

CITY OF CLOVIS
MASTER WATER ASSURANCE PLAN

Prepared & Submitted by
The Water Policy Strategic Planning Team

Approved by
The City of Clovis Commission
December 21, 2017

City of Clovis Water Policy Strategic Planning Team

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- ✚ Sandy Chancey, Executive Director, Eastern Plains Council of Governments
- ✚ Ladona Clayton, City Commissioner & Chair
- ✚ Gene Hendrick, Clovis Industrial Development Corporation (CIDC)
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- ✚ Tom Phelps, Interim City Manager, City of Clovis
- ✚ Blake Prather, Member-at-Large
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I. EXECUTIVE SUMMARY

The City of Clovis Water Policy Strategic Planning Team provides this Executive Summary as an overview of the assignment initiated by the Water Policy Advisory Committee and the City of Clovis to develop a plan to secure a sustainable water supply. This six-month journey recognizes that “water is essential for all dimensions of life” and resulted in five action plans outlining specific steps that were determined to be essential to realizing each identified result. A preliminary cost-benefit analysis was conducted to determine the estimated cost of implementing each action plan.

The City of Clovis Master Water Assurance Plan directly aligns with four of the 12 recommendations outlined in the Northeast New Mexico Regional Water Plan, September 2016. We believe addressing these four key recommendations favorably positions the City of Clovis to apply for and receive state-level funding. The remaining eight recommendations, as listed under *Key Program and Policy Recommendations* in section 8.3.3, solely fall under the purview of the state. The four recommendations from the Northeast New Mexico Regional Water Plan are as follows:

1. Support and seek funding for implementation of statewide data collection and aquifer mapping programs. [*Lifetime projections for the High Plains Aquifer in east-central New Mexico*, Rawling & Rinehart, July 2017]
2. Support policies that promote water reuse and efforts to advance treatment technologies (reducing costs). [Action plan #1, Effluent Water Reuse]
3. Provide resources for watershed-scale watershed management and playa lake conservation projects. [Action Plan #3, Playa Lake Restoration]
4. Support the creation of an agricultural water conservation initiative, which would pay producers to reduce their irrigation demands by funding the implementation of agricultural water conservation sub-strategies (also assist with the identification of funding). Such a program could allow agricultural water to be banked or potentially leased for municipal use. [Action Plans #2 and #4, Water Banking and Conservation Land & Water Trust]

The Northeast New Mexico Regional Water Plan also cited the City of Clovis in section 4.1.5.2 recognizing that the use of water is regulated in the City of Clovis through its Water Management Ordinance set forth in the City Code and is guided by the City of Clovis Comprehensive Plan (Consensus Planning Engineers, Inc. 2007).

The City’s Water Management Ordinance states that it is the policy of the City to protect and conserve the consumption of water in order to insure and protect the availability of the supply of water for all residents and citizens of the City (Section 13.24.10). The Comprehensive Plan recognizes that water supplies are crucial to the continued well being of the City’s residents and economy and that new sources and

conservation of existing water resources must be identified and acquired. The Plan outlines five water goals for the City:

1. Increase conservation
2. Reduce the drain on the aquifer
3. Identify new water sources for long-term supply
4. Obtain grants for the construction of water improvements
5. Protect the quality of existing water supplies

THE MASTER WATER ASSURANCE PLAN FULLY SUPPORTS AND ALIGNS WITH THE CITY'S WATER MANAGEMENT ORDINANCE AND COMPREHENSIVE PLAN.

A. Scope of the Work

The Water Policy Advisory Committee commissioned a Water Policy Strategic Planning Team on January 11, 2017, to research, identify, and recommend effective strategies vital to securing a sustainable water supply for the City of Clovis for the next 40 years. City Commissioner Clayton was charged with the responsibility of organizing and leading the team, which was launched on January 19, 2017. Every team member of the nine-member team was provided with key historical research documents to read, including data, legislation, and studies directly related to the issues surrounding the significant decline of the Ogallala Aquifer. At the meeting on February 2, 2017, the team posed 24 central questions to focus the research. More than 15 additional questions were raised. Each question was answered and served to advance the work of the strategic planning team. The team met biweekly, convening for 3-4 hours each session, through May 17, 2017. Additional research was conducted, and data determined to be crucial to the decision-making process were provided to every team member for further study [see *List of Research Materials* in Appendix A]. On May 17, the team toured the paleochannel to identify a possible water supply for the future. The team held a two-day, intensive planning session on May 30-31 to finalize the City of Clovis Master Water Assurance Plan to present to the Water Policy Advisory Committee in early August.

In addition to conducting a series of strategic planning sessions, one or more members of the Water Policy Strategic Planning Team attended the following meetings or tours related to creating or financing a water supply for the City of Clovis:

March 5 and 7

RBC Capital Markets was consulted to provide a debt and capacity analysis for the City of Clovis as the city considered options for financing the proposed plans.

April 4

Jennifer Hill, P.E. and Amy Ewing, P.G. of Daniel B. Stephens & Associates presented the City of Clovis Recharge Overview. Recommendations and information from that presentation, which included recharge projects in New Mexico, was shared with the Water Policy Planning Team.

May 2

Playa Lakes Joint Venture hosted a half-day tour of area playas. They later presented to several members of the Water Policy Strategic Planning Team, the City of Clovis staff, and county and city leaders with restoration cost estimates for Clovis Playas. There was a wide-ranging conversation about the partnership's goals, which included prioritizing playas to restore and managing playas for recharge, wildlife, stormwater management, or water retention benefits.

May 9

A joint meeting of the Water Policy Advisory Committee and Public Works Committee was held to discuss and recommend the scope of work for Wastewater Treatment Plant enhancement.

May 16

Members of the Water Policy Advisory Committee, including Commissioner Clayton, toured New Mexico's first water purification and aquifer storage project. The City of Rio Rancho is replenishing the aquifer by putting reuse water back into the ground through a direct injection system. Information was gathered during the tour, and networks were established to assist Clovis in future possibilities related to sustainable water.

May 17

Members of the Water Policy Strategic Planning Team toured the paleochannel northwest of Clovis. Blake Prather led the tour, providing maps and data describing locations and estimated water production of approximately 70 wells.

B. Financing the Proposed Plan

The Water Policy Strategic Planning Team determined that financing the proposed plan would require considerable funding. The Team analyzed a variety of innovative financing options that sought to avoid placing additional responsibilities on local taxpayers. The following recommendations are submitted for your consideration:

1. Sell reuse water as a source of revenue to fund the completion of the Clovis Effluent Reuse Pipeline and to partially fund turning off wells presently in agricultural use to begin water banking.

2. Identify all possible funding sources in the City of Clovis budget that are dedicated to water or available to spend on purchasing water and redirect funds toward purchasing a water supply when and where feasible.
2. Apply for available grants for playa lake restoration. Use in-kind matching dollars generated from funds expended to complete the reuse project and to secure agricultural water wells for a future domestic water supply.
3. Continue to assist in efforts to acquire funding from the Bureau of Reclamation (BOR) to complete the Ute Reservoir Water Project.
4. Seek public-private partnerships when possible to provide a water supply to Clovis.

C. Presenting the Master Water Assurance Plan

The Water Policy Strategic Planning Team determined to present the City of Clovis Master Water Assurance Plan to key entities in the following order:

1. Water Policy Advisory Committee
 2. City of Clovis – City Commission
 3. Curry County – County Commission
 4. Eastern New Mexico Water Utility Authority (ENMWUA)
 5. State Engineer and New Mexico Environment Department
- [Presented to State Engineer via conference call on July 31, 2017.]

Throughout the approval process, which began in August 2017 with the initial presentation to the Water Policy Advisory Committee (WPAC), the Team remained responsive to all recommendations for changes to the Master Water Assurance Plan. Based on all recommendations received from the citizens of Clovis, the WPAC, and the City Commission, multiple revisions were made to the plan before the City Commission unanimously approved it on December 21, 2017.

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SANDRA TAYLOR-SAWYER

December 7, 2017

Dear City Commissioners,

Thank you for the opportunity to serve on the Water Policy Strategic Planning Team, which was commissioned by the Water Policy Advisory Committee to research, identify, and recommend effective strategies vital to securing a sustainable water supply for the City of Clovis for the next 40 years. Based on our extensive research, in-depth discussions, and professional consultations, we designed five action plans formulated over six months and then revised as needed to bring that goal to fruition. The specific results from the five designed action plans are as follows:

1. Reduce the City of Clovis groundwater usage from the Ogallala Aquifer by 37%, and create a revenue stream to secure water resources by completing the Clovis effluent reuse pipeline.
2. Aggressively pursue water conservation opportunities that grow and maintain the economic base of our community by securing available water resources to meet future water needs.
3. Recapture surface water for Ogallala Aquifer recharge through playa restorations.
4. Conserve water for long-term use through conservation easements and sustainable management practices.
5. Construct a delivery system that transports surface and groundwater to Eastern New Mexico Water Utility Authority (ENMWUA) members.

These plans work in tandem toward the sole purpose of securing a water supply for our community. Together, they establish the City of Clovis Master Water Assurance Plan. If these plans are implemented as designed, we believe they will ensure the City of Clovis and the surrounding area meet future water needs and thereby grow and maintain the economic base.

Respectfully submitted,

Ladona K. Clayton, City Commissioner & Chair
Daniel Baillet, Vice President/General Manager, EPCOR NM
Sandy Chancey, Executive Director, EPCOG
Larry Fry, Former City Manager
Gene Hendrick, CIDC
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CITY OF CLOVIS
MASTER WATER ASSURANCE PLAN CHART
Funding & Timeline Projections

PROJECT	FUNDING NEEDED	LAUNCH DATE	COMPLETED
<i>Action Plan #1</i> Effluent Water Reuse Project (City of Clovis)	<ul style="list-style-type: none"> • \$11 Million to complete (grant submitted to complete Phase IC) 	<ul style="list-style-type: none"> • In progress • City of Clovis has completed Phase IA & IB 	<ul style="list-style-type: none"> • July 2019 • 6 months
<i>Action Plan #2</i> Water Banking (converting AG wells to domestic wells)	<ul style="list-style-type: none"> • Perpetual lease of water • Estimated \$40-60M • Includes infrastructure 	<ul style="list-style-type: none"> • January 2018 	<ul style="list-style-type: none"> • September 2021
<i>Action Plan #3</i> Playa Lake Restoration	<ul style="list-style-type: none"> • \$3.5 Million provided through grant (matching dollars derived from water banking project) 	<ul style="list-style-type: none"> • February 2018 submit grant • Begin restoration July 2018 	<ul style="list-style-type: none"> • December 2021
<i>Action Plan #4</i> Conservation Land & Water Trust	<ul style="list-style-type: none"> • Stacking the Benefits (TBD) <ul style="list-style-type: none"> • Water-Surface-Air • Tax Credits • Enhanced land and water management area • In perpetuity 	<ul style="list-style-type: none"> • July 2017 	<ul style="list-style-type: none"> • December 2017
<i>Action Plan #5</i> Ute Water Pipeline Project (CAFB to Portales and Clovis)	<ul style="list-style-type: none"> • TBD 	<ul style="list-style-type: none"> • July 2019 	<ul style="list-style-type: none"> • July 2024 (1st pipeline)

ACTION PLAN #1: EFFLUENT WATER REUSE

Specific Result: *Reduce the City of Clovis groundwater usage from the Ogallala Aquifer by 37%, and create a revenue stream to secure water resources by completing the Clovis effluent reuse pipeline.*

1. Determine current reuse water available for distribution (estimated at 2.5MGD).
 - *Tangible Cost*
 - Data exists and is tracked daily.
 - *Tangible Benefit*
 - Provides reliable, current data regarding effluent reuse water availability.

2. Complete the construction of the Clovis effluent water reuse pipeline. Consider the following funding sources:
 - a. Water Trust Board
 - b. New Mexico Environment Department (NMED)
 - c. Bureau of Reclamation (BOR)
 - d. Environment Protection Agency (EPA)
 - e. Loans
 - *Tangible Cost*
 - Projected cost of \$10.8M to complete. City of Clovis presently has a Loan/Grant request of \$2.8M pending with the NM Water Trust Board (grant of \$1.52M, loan of \$380K, 20% match of 900K). An additional loan of \$7M from the Water Trust Board will be required to complete. Estimated present and projected debt service of \$614,673 annually @ 20 years.
 - *Tangible Benefit*
 - Reduces groundwater usage by 37%, conserves groundwater, and extends the life of the aquifer

3. Research and evaluate the ramifications of domestic well regulations.
 - *Tangible Cost*
 - Legal fees - \$185@hr. at approximately 50 hours = \$9,250
 - *Tangible Benefit*
 - Reduces groundwater usage, conserves groundwater, and extends the life of the aquifer

4. Investigate feasibility of reuse water for irrigation purposes when developing new residential subdivisions.
 - *Tangible Cost*
 - No tangible costs

- *Tangible Benefit*
 - Reduces groundwater usage if applicable
5. Conduct a rate analysis to determine price of reuse water to end-users based on current potable rates, the current potable rate as charged by EPCOR is \$6.68/kgal (city established rate @ \$2.34/kgal, 1/2 of potable rate of \$4.68 /kgal, November 2014).
- *Tangible Cost*
 - No tangible costs – data available and rate analysis in progress
 - *Tangible Benefit*
 - Creates a revenue stream [Commercial = annual net sales of \$511,945 to \$940,184, depending on rate of either 2.34/Kgal or \$3.30/Kgal (See Funding Source Addendum)]
6. Determine revenue available from sale of reuse water for debt service, operation, and maintenance.
- *Tangible Cost*
 - No tangible costs – data available and rate analysis in progress
 - *Tangible Benefit* (See revenue stream identified in Step #5)
 - Projected debt service of \$614,673
7. Begin sale of effluent reuse water (estimated usage by City of Clovis 1.2 MGD and usage by commercial users 0.35 MGD).
- *Tangible Cost*
 - No tangible costs – data available and rate analysis in progress
 - *Tangible Benefit*
 - Creates a revenue stream.
 - Commercial = annual gross sales of \$432,874, using \$3.30Kgal rate.
 - City of Clovis = annual gross sales of \$1,043,834, to using \$2.34Kgal rate.
 - City of Clovis = annual gross sales of \$1,472,074, using \$3.30Kgal rate. [City Commission will need to determine rate structure]
8. Work with Southwest Cheese on a mutually beneficial agreement to provide approximately 1.75 MGD of effluent water to treatment plant.
- *Tangible Cost*
 - Cost of processing water TBD. Offset by sale of effluent reuse water and possible payment from SWC to take wastewater.
 - *Tangible Benefit*
 - Possible net income as SWC pays City of Clovis to take their wastewater. Net income difference between processing and selling water.

9. Continue city stormwater management efforts to capture reuse water from municipal-owned playa lakes.

➤ *Tangible Cost*

- Currently in city budget

➤ *Tangible Benefit*

- Water conservation; reduces groundwater usage

GRAND TOTAL TANGIBLE COSTS: \$19.3M (20 yrs.)

- \$12,293,460 total debt
- \$7,000,000 total operating costs
- \$9,250 legal costs

GRAND TOTAL TANGIBLE BENEFITS: \$38.1M total revenue (20 yrs.)

[Total tangible benefits – total tangible costs = \$18.8M remaining revenue]

INTANGIBLE COSTS

- Volunteer or staff time to research or coordinate efforts to maximize effluent reuse water.
- Community concerns regarding reuse water.
- Communication efforts to ensure accurate information is disseminated throughout Clovis and the surrounding area.

INTANGIBLE BENEFITS

- City image improved
- Community perceived as a viable location for economic growth and development
- Water conservation efforts recognized at the state and national level

ACTION PLAN #2: WATER BANKING

Specific Result: *Aggressively pursue water conservation opportunities that grow and maintain the economic base of our community by securing available water resources to meet future water needs.*

1. Seek partnerships between the City of Clovis, Curry County, EPCOR, ENMWUA, the State of New Mexico, and the U.S. Government to ensure completion of water leasing and/or purchasing and pipeline projects.
 - Tangible Cost
 - Time investment
 - Tangible Benefit
 - Maximizes efficiency while cultivating a shared vision and effective partnerships that best serve the community.

2. Consider offers from water right owners to sell and/or lease water. Minimal criteria for such offers shall include:
 - a. A minimum certified pumping capacity from existing wells of approximately 11,000 gallons per minute, including water rights when converted from agricultural use of 3.0 acre feet to commercial use of 1.29 acre feet of approximately 12,000 commercial acre feet of water rights.
 - b. Wells must have an average certified saturated thickness of 35'.
 - c. Must be able to provide a 40-year water supply by pumping wells at approximately 20% of capacity or 2,200 gallons per minute or 3,500 acre feet.

Multiple water right owners may submit a combined offer to meet minimal pumping capacity criteria.

Water right owners must sign a certification as to well data, as required above in minimal criteria. Should the water right owners wells test lower than the certified pumping capacity, the offer will be reduced accordingly by total offer price divided by certified gallons per minute = cost per gallon X 150% X the reduced gallons per minute. If the average saturated thickness comes in 10% lower than the certified saturated thickness, the offer may be rejected in its entirety.

If offer is accepted, water right owners will be required to complete a land conservation plan that takes into consideration the conversion from irrigated acres

to either dryland farming operations or grasslands. The conservation plans must meet and be approved by governing state and federal agencies lessening any environmental impacts of conversion of land management practices, making sure the conservation plan falls within the highly erodible landact requirements.

3. Consider the following criteria:

- a. Cost per gallon per minute and cost per foot of average saturated thickness shall be calculated and preferences will be given as related to cost and other criteria as described below in b.-l.
- b. Location relative to existing or planned infrastructure (consideration for completion dates must be included in planned infrastructure). Costs of estimated infrastructure and easements to deliver water will be added to the offer determining total cost of proposed offer, which will be included in the cost-benefit analysis.
- c. Areas that have potential for greatest aquifer recharge as researched and documented by a hydrologist. Areas with greater recharge potential should receive a higher priority since they further reduce costs of future water supply and provide a sustainable water management strategy.
- d. Consider elevation of proposed well field or field's elevation relative to flow of water with the least resistance, friction loss, and pumping costs to deliver water.
- e. Review location of well field relative to currently used or planned water resources and how the proposed water banking of water will impact those wells.
- f. Location of water relative to competition of other well owners and/or water users pumping wells and shortening estimated life of proposed wells being considered for conversion to commercial wells.
- g. Water rights located near or contiguous with existing water rights owned by the City of Clovis or contiguous with other offers that are being considered. The minimum pumping capacity may be less than required in 2(a) provided the combined pumping capacity of all regionally located offers is equal or greater than 11,000 gallons per minute.
- h. Conservation opportunities through multiple state and federal agencies thereby reducing financial costs to local governments and entities, while increasing financial benefits to water right owners and lessening the burden on local tax and rate payers.
- i. Review demographics in area of water rights relative to opportunities to apply for USDA Grants/Loans, Department of Defense REPI Grants, Bureau of Reclamation Water SMART Grants, EPA Water Research Grants, and US Fish and Wildlife North American Wetlands Conservation Act (NAWCA) Grants.
- j. Quality of water equals or is better than drinking water standards.
- k. Areas that will have limited impact on the local economy and job base and tax base when taking agricultural water and converting to commercial use.

- I. Complete a cost-benefit analysis on all offers considering criteria and priorities in steps 2 and 3.
4. Advertise seeking a Request for Information from all interested parties who want to submit a formal proposal for the sale and/or lease of water.
 5. Appoint a Committee of five officials to review and/or negotiate all proposals and determine who shall be awarded contracts for the sale and/or lease of water: two from the City of Clovis Commission, one from Curry County Commission, one from the Eastern New Mexico Water Utility Authority, and one from EPCOR. The Clovis City Manager should also serve on said committee as a non-voting member.
 6. Secure and conserve water by turning off agricultural wells beginning June 1, 2018, and no later than October 1, 2018, depending on water right owner's preferences. Water right owners may return to pumping agricultural wells once testing has been completed, but must turn wells off by December 2018 if a contract is offered.
 - *Tangible Cost*
 - None
 - *Tangible Benefit*
 - Allows contracts to be determined based on verified well performance data.
 7. Use funds earmarked for water conservation as in-kind contributions for grants.
 - *Tangible Cost*
 - No tangible costs
 - *Tangible Benefit*
 - Generates in-kind contributions for grant requests
 8. Hire an independent contractor beginning May 1, 2018 to determine individual well performance and static water levels.
 - *Tangible Cost*
 - Need RFP. Initial cost analysis for a pump well test on the high end is \$7,750 per submersible pump well; \$10,950 per line shaft turbine pump well. 75% of wells submersible (\$410,750) + 25% of wells line shaft turbine (\$186,150) = \$596,900
 - *Tangible Benefit*
 - Creates a water supply, reduces groundwater usage, conserves groundwater, and extends the life of the aquifer
 9. Complete study on well performance and static water levels by December 2018.
 - Completion of study in Step #5. Costs and benefits are the same.
 10. Determine entities that will maintain ownership of the water.
 - *Tangible Cost*
 - Legal fees (to be determined)

➤ *Tangible Benefit*

- Owner of the water recovers investment and profits from resell of water

11. Identify potential funding sources for long-term water acquisition to meet future water needs by September 2018.

- a. City of Clovis
- b. Curry County
- c. EPCOR
- d. Members of the ENMWUA
- e. State and Federal government agencies

➤ *Tangible Cost*

- Time investment to contact funding entities to secure a loan.

➤ *Tangible Benefit*

- Secures a water supply

12. Negotiate final contracts with landowners, February 2019.

[Owner of the final water TBD. Decision is between City of Clovis, Curry County, ENMWUA, and EPCOR to determine who will own or lease the water from identified wells.]

➤ *Tangible Cost*

- Legal fees for contracts = \$50,000
- Final negotiations for water will be determined by the current and future owners based on the well performance data gathered in Steps 5 and 6. Estimated at \$40M-60M, including infrastructure. [Effluent reuse water may provide approximately \$750,000 annually]

➤ *Tangible Benefit*

- Creates a water supply, reduces groundwater usage, conserves groundwater, and extends the life of the aquifer

13. Begin process with NMED and OSE to convert wells from agricultural to municipal use.

➤ *Tangible Cost*

- Permit & engineering fees/drawings, along with GIS mapping; can be done in-house

➤ *Tangible Benefit*

- Water conservation; reduces groundwater usage

14. Explore connecting the pipeline from the secured water source to the ENMWUA interim pipeline or a distribution system.

➤ *Tangible Cost*

- Construction of 24" pipeline via EPCOR @ approximately \$15M-20M.

➤ *Tangible Benefit*

- Groundwater provided to end users as determined by pipeline construction

15. Continue to expand water resources to further develop a sustainable water supply.

GRAND TOTAL TANGIBLE COSTS: \$40M - \$60M

- Secures a water supply, reduces groundwater usage, conserves groundwater, and extends the life of the aquifer
- Final negotiations for water will be determined by the current and future owners based on the well performance data gathered in Steps 5 and 6. Estimated at \$40M-60M, including infrastructure. (For all steps in this plan, see Funding Source Addendum for possible funding ideas.)

GRAND TOTAL TANGIBLE BENEFITS:

- Water supply for current and future generations

INTANGIBLE COSTS

- Volunteer or staff time to research or coordinate efforts to turn off identified agricultural wells
- Agricultural farmers concerns regarding monetary exchange for turning off the wells
- Communication efforts to ensure accurate information is disseminated throughout Clovis and the surrounding area

INTANGIBLE BENEFITS

- City image improved
- Community perceived as a viable location for economic growth and development
- Water conservation efforts recognized at the state and national level

ACTION PLAN #3: PLAYA LAKE RESTORATION

Specific Result: *Recapture surface water for Ogallala Aquifer recharge through playa restorations outside of the city and in the county.*

1. Engage in joint partnership with Playa Lakes Joint Venture (PLJV), City of Clovis, Curry County, National Resource Conservation Service (NRCS), Farm Service Agency (FSA), landowners, Water & Land Trust, and others to restore playas for aquifer recharge.
 - a. Use water reuse and conservation projects as in-kind match for grants.
 - b. Apply annually for a \$1M North American Wetlands Conservation Act (NAWCA) grant to restore playas.
 - c. Apply with other government entities that have grants available for playa restorations.
 - d. Lobby Federal and State agencies for playa restoration projects in Eastern New Mexico.
 - *Tangible Cost*
 - NAWCA grant funds + existing in-kind contributions = \$0 additional costs
 - *Tangible Benefit*
 - All steps lead to recapturing surface water to recharge the Ogallala Aquifer and create a natural habitat for wildlife.

2. Study the restoration of initial, funded playa lake to begin the process of restoring multiple playa lakes.
 - *Tangible Cost*
 - No tangible costs to city. PLJV conducts the study.
 - *Tangible Benefit*
 - All steps lead to recapturing surface water to recharge the Ogallala Aquifer and create a natural habitat for wildlife.

3. Prioritize playas closest to current or future water supply in conjunction with conservation efforts.
 - *Tangible Cost*
 - No tangible costs to city. Strategic planning team will partner with PLJV to prioritize playas.
 - *Tangible Benefit*
 - All steps lead to recapturing surface water to recharge the Ogallala Aquifer and create a natural habitat for wildlife.

4. Maximize water run-off to playa lakes.
 - a. Plant more native grasses surrounding playas.
 - b. Convert irrigated farming to no-till dry land farming.
 - c. Divert water shed away from county roads into area playas.
 - *Tangible Cost*
 - FSA, USDA, NRCS, Game, Fish & Wildlife funding using conservation monies spent as existing in-kind match
 - County diverts run-off to water shed as a part of their Road Plan.
 - \$0 additional costs
 - *Tangible Benefit*
 - All steps lead to recapturing surface water to recharge the Ogallala Aquifer and create a natural habitat for wildlife.

5. Develop a land and water management plan to enhance surface water runoff into playas.
 - a. Work with NRCS and FSA to modify existing and future Conservation Reserve Program (CRP) contracts to allow for grazing and haying of CRP grasses.
 - b. Work with PLJV to lobby federal agencies to modify CRP contracts.
 - c. Ensure private property rights remain intact for landowners in restored playa areas.
 - *Tangible Cost*
 - \$12,000 lobbying
 - *Tangible Benefit*
 - All steps lead to recapturing surface water to recharge the Ogallala Aquifer and create a natural habitat for wildlife.

6. Begin playa restorations.
 - a. Remove sediment from prioritized playas.
 - b. Plant 3:1 grass buffer around each playa.
 - c. Remove pits in the center of the playas.
 - *Tangible Cost*
 - Annually awarded \$1M NAWCA grant + city in-kind match pays all costs.
 - \$0 additional costs
 - *Tangible Benefit*
 - All steps lead to recapturing surface water to recharge the Ogallala Aquifer and create a natural habitat for wildlife.

7. Track measurable data related to playa recharge.

➤ *Tangible Cost*

- PLJV will track measurable data as part of grant award.
- \$0 additional costs

➤ *Tangible Benefit*

- All steps lead to recapturing surface water to recharge the Ogallala Aquifer and create a natural habitat for wildlife.

8. Utilize and develop city-owned playas for stormwater management and possible aquifer recharge. [See Action Plan #1, Step #9]

GRAND TOTAL TANGIBLE COSTS: \$12,000 lobbying costs

- Uses in-kind contributions for grant requests

GRAND TOTAL TANGIBLE BENEFITS:

- Water supply for current and future generations

INTANGIBLE COSTS

- Volunteer or staff time to research or coordinate efforts to write NAWCA grant, track in-kind contributions, and prioritize playas
- Community concerns regarding playa restoration
- Communication efforts to ensure accurate information is disseminated throughout Clovis and the surrounding area regarding playa restoration efforts

INTANGIBLE BENEFITS

- City image improved
- Community perceived as a viable location for economic growth and development
- Water conservation efforts recognized at the state and national level
- Playa restoration creates natural habitat for wildlife

ACTION PLAN #4: CONSERVATION LAND & WATER TRUST

Specific Result: *Conserve water for long-term use through conservation easements and sustainable management practices.*

1. Engage in a collaborative effort with an existing land trust, the NM State Engineer, the Department of Energy, Minerals, and Natural Resources (EMNR), and the United States Department of Defense's Readiness and Environmental Protection Integration (REPI) program.
 - a. Develop an enhanced land and water management area and a regional conservation plan.
 - b. Develop a format for a local land and water conservation trust.
 - c. Launch a pilot project addressing a conservation easement focusing on playa restoration, water conservation, and sustainable land management practices.
 - *Tangible Cost*
 - Time and travel to collaborate with a land trust and state entities to conduct research
 - Travel costs = \$2,500
 - Work with PLJV to conduct pilot project.
 - *Tangible Benefit*
 - All steps lead to securing water for current and future generations.
 - Landowners will benefit directly from state and federal tax credits awarded for conservation efforts.

2. Establish a land and water conservation trust.
 - a. Seek partnerships with the City of Clovis, Curry County, EPCOR, USDA, ENMWUA, PLJV, and other partners who may assist in conservation efforts.
 - b. Research and develop multiple conservation incentives to stack various conservation benefits to landowners.
 - *Tangible Cost*
 - Legal cost to organize land and water conservation trust = \$20,000
 - *Tangible Benefit*
 - All steps lead to securing water for current and future generations.
 - Landowners will benefit directly from state and federal tax credits awarded for conservation efforts.

3. Investigate conservation easements on water, recognizing that water is real property.
 - a. Work with the chair of the EMNR Advisory Committee on Conservation Easement Tax Credits.

- b. Create water-banking strategies that utilize best financial practices.
- c. Purchase water conservation easements coupled with long-term perpetual water leasing options and/or contracts with groundwater monitoring agreements.
- d. Research potential tax credit incentives to enhance participation in conservation programs and provide financial incentives to landowners.
- e. Develop a format and strategy to sell available conservation easements and/or tax credits to private businesses and individuals.

➤ *Tangible Cost*

- Time and travel to collaborate with EMNR (See Step #1)
- Legal fees to complete work on conservation easements = \$30,000

➤ *Tangible Benefit*

- All steps lead to securing water for current and future generations.
- Landowners will benefit directly from state and federal tax credits awarded for conservation efforts.

4. Reduce conservation costs to the City of Clovis by exploring multiple government agencies and conservation programs that have the potential to provide financial incentives to landowners.

- a. Lobby the USDA and various interrelated agencies to expand their Conservation Collaboration Grant program to include New Mexico.
- b. Lobby the Water Trust Board and state legislators and agencies to revisit existing laws and regulations limiting the capacity of land and water trusts.

➤ *Tangible Cost*

- \$15,000 lobbying costs

➤ *Tangible Benefit*

- All steps lead to securing water for current and future generations.
- Landowners will benefit directly from state and federal tax credits awarded for conservation efforts.

5. Incentivize landowners to take land and water out of irrigated farming practices through benefits derived from federal and state tax credits.

- a. Work with landowners to develop transitional plans for moving from irrigated farm practices to alternative land management practices.
- b. Work with applicable state and federal government agencies to assist landowners in the transition process.

➤ *Tangible Cost*

- No tangible costs; federal and state tax credits awarded
- Time spent on developing transitional plans

➤ *Tangible Benefit*

- All steps lead to securing water for current and future generations.
- Landowners will benefit directly from state and federal tax credits awarded for conservation efforts.

6. Work with Curry County, New Mexico Environment Department, United States Department of Agriculture (USDA), Office of the State Engineer, and landowners to enhance surface water runoff to playa lakes to recharge the underlying Ogallala Aquifer.

- a. Develop strategies that will capture the greatest amount of surface water runoff in playa basins.
- b. Work with USDA to rethink management and uses of acres enrolled in Conservation Reserve Program (CRP), thereby enhancing surface water runoff.

➤ *Tangible Cost*

- Time and travel to collaborate with Curry County, state and federal agencies, and landowners
- Travel costs = \$3,000

➤ *Tangible Benefit*

- All steps lead to securing water for current and future generations.

GRAND TOTAL TANGIBLE COSTS: \$70,500

- Legal fees - \$50,000
- Travel - \$5,500
- Lobbying - \$15,000

GRAND TOTAL TANGIBLE BENEFITS:

- Water supply for current and future generations.
- Provide a revenue stream for agricultural producers to offset irrigated acres.
- Maintains the tax base to support local economy.

INTANGIBLE COSTS

- Volunteer or staff time to research or coordinate travel and meetings with state and federal legislators
- Landowner concerns regarding the establishment of conservation easements
- Communication efforts to properly educate the public and agricultural producers about the programs available through the Conservation Land and Water Trust.

INTANGIBLE BENEFITS

- City image improved
- Community perceived as a viable location for economic growth and development
- Water conservation efforts recognized at the state and national level

ACTION PLAN #5: UTE RESERVOIR WATER PROJECT

Specific Result: *Construct a delivery system that transports surface and groundwater to Eastern New Mexico Water Utility Authority (ENMWUA) members.*

1. Collaborate with other members of the ENMWUA to devise a comprehensive water policy, prioritizing resources that provide a short- and intermediate-term water supply.
 - a. Conservation and reuse
 - b. Groundwater
 - c. Playa restoration
 - d. Ute Reservoir
 - *Tangible Cost*
 - Time to collaborate with members of the ENMWUA toward a comprehensive water policy
 - *Tangible Benefit*
 - Collaborative efforts result in a focused, unified approach benefiting the city and all members of the ENMWUA
 - Clovis and other ENMWUA members work together to secure a long-term, sustainable water supply and a method to bridge the gap between today and the completion of the Ute Project.

2. Work with the ENMWUA to further develop the long-term water supply delivery system from the Ute Reservoir.
 - *Tangible Cost*
 - Time and travel to lobby for funding needed to complete the Ute Reservoir Project
 - Travel and lobbying costs = \$15,000
 - May be able to coordinate with other proposed plans so costs are reduced and efficiency and efforts are maximized
 - Consider timelines and funding levels relative to completion of the interim Ute pipeline when considering water proposals in Action Plan #2.
 - *Tangible Benefit*
 - Acquisition of needed funding to advance the Ute Reservoir Project and thereby create a long-term water supply delivery system

3. Support the ENMWUA's efforts to pursue state and federal funding for the Ute Reservoir Water Project.
 - *Tangible Cost*
 - May be able to coordinate with other proposed plans so costs are reduced and efficiency and efforts are maximized

➤ *Tangible Benefit*

- Acquisition of needed funding to advance the Ute Reservoir Project and thereby create a long-term water supply delivery system

4. Encourage the ENMWUA and its members to undertake an aggressive marketing and community awareness campaign regarding the development of sustainable water resources.

➤ *Tangible Cost*

- No tangible costs

➤ *Tangible Benefit*

- Very important intangible benefit comes from changing the narrative concerning the feasibility of the Ute Project.

GRAND TOTAL TANGIBLE COSTS: \$15,000 lobbying costs

- Uses in-kind contributions for grant requests

GRAND TOTAL TANGIBLE BENEFITS:

- Short, intermediate, and long-term water supply for current and future generations is secured

INTANGIBLE COSTS

- Volunteer or staff time to research or coordinate travel and meetings with state and federal legislators
- Communication efforts to ensure accurate information is disseminated throughout Clovis and the surrounding area regarding the Ute Reservoir

INTANGIBLE BENEFITS

- City image improved
- Community perceived as a viable location for economic growth and development
- Water conservation efforts recognized at the state and national level
- Change the narrative concerning the feasibility of the Ute Project.

IV. RECOMMENDATIONS

A. Communication is the Key

The Water Policy Strategic Planning Team believes that extensive efforts are required to adequately communicate the recommendations outlined in the Master Water Assurance Plan. Requesting and responding to community input regarding the plan will be vital to its success. Several communication methods will need to be utilized and open to the public as the Team presents the Master Water Assurance Plan to the Water Policy Advisory Committee and then the City Commission. Therefore, the Planning Team recommends the following actions:

1. Invite community members to attend at least one Town Hall in each of the four districts. Video each event to place on the City of Clovis website. Record and publish all questions posed and answers provided at the Town Hall meetings via the City of Clovis website.
2. Create and publish a brochure outlining the framework for the City of Clovis Master Water Assurance Plan. Use resources like the CIDC and Chamber to provide information on conservation and the progress of the plan.
3. Create a Frequently Asked Questions (FAQ) document and place it on the City of Clovis website.
4. Include in the EPCOR monthly water bill an insert providing basic information about the Master Water Assurance Plan and a link to the City of Clovis and EPCOR website to study the full proposal, along with the FAQ.
5. Advertise in the Eastern New Mexico News, electronic media, and billboards to increase awareness and support.
6. Establish a website to engage community members in discussions regarding the proposed water plan.
7. Feature City of Clovis conservation practices on the city website with a link included to access the EPCOR website.
8. Aggressively pursue change of management practices in land and water conservation by traveling to Washington to meet with the FSA/USDA to lobby for changes in Farm Programs that support water conservation.

- B. Ensure a safe, adequate, and stable water supply is available to meet the current and future needs of the community. Future economic development projects will be subjected to rigid review by the City Commission to determine the impact on the area water supply.
- C. The City of Clovis, Curry County, and the ENMWUA form a joint task force and work together to finance the Master Water Assurance Plan.
- D. Work with EPCOR on their independent study of indirect potable reuse (IPR) of effluent reuse water to determine technical and economic feasibility for future consideration. This recommendation comes at no cost to the city, as EPCOR will cover all expenses related to the study.
- E. Additional Opportunities to Secure Water as a Perishable Asset
 - 1. An anaerobic digester pilot project is currently underway to reduce the amount of groundwater usage by the dairy industry to flush parlors. We recommend that the Water Policy Advisory Committee and the City Commission track the progress of this project to determine its benefit to advancing the City's Master Water Assurance Plan. Replicating a large-scale digester at area dairies may be an initiative that the City of Clovis could promote and thereby advance water conservation efforts.

Currently, a private investor and the Clovis Industrial Development Corporation have invested \$15,000 in this promising pilot project. The action steps to complete this study are as follows:

ANAEROBIC DIGESTER PILOT PROJECT

Specific Result: To reduce the amount of groundwater usage by the dairy industry, extend the life of the Ogallala Aquifer, and maintain the economic base of the City of Clovis and Curry County.

- 1. Develop anaerobic digester project in partnership with a local dairy to reduce the amount of groundwater usage of dairies to flush parlors.
- 2. Install 3,000 GPD digester next to manure separator operated by a local dairy. [\$2,000 per month x 5 months = \$10,000 + \$5,000 initial investment]

3. Test daily the chemical content and methane gas production of the effluent reuse water processed by the digester.
4. Research feasibility of marketing methane gas and producing electricity from methane gas to operate dairies and sell into the electrical grid.
5. Gather and process the information from the tests to determine feasibility of creating a large-scale digester that can be replicated for use at a local dairy.
6. Share results of project with area dairies.

APPENDICES

- ❖ Appendix A: List of Research Materials
- ❖ Appendix B: Maps

APPENDIX A

LIST OF RESEARCH MATERIALS

BASELINE RESEARCH

1. Original questions posed by team, February 2017
2. City of Clovis Water Planning Policies, January 2017
3. City of Clovis Advancing Conservation Activities - Talking Points from State Engineer
4. Water Conservation Activities - Peter Nichols
5. City of Clovis Strategic Plan, 2002
6. City of Clovis 40-Year Water Development Plan, 2012
7. Northeast New Mexico Regional Water Plan Executive Summary, 2012
8. New Mexico Regional Water Plan Projects, Programs & Policies Lists May 2017 Discussion White Paper
9. ENMWUA Quarterly Workshop Presentation, March 2015
10. Source Water Protection Plan, EPCOG, 2016
11. Peter Nichols Goals, revised January 2017
12. "Thoughts on Water and Future Needs," 2017
13. Recommendations, Blake Prather, January 2017

FINANCIALS

14. Financial study on city funding dedicated to water
15. New Mexico GRT analysis to determine Clovis standing
16. RBC Capital Markets - Overview of Debt and Capacity Analysis, 3-7-17
17. RBC Capital Markets - Overview of Debt and Capacity Analysis, 4-5-17
18. ENMWUA Financial Analysis
19. Marquita D. Russel, Chief of Program, NMFA, information on loan through Public Project Revolving Fund (PPRF)

LEGAL

20. History of Ute Reservoir Water, 3-8-17
21. Joint Powers Agreement: Ute Reservoir Water Commission, 1995
22. First Amendment to Joint Powers Agreement: Ute Reservoir Water Commission, 3-9-06
23. Regulating domestic wells, 2006 opinion of the NM Court of Appeals
24. Law 62-8-2: Service requiring every public utility to furnish adequate, efficient, and reasonable service
25. The City of Clovis, New Mexico to New Mexico American Water Company, 1-25-1996
26. Ute Reservoir Water Contract, 11-18-2010
27. HB 15, Act creating ENMWUA, 2010
28. 2016 New Mexico Statutes, Chapter 73, Special Districts, Article 27, ENMWUA

29. City of Clovis Election resolution, Ordinance No. 1953-2011 – ¼ % GRT for funding the Ute Pipeline for 10 years

EFFLUENT WATER REUSE DATA

30. Bohannon Huston - Proposal for alternatives for expanded water reuse system in Clovis
31. Rio Rancho Pure: New Mexico's First Water Purification and Aquifer Storage Project (Brochure)
32. Projected cost of completing reuse project and the reuse water rate of \$2.34/kgal established in 2015
33. Anticipated customer usage by WTB funding (dated 11-12-14)
34. Estimated water usage of effluent water calculations

MAPS & BROCHURES

35. Probable Playas in Curry County, New Mexico – Playa Lakes Joint Venture
36. Informational brochures on playas and Ogallala Aquifer recharge
37. Clovis Playa Tour & Field Day, PLJV - 5-2-2017
38. City of Clovis Playas
39. Saturated Thickness Change 2004 – 2007 to 2010 - 2015, NM Bureau of Geology & Mineral Resources
40. Trinity Analysis, CAFB - Saturated Thickness of Southern High Plains Aquifer, 1962 to 2040
41. Trinity Analysis, CAFB - Water Table Decline, 1962 to 2011
42. 70-well paleochannel analysis with maps

OTHER DOCUMENTS (Analyzed during or after completion of the initial plan)

43. Appendix D - Water Law and Regional Water Planning - D.B. Stephens & Associates
44. Northeast New Mexico Regional Water Plan, September 2016
45. *Lifetime Projections for the High Plains Aquifer in east-central New Mexico* (G. Rawling & A. Rinehart, July 2017)
46. City of Portales - 2016 Water Conservation and Use Report
47. EPCOR Data, including conservation results
48. Storm Drain Improvements, Phase I, Master Storm Drainage Plan and Schedule of Improvements, July 1989
49. Curry County Citizens Water Log - People without water (J. Griego & A. Chavez, 2017)
50. Recharge presentation and proposal – Stacy Timmons
51. *A giant reservoir that supports a California county's drinking water is nearly empty.* Available from: https://www.washingtonpost.com/national/health-science/a-giant-reservoir-that-supplies-a-california-countys-drinking-water-is-nearly-empty/2016/11/13/cf617ef0-a29d-11e6-8d63-3e0a660f1f04_story.html?utm_term=.55f734913d9f [accessed Jul 2 2017]

52. *Ute study writer has no definitive opinion on update*. Available from: <http://www.cnjonline.com.php56-17.ord1-1.websitetestlink.com/2013/10/26/ute-study-writer-has-no-definitive-opinion-on-update/> [accessed May 10 2017].
53. *Recharge Rates and Chemistry Beneath the High Plains Aquifer—A Literature Review and Synthesis*. Available from: https://drive.google.com/file/d/0B_ue3oueePPDbTdqUW5wNnpUSDA/view [Accessed Mar 10 2017]
54. *Skepticism grows about Brownback, Colyer optimism on aquifer's future*. Available from: <http://cnjonline.com/news/state-government/local/2017-09-03/skepticism-grows-about-brownback-colyer-optimism-aquifer-s> [Accessed Sep 10 2017]