together are offered in Figure 4. Each example has some things in common with the other, but one places greater emphasis on implementing alternative dry-up scenarios that retain the best land in production while the other focuses more on protecting remaining farmland and enhancing production economics on that land. The examples are not meant to be prescriptive but suggestive. They offer a foundation for comparison, discussion, and strategy development. Further examination of possible approaches can build better understanding about the pros and cons of certain choices; and this, in turn, can foster negotiation and advance agreements that result in effective mitigation efforts.

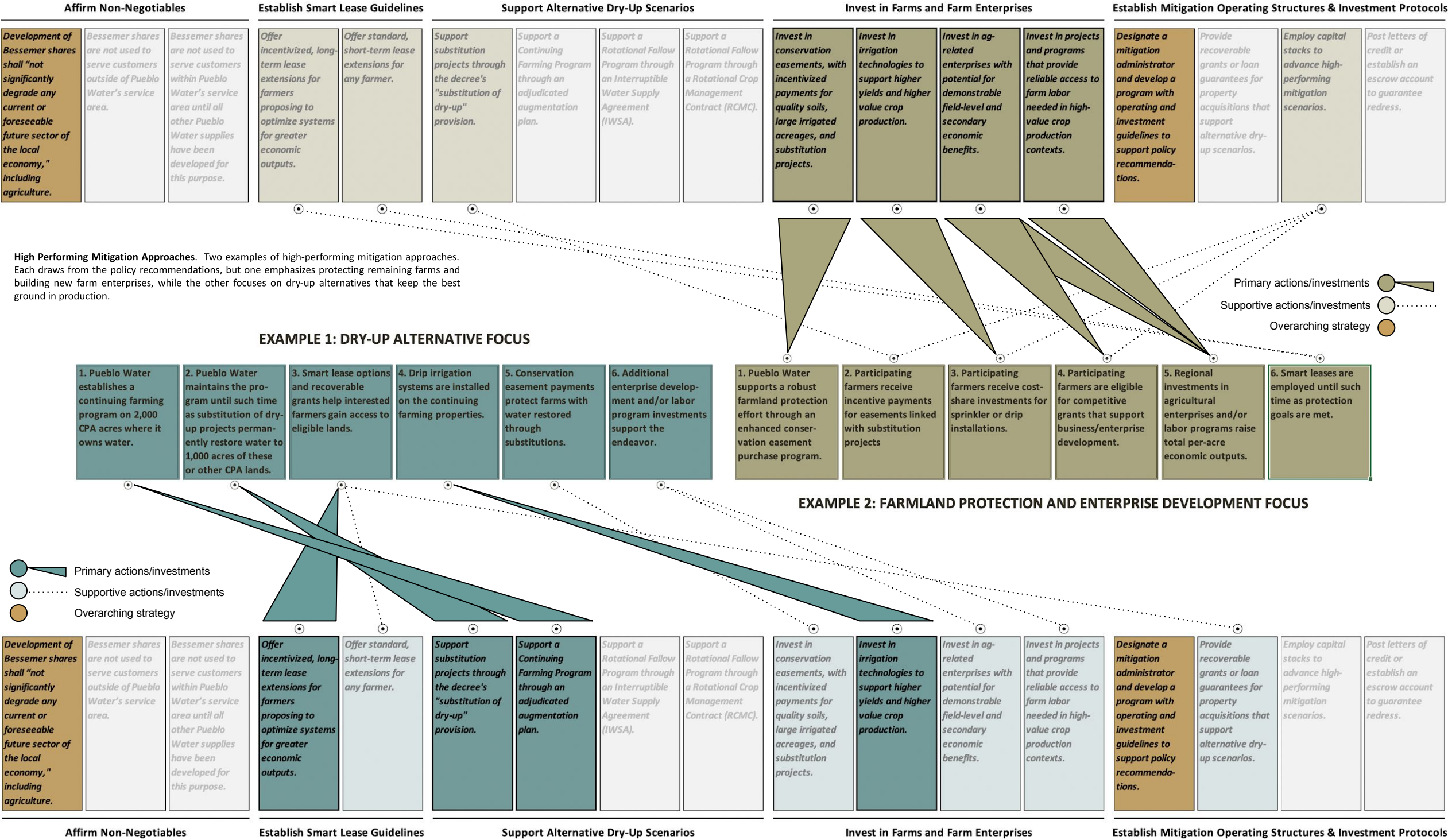
Conclusion

Pueblo County and Pueblo Water have an unprecedented opportunity to demonstrate how cities and agriculture can both thrive in water constrained contexts. Regulatory (1041) requirements will drive the minimum standards Pueblo Water must adhere to in mitigating the economic impacts of dry-up; and these, in turn, will set a critical precedent for any future, out-of-ditch water transfers by other municipalities. Voluntary cooperative agreements between Pueblo Water and Pueblo County stakeholders can enhance mitigation efforts. On this front there is much that can be done and should be done. Collaborations, partnerships, collective-impact endeavors—these undertakings will define how a multitude of interested parties can sustain Pueblo County’s agricultural communities and build the agricultural economy of the future.

Figure 3

Policy Recommendations (with potential actions and investments)	Guiding Principles			
	Redress an \$8.4 Million Annual Loss	Retain the Best Lands in Agriculture	Benefit Remaining Producers	Protect Irrigated Farmland
1. Affirm Non-Negotiables				
i. Development of Bessemer shares shall “not significantly degrade any current or foreseeable future sector of the local economy,” including agriculture.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ii. Bessemer shares are not used to serve customers outside of Pueblo Water’s service area.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
iii. Bessemer shares are not used to serve customers within Pueblo Water’s service area until all other Pueblo Water supplies have been developed for this purpose.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Establish Smart Lease Guidelines				
i. Offer incentivized, long-term lease extensions for farmers proposing to optimize systems for greater economic outputs.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
ii. Offer standard, short-term lease extensions for any farmer.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Support Alternative Dry-Up Scenarios				
i. Support substitution projects through the decree’s “substitution of dry-up” provision.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
ii. Support a Continuing Farming Program through an adjudicated augmentation plan.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iii. Support a Rotational Fallow Program through an interruptible water supply agreement (IWSA).	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
iv. Support a Rotational Fallow Program through a rotational crop management contract (RCMC).	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Invest in Farms and Farm Enterprises				
i. Invest in conservation easements, with incentivized payments for quality soils, large irrigated acreages, and substitution projects.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
ii. Invest in irrigation technologies to support higher yields and higher value crop production.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iii. Invest in ag-related enterprises with potential for demonstrable field-level and secondary economic benefits.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iv. Invest in projects and programs that provide reliable access to farm labor needed in high-value crop production contexts.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
5. Establish Mitigation Operating Structures and Investment Protocols				
i. Designate a mitigation administrator and develop a program with operating and investment guidelines to support policy recommendations.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
ii. Provide recoverable grants or loan guarantees for property acquisitions that support alternative dry-up scenarios.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iii. Employ capital stacks to advance high-performing mitigation scenarios.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
iv. Post letters of credit or establish an escrow account to guarantee redress.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Figure 4





phone: 303.981.8015
email: scott@icsconsulting.biz
web: icsconsulting.biz

1518 Winfield Ave
Colorado Springs, CO 80906



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