CITY OF CLOVIS

MASTER WATER ASSURANCE PLAN

Prepared & Submitted by
The Water Policy Strategic Planning Team

For the Consideration of
The Water Policy Advisory Committee

And Final Approval of
The Clovis City Commission

August 8, 2017

City of Clovis Water Policy Strategic Planning Team

- Daniel Bailet, Vice President of Business Development, EPCOR
- Sandy Chancey, Executive Director, Eastern Plains Council of Governments
- Ladona Clayton, City Commissioner & Chair
- Gene Hendricks, Clovis Industrial Development Corporation (CIDC)
- Mark Huerta, District Manager, EPCOR
- Larry Fry, Former City Manager, City of Clovis
- Tom Phelps, Interim City Manager, City of Clovis
- Blake Prather, Member-at-Large
- Robert Thornton, Curry County Commissioner

TABLE OF CONTENTS

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.

At the onset of the work, all members of the planning team carefully reviewed HB 15 to ensure their efforts were in keeping with the directive of the Eastern New Mexico Water Utility Authority (ENMWUA). The ENMWUA was "created coextensive with boundaries of Curry and Roosevelt counties and the territory physically occupied by the water facilities of the authority to plan, design, develop, purchase, acquire, own, operate, establish, construct, and maintain the eastern New Mexico rural water system pipelines and waterworks to supply water for domestic, commercial, non-irrigated agricultural and industrial purposes ***by any available means to persons within and without the boundaries of the authority***."

The team concluded that the ENMWUA was created for the benefit of its seven members, including the City of Clovis and Curry County, and proceeded to identify any available means to supply water to the citizens of Clovis.

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 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 approximately 70 wells 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.

3. 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 approximately 70 water wells for a future water supply.

4. Continue efforts to acquire funding from the Bureau of Reclamation (BOR) to complete the Ute Reservoir Water Project. Claim past funds expended on the Ute Reservoir Water Project as meeting our required 10% portion. Recommend the ENMWUA adopt this plan as part of their Regional Water Plan to increase their scoring when applying for funding from the Water Trust Board (WTB).

5. 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, beginning at the state level to ensure that the proposed plan had the approval and support of the State Engineer (OSE) and the New Mexico Environment Department (NMED). The OSE, NMED, City of Clovis, and the Water Policy Advisory Committee will be the only entities with the authority to determine if revisions are needed to the plan before

granting final approval. The Team stands ready to respond to all recommendations. The citizens of Clovis will be engaged throughout this process.

1. State Engineer and New Mexico Environment Department
2. Water Policy Advisory Committee
3. City of Clovis – City Commission
4. Curry County – County Commission
5. Eastern New Mexico Water Utility Authority (ENMWUA)
6. Members of ENMWUA

Interim City Manager
TOM M. PHELPS

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August 8, 2017

Dear Members of the Water Policy Advisory Committee,

Thank you for the opportunity to serve on the Water Policy Strategic Planning Team, which was commissioned 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 the past 6 months 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 Bailet, Vice President of Business Development, EPCOR
Sandy Chancey, Executive Director, EPCOG
Larry Fry, Former City Manager
Gene Hendricks, CIDC
Mark Huerta, District Manager, EPCOR
Tom Phelps, Interim City Manager
Blake Prather, Member-at-Large
Robert Thornton, Curry County Commissioner

CITY OF CLOVIS
MASTER WATER ASSURANCE PLAN CHART
July 2017

PROJECT	FUNDING NEEDED	LAUNCH DATE	COMPLETED
Action Plan #1 Effluent Water Reuse Project (City of Clovis) Study indirect potable reuse concept (EPCOR)	• $11 Million to complete (grant submitted to complete Phase II-1C)	• In progress • City of Clovis has completed Phase I	• July 2019 • 6 months
Action Plan #2 Paleochannel Water Banking (approximately 70 wells)	• $2.4 Million Y1 • Perpetual lease of water rights begins Y2 • Estimated $20-40M	• January 1, 2018	• January 2021
Action Plan #3 Playa Lake Restoration	• $3.5 Million provided through grant (matching dollars derived from water banking project)	• February 2018 submit grant • Begin restoration July 2018	• December 2021

Action Plan #4
Conservation Land & Water Trust
	• Stacking the Benefits (TBD)
	  • Water-Surface-Air
	  • Tax Credits
	  • Enhanced land and water management area
	• In perpetuity
		• July 2017	• December 2017

Action Plan #5 Ute Water Pipeline Project (CAFB to Portales and Clovis)	• TBD	• July 2019	• 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 2.5 MGD).

   - *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 $11M, projected to borrow $8.1M – 20 year/2% loan = $495,369 annually
   - *Tangible Benefit*
     - Reduces groundwater usage by 37%, conserves groundwater, and extends the life of the aquifer

3. Research municipal ordinances to control domestic well permitting.

   - *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 (city established rate @ $2.34/kgal, November 2014).

   - *Tangible Cost*
     - No tangible costs – data available and rate analysis in progress
   - *Tangible Benefit*
     - Creates a revenue stream [Commercial = annual gross sales of $308,208; City of Clovis = annual gross sales of $1,043,834. Total revenue = $1.347M a year]

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 $495,369 to pay debt service; $130,000 cost to operate and manage annually = $625,369 Total

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 $308,208
     - City of Clovis = annual gross sales of $1,043,834
     - Sales Total = $1.347M annually

8. Work with EPCOR to study direct/indirect injection of effluent reuse water.

   - *Tangible Cost*
     - No cost to city. EPCOR covering cost of study
   - *Tangible Benefit*
     - Possible aquifer recharge; water conservation extends the life of the aquifer.

9. 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.

10. 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: $9,250

- See benefits where costs were deducted from generated revenue, leaving only $9,250 of uncovered expense.

GRAND TOTAL TANGIBLE BENEFITS: $1.347M annual revenue

- $495,369 annual debt
- $130,000 operating costs
- $721,631 remaining annual 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: PALEOCHANNEL 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 with the City of Clovis, Curry County, EPCOR, and ENMWUA to ensure completion of the paleochannel and interim pipeline projects.

   - *Tangible Cost*
     - Time investment
   - *Tangible Benefit*
     - Maximizes efficiency while cultivating a shared vision and effective partnerships that best serve the community.

2. Conserve water by turning off 70 (+/-) agricultural wells by May 1, 2018, for one year. Entities to provide funding:

   a. City of Clovis
   b. Curry County
   c. ENMWUA

   - *Tangible Cost*
     - Projected cost of $2.5M for year one (use as in-kind match for playa restoration)
   - *Tangible Benefit*
     - Reduces groundwater usage, conserves groundwater, and extends the life of the aquifer

3. 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

4. Secure and shut off for testing approximately 70 identified wells in the paleochannel for a period of one year.

   - *Tangible Cost*
     - Projected cost of $2.5M for year one (use as in-kind match for playa restoration)
   - *Tangible Benefit*
     - Reduces groundwater usage, conserves groundwater, and extends the life of the aquifer

5. Hire an independent contractor beginning January 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

6. Complete study on well performance and static water levels by August 2018.

   - Completion of study in Step #5. Costs and benefits are the same.

7. Determine entities that will maintain ownership of the water.

   - *Tangible Cost*
     - No tangible costs
   - *Tangible Benefit*
     - Tangible benefit for owner of the water

8. Identify funding sources for long-term water acquisition to meet future water needs by June 2018.

   a. New Mexico Finance Authority – Loans & Grants
   b. New Mexico Environmental Dept. – Loans & Grants
   c. USDA, EPA, and Bureau of Reclamation Loans & Grants
   d. EPCOR
   e. Members of the ENMWUA

   - *Tangible Cost*
     - Time investment to contact funding entities to secure a loan.
   - *Tangible Benefit*
     - Secures a water supply

9. Negotiate final contracts with landowners in paleochannel, fall 2018.
   [Owner of the final water rights TBD. Decision is between ENMWUA, City of Clovis, and EPCOR to determine who will own or lease the water from these wells. County will not be a part of the final contracts to own or lease water rights.]

   - *Tangible Cost*
     - Legal fees for contracts = $50,000
     - Final negotiations for water rights will be determined by the current and future

owners based on the well performance data gathered in Steps 5 and 6. Estimated at $20-40M. [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

10. 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

11. Construct the paleochannel pipeline to connect with the ENMWUA interim pipeline.

    - *Tangible Cost*
      - Construction of 24" pipeline via EPCOR @ approximately $15M.
    - *Tangible Benefit*
      - Groundwater provided to ENMWUA members as determined by pipeline construction

GRAND TOTAL TANGIBLE COSTS: $38 - $58.1M

- Secures a water supply, reduces groundwater usage, conserves groundwater, and extends the life of the aquifer
- Final negotiations for water rights will be determined by the current and future owners based on the well performance data gathered in Steps 5 and 6. Estimated at $20-40M.

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.*

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 USDA 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.

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, and 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. Develop 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) 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 easement
- Communication efforts to properly educate the public and agricultural producers about the programs available through the Conservation and Land 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

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
    - *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. Recommend the ENMWUA follow the water policies of its membership.

   - *Tangible Cost*
     - No tangible costs
   - *Tangible Benefit*
     - 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.

5. 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*
     - Limited tangible benefits. Very important intangible benefits. Must change 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. Place a moratorium on future economic development projects that are water dependent industries until such time as determined by the City Commission that adequate water supplies are available to meet any expansion of the local economic base. The focus of the planning team is to preserve current economic bases.

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. Additional Opportunities to Secure Water as a Perishable Asset

1. There are some wells not being pumped in the paleochannel due to dry land farming. We recommend that the city consider securing these additional water rights to further the impact of water-banking and playa restoration efforts.

2. 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.

7. Recommend replicating large-scale digester at 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. ENMWUA Quarterly Workshop Presentation, March 2015
9. Source Water Protection Plan, EPCOG, 2016
10. Peter Nichols Goals, revised January 2017
11. "Thoughts on Water and Future Needs," 2017
12. Recommendations, Blake Prather, January 2017

FINANCIALS

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

LEGAL

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

EFFLUENT WATER REUSE DATA

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

MAPS & BROCHURES

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

OTHER DOCUMENTS

41. Appendix D - Water Law and Regional Water Planning - D.B. Stephens & Associates
42. Lifetime Projections for the High Plains Aquifer in east-central New Mexico (G. Rawling & A. Rinehart, July 2017)
43. City of Portales - 2016 Water Conservation and Use Report
44. EPCOR Data, including conservation results
45. Storm Drain Improvements, Phase I, Master Storm Drainage Plan and Schedule of Improvements, July 1989
46. Curry County Citizens Water Log - People without water
47. Recharge presentation and proposal – Stacy Timmons

Estimated Water Usage of Effluent Water

	Maximum Weekly Demand Gallons	Annual Demand Thousand Gallons	Annual Acre Feet
City of Clovis			
Clovis Landfill	245,000	6,529	20.03
Rierson Park	288,000	7,675	23.54
Hillcrest Golf Course	5,586,034	148,868	456.65
Hillcrest Park	172,800	4,605	14.13
AYSO Fields	427,680	11,398	34.96
Jim Hill Park	73,872	1,969	6.04
Dickenson Park	49,248	1,312	4.02
Guy Leeder Baseball Fields	722,304	19,249	59.05
Bell Park	91,987	2,451	7.52
City Park	71,820	1,914	5.87
Greene Acres Park	684,000	18,229	55.92
Dennis Chavez Park	741,312	19,756	60.60
Robbie Pierce Complex	158,400	4,221	12.95
Bob Spencer Complex	1,926,144	51,332	157.46
Colonial Golf Course	5,500,000	146,575	449.62
Sub-Total	16,738,601	446,083	1368.35
Other Effluent Water Users			
Yucca Middle School	413,952	11,032	33.84
County Fairgrounds	245,000	6,529	20.03
Tree Farm	90,000	2,399	7.36
Parkview Elementary	179,004	4,770	14.63
Marshall Middle School	295,680	7,880	24.17
James Bickley Elementary	251,408	6,700	20.55
Clovis High School	496,496	13,232	40.59
Cameo Elementary	74,844	1,995	6.12
Gattis Middle School	642,454	17,121	52.52
Sandia Elementary School	76,230	2,032	6.23
Mike Harris Ball Field	1,444,608	38,499	118.10
Clovis School Girls Field Softball Field	77,616	2,068	6.34
Barry Elementary School	160,877	4,287	13.15
Clovis Freshman Academy	413,952	11,032	33.84
Sub-Total	4,862,121	129,576	397.47
Total	21,600,722	575,659	1765.83

Reuse Water Sales

	Rate	Average Daily Thousand Gallons	Annual Demand Thousand Gallons	Total Water Reuse Sales
City of Clovis Usage	$ 2.34	1,222.15	446,083	$ 1,043,834.22
Other Water Users	$ 2.34	355.98	129,576	$ 303,207.84
Total		1,578.12	575,659	$ 1,347,042.06

The $2.34 rate per thousand was determined by the April 16, 2015, City Commision meeting as recommended at a rate of 50% of the EPCOR 2012 potable rate of $4.6711 per 1,000 gallon.

City of Clovis Usage	$ 3.34	1,222.15	446,083	$ 1,489,917.22
Other Water Users	$ 3.34	355.98	129,576	$ 432,783.84
Total		1,578.12	575,659	$ 1,922,701.06

A $1.00 per thousand increase would increase gross revenues by $ 575,659.00

The 2016 average rate EPCOR charged was $6.68 per Thousand; 50% = $3.34/K

The wells owned by the City of Clovis, currently used to water city property, would be available to sell water to EPCOR, further increasing potable water availability.

EPCOR WATER PRODUCTION	2013	2014	2015	2016	Average
as provided 8/05/17 From EPCOR WATER					
Annual Total Gallons (Thousands)	1,887,326	1,722,802	1,807,824	1,901,104	1,829,764
Annual Acre Feet	5791.99	5287.09	5548.01	5834.27	5,615
EPCOR WATER SALES					
as taken From Financials filed with the NM Public Regulation Commission					
Annual Total Gallons (Thousands)		1,620,523	1,513,092	1,650,194	1,594,603
Annual Acre Feet		4,970.93	4,641.39	5,061.94	4,891

Average Water Production is 235,161,000 gallons or 15% higher than sales
The 2016 EPCOR Financials shows 14,298 Residential and 1,629 Commercial Customers, totaling 15,927 Customers
The 2016 Average Gross Revenue / Thousand was $6.68/K used

REUSE WATER PRODUCTION

Current discharge to the City of Clovis wastewater treatment plant of 2.5 Million Gallons daily or 2,799 acre feet per year.

Proposed completion of reuse water system and distribution of reuse water of 1.6 Million Gallons daily or 1,765 acre feet per year.

Excess wastewater for further distribution of 900 thousand gallons daily or 1,034 acre feet per year.

The reuse water will reduce the demand for groundwater to between 3,100 and 3,900 acre feet annually not including further expansion of 1,034 acre feet of excess reuse water to other businesses, subdivisions, and government owned properties.

CURRENT WELL PRODUCTION	Number of Wells	Gallons Per Minute	Average Daily Gallons X 000	Annual Gallons X 000	Annual Acre Feet
Current EPCOR Wells	73	7,915	11,398	4,160,124	12,761.12
J.L.Wall Wells	10	960	1,382	504,576	1,547.78
Paleo Channel Wells	70	11,950	17,208	6,280,920	19,266.63
****Total Ground Water Available**	**153**	**20,825**	**29,988**	**10,945,620**	**33,575.52**

**** Does not include wells owned by the City currently used for parks, golf course, and ball fields that will be available after reuse water system is completed.**

SUMMARY OF WATER AVAILABLE IN THE PALEO CHANNEL

Number of Landowners	10
Combined Total Acres of Landowners	10,290
Combined Irrigated Acres of Landowners	7,705
Total Number of Wells	70
Estimated Avg. Saturated Thickness	40
Estimated Well Production, Gallons / Minute all Landowners	11,950
Annual Gallons Available all Landowners	6,280,920,000
Annual Acre Feet Available all Landowners	19,267

Agricultural Water Rights @ 3 Acre Ft.	30,870
Domestic and Commercial Water Rights @ 1.29 Acre Ft.	13,274
Loss of Water Rights in Acre Ft. converting from Agricultural Use to Non-Ag Use	17,596
Gallons to pump annually @ 20% Capacity	1,256,184,000
** Acre ft. to pump annually @ 20% Capacity	3,853

** Current water needs for the City of Clovis are estimated to require approximately 5,600 acre feet of water annually. The completion of the water reuse system will reduce ground water demands by approximately 1,750 acre feet leaving a remaining need of 3,850 acre feet. Pumping the wells in the paleochannel at 20% capacity will meet future water needs. Considering current agricultural pumping levels, maps prepared by NM Tech indicate approximately 10 years of water remaining in the paleochannel, reducing that pumping rate to 20% of capacity should extend the water supply in the paleochannel to beyond 40 years. The additional conservation measures being implemented in the water plan (playa restorations, conservation easements, etc.) combined with existing wells of EPCOR Water and the City of Clovis should extend the water supply of the City of Clovis beyond 60 years.