FIFTH JUDICIAL DISTRICT
COUNTY OF CHAVES
STATE OF NEW MEXICO

STATE OF NEW MEXICO, *ex rel*.
State Engineer and
PECOS VALLEY ARTESIAN
CONSERVANCY DISTRICT,

Plaintiffs,

vs.

L.T. LEWIS, *et al.*, and
UNITED STATES OF AMERICA,

Defendants.

and

STATE OF NEW MEXICO, *ex rel*.
State Engineer and PECOS VALLEY
ARTESIAN CONSERVANCY DISTRICT

Plaintiffs,

vs.

HAGERMAN CANAL CO., *et al.,*

Defendants.

Nos. 20294 and 22600
Consolidated

Honorable James J. Wechsler
Presiding Judge

Gallinas River Section,
Pecos River Section and
Upper Pecos Underground
Water Basin Subsection

City of Las Vegas
Proceeding on Remand

CV-WB-0001-000061
Subfile Nos. 14.1, *et al*
CV-WA-006-000093
Subfile Nos. 8.39-8.45

SPECIAL MASTER'S REPORT CONCERNING EQUITABLE REMEDY TO BE AWARDED THE CITY OF LAS VEGAS FOLLOWING REVERSAL OF THE PUEBLO RIGHTS DOCTRINE

In *Cartwright v. Public Service Co. of New Mexico*, 1958-NMSC-134, 66 N.M. 64, 342 P. 2d 654, the Supreme Court held that the pueblo water rights doctrine exists in New Mexico and that the City of Las Vegas had a pueblo water right. Forty-six years later, the Supreme Court reversed *Cartwright* after concluding that the pueblo rights

doctrine is not consistent with the law of prior appropriation. *Martinez v. City of Las Vegas*, 2004-NMSC-009, 135 N.M. 375, 89 P. 3d 47.

When reversing *Cartwright*, the Supreme Court held that the City of Las Vegas (the "City") should be protected against "the potentially harsh consequences" of the abrogation its pueblo water right by an award of an equitable remedy. *Martinez* at ¶ 63. The Supreme Court then remanded this proceeding to this Court "to determine the specific aspects of the equitable remedy that would strike an appropriate balance between the reliance interests of the City, the reliance interests of other water users, and the regulatory interests of the State Engineer." *Martinez* at ¶69.

I conducted two evidentiary hearings and a site visit to acquire the evidence I believed was necessary to make an informed recommendation about what equitable remedy, if any, this Court should award the City. This Report sets forth my recommendation and the findings of fact and conclusions of law on which my recommendation is based.

I. Procedural History

A. Introduction

1. The Supreme Court filed its Amended Mandate on June 14, 2004. For a number of reasons, the parties raised a variety of procedural issues that had to be addressed before the substantive issues could be resolved on their merits. The following is a short synopsis of the significant procedural rulings by the Court and the Special Master that had a material impact on the course of this proceeding.

B. Procedural Litigation Concerning Notice to Other Water Users

2. Shortly after the Supreme Court filed its Amended Mandate, the City filed a claim (the "2004 Claim") describing the equitable remedy it sought in this proceeding:

> The City claims, on the basis of reliance on decisions in the Cartwright litigation, as recognized by the Supreme Court, that it owns, with the priority of 1835, a right to divert and use the surface waters of the Gallinas River in the amount of 1200 acre feet per annum, and claims that this amount can be used as necessary to fill and refill its municipal reservoirs, for municipal purposes within and without the city limits, over and above any rights previously decreed to the City

Statement of City of Las Vegas Water Claim, filed October 12, 2004.

3. On July 12, 2005, the State of New Mexico (the "State") and the City filed a joint motion (the "Joint Motion") requesting that the Court enter a proposed consent order that would award the City the equitable remedy described in the 2004 Claim, subject to the right of other water users to object during *inter se* proceedings. *Joint Motion by the State of New Mexico and the City of Las Vegas for Expedited Entry of Consent Order*, filed July 12, 2005.

4. Following protracted procedural litigation, I submitted a report recommending that the Court not consider the State's and the City's proposed consent order until other water users in the Gallinas had been given notice of this proceeding and an opportunity to object. *Special Master's Finding of Fact and Conclusions of Law Concerning (A) Proposed Consent Order Between the State of New Mexico and the City of Las Vegas and (B) Procedure for Providing Notice to Gallinas Water Users*, filed March 15, 2006.

5. The Court denied the Joint Motion and remanded this proceeding to the Special Master for recommendations concerning the appropriate procedure for providing notice to other water users. *Order Denying Motions for Approval of Proposed Consent Order Between the City of Las Vegas and the State of New Mexico,* filed June 2, 2006;

Order Remanding this Matter to the Special Master with Direction to Reconsider the Method of Notice to Affected Parties, filed June 2, 2006.

6. On February 16, 2007, the Court ordered that all water rights claimants in the Gallinas River Section and the Upper Pecos Underground Water Basin be provided with notice of the opportunity to participate in this proceeding. *Order Adopting Procedure for Providing Notice of Proceeding to Determine City of Las Vegas' Equitable Remedy,* filed February 16, 2007. In compliance with that order, the City served all known and unknown water rights claimants in the Gallinas River Section and the Upper Pecos Underground Water Basin with notice of the deadline for intervening in this proceeding by first class mail and by publication. *See Certificate of Service of Notice of Proceedings to Determine City of Las Vegas' Equitable Remedy*, filed May 25, 2007, *Affidavit of Publication in Albuquerque Journal*, filed June 1, 2007, *Affidavit of Publication in Santa Fe New Mexican*, filed June 6, 2007 and *Affidavit of Publication in Las Vegas Daily Optic*, filed June 18, 2007.

C. Parties to Remand Proceeding

7. A number of persons filed motions to intervene, some before and others after the City served notice of this proceeding on all Gallinas water users. The City and the State contested many, but not all, of the motions to intervene. None of the contested motions were denied. Some of the parties who intervened subsequently withdrew or were dismissed. At the time of the filing of this Report, the following persons, in addition to the City and the State of New Mexico, are parties to this proceeding. [1]

[1] The persons who intervened but were subsequently dismissed as parties are Grzelachowski Ditch, see *Order Granting Motion of Grzelachowki Ditch to Withdraw from Remand Proceeding*, filed April 4, 2011; *Default Judgment Dismissing with Prejudice the Objection of the Nuestra Senora de Los Dolores Ditch to*

Storrie Project Water User's Association, (the "Storrie Project"). *Order Granting Motions for Intervention of Certain Acequias and Storrie Project Water Users Association*, filed September 24, 2004 and October 4, 2004.

The Gallinas Canal Acequias Association, f/k/a Gallinas Canal and Water Storage and Irrigation Company, (the "Gallinas Canal"). *Order Granting Motion for Intervention of Gallinas Canal Company,* filed January 5, 2005.

Ten acequias that are members of the Rio Gallinas Acequia Association, namely Placita Arriba Ditch, Upper Maestas Ditch, El Porvenir Ditch (a/k/a Acequia del Rito de San Jose), Agapito Vigil Ditch, Acequia Madre de Los Vigiles, Grzelachowski Ditch, Acequias Madre de Los Romeros, Nuestra Senora de Los Dolores Ditch, Acequia Madre de Las Vegas, Round House Ditch, San Augustin Community Ditch and La Concepcion Ditch. *Order Granting Motions for Intervention of Certain Acequias and Storrie Project* filed September 24, 2004 and October 4, 2004. Two of those acequias—Grzelachowski Ditch and Nuestra Senora de Los Dolores Ditch-- were subsequently dismissed from this proceeding. For brevity, I will refer to the ten acequias as the "Rio Gallinas Acequias".

The United States of America on behalf of the United States Fish and Wildlife Service (the "United States"). *Order Granting United States' Motion to Intervene, June 2, 2006.*

El Ancon del Gato Acequia ("El Ancon Acequia"). *Special Master's Order Granting in Part the Motion to Intervene filed by El Ancon Del Gato Acequia Association,* filed February 19, 2008.

Henry Singleton. *Special Master's Procedural Order Granting Motion to Intervene Filed by Henry Singleton* filed February 25, 2008. Mr. Singleton's company--Singleton Properties LLC--was dismissed from this proceeding by Order filed April 27, 2011. Technically Mr. Singleton remains a party but he never appeared in this proceeding after his company was dismissed as a party.

Michael and Patricia Padilla. *Special Master's Procedural Order Granting Motion to Intervene Filed by Michal R. and Patricia Padilla*, filed February 25, 2008.

D. The Standing of the Acequias and the Storrie Project

8. The City and the State filed motions challenging the standing of the Acequias and the Storrie Project to represent their members. *City of Las Vegas' Motion to Deny Standing of Acequias, El Ancon Del Gato and Storrie Project to Represent the*

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the Equitable Remedy Sought by the City of Las Vegas, filed April 4, 2011; *Order of Withdrawal from Proceedings on Remand* filed April 27, 2011 for Singleton Properties LLC.

Interests of Their Members, filed October 25, 2007; *Motion to Dismiss Storrie Project Water Users Association to the Las Vegas Remand Matter*, filed by the State of New Mexico on October 24, 2007; *Motion to Dismiss Acequias as Parties to the Las Vegas Remand Matter,* filed by the State of New Mexico on October 24, 2007.

9. I ruled that the Acequias and the Storrie Project had standing but I did not file a Special Master's report. *Special Master's Opinion and Procedural Order Concerning the Standing of the Acequias and the Storrie Project Water Users Association*, filed February 19, 2008. At the request of the City, I subsequently explained why I did not file a report. When doing so, I reminded the parties they were always free to seek redress from the Court if they questioned one of my rulings. *Special Master's Order Clarifying that Standing Order Does Not Constitute "Special Master's Report*," filed March 7, 2008.

E. Stay of Proceedings: Provisional Sharing Agreement

10. At the joint request of the City and the Rio Gallinas Acequias, this proceeding was tolled for 21 months to provide that parties with an opportunity to negotiate a settlement. As part of their settlement efforts, the City and the Rio Gallinas Acequias entered into a temporary written agreement to share water during the 2009 irrigation season pursuant to a specified rotation schedule (the "Provisional Sharing Agreement"). The City and the Acequias hoped that the experience gained from the implementation of the Provisional Water Sharing Agreement would facilitate the negotiation of a final water sharing agreement settling the City's equitable remedy claim. Ultimately, the negotiations failed and the prosecution of the City's claim resumed. *See* Findings of Fact ¶¶ 62, 63. *Order Tolling Discovery and Setting Further Scheduling*

Conference filed December 5, 2008; *Special Master's Order Denying Request for Extension of Time to File Notice of Memorandum of Understanding*, filed August 23, 2010; *Special Master's Amended Case Management Order*, filed September 13, 2010.

F. City's Amended Equitable Remedy Claim

11. After entering into a settlement agreement with the United States and the Storrie Project regarding their objections to the 2004 Reliance Claim, the City amended its equitable remedy claim as follows:

> The City claims, on the basis of the City's reliance on the decisions in the Cartwright litigation as recognized by the Supreme Court, that it owns with a priority of 1835, a right to divert and use the surface waters of the Gallinas River in the amount of 1200 acre feet per annum and claims that this amount can be used as necessary to fill and refill its municipal reservoirs for municipal purposes within and without the city limits, which 1200 acre feet per annum amount is within and part of the 2,600 acre feet per annum of appropriative rights previously adjudicated to the City in the October 20, 1977 Judgment and Decree. The October 12, 2004 Statement of City of Las Vegas Water Claim stated the City's claim as 1200 acre feet per annum, with the priority of 1835, "over and above any rights previously decreed to the City". By this Amended Statement of Claim on Remand the City deletes the phrase "over and above any rights previously decreed to the City" and limits its claim on remand to adjudication of a priority of 1835 for 1200 acre feet per annum of the 2600 acre feet per annum previously adjudicated as the City's Appropriative Rights.

City of Las Vegas' Amended Statement of Claim on Remand, filed October 13, 2009.

12. The Rio Gallinas Acequias and Ancon del Gato filed objections to the Amended Remand Claim. *Acequias' Objection to City of Las Vegas' Amended Statement of Claim on Remand*, filed on November 11, 2009; *Ancon Del Gato Acequia's Objection to City of Las Vegas' Amended Statement of Claim on Remand*, filed November 23, 2009.[2] The United States and the Storrie Project filed responses to the Amended

[2] Singleton Properties LLC also filed an objection but it was subsequently dismissed from this proceeding. See Objection to City of Las Vegas' Amended Statement of Claim, filed November 13, 2009; Order of dismissal filed April 27, 2011.

Remand Claim stating that they did not object to the entry of a decree recognizing the claim. *United States' Response to City of Las Vegas' Amended Statement of Claim on Remand*, served January 21 2010[3]; *Storrie Project Water Users Association Response to City of Las Vegas' Amended Statement of Claim on Remand*, filed December 18, 2009.

G. Rio Gallinas Acequias Proposed Remedy

13. In addition to objecting to the City's Proposed Remedy, the Rio Gallinas Acequias proposed an alternative remedy. They proposed that the Court:

> [e]stablish a flow-sharing or rotation schedule between the City and the senior (pre-1881 priority) downstream water rights owners in which the City would divert a large quantity of its annual right in the non-irrigation season and would have the opportunity to place water in storage at that time. During the reminder of the year, the City's diversions for the Gallinas River would be limited by a strict sharing scheduling.

Acequias' Substituted Suggested Alternative Remedy, filed November 5, 2009 at ¶ 1; (marked Exhibit A-1 at trial); *Motion to Substitute and Strike Document Filed November 5, 2009*, filed November 13, 2009. The Acequias are the pre-1881 diverters referred to in their suggested alternative remedy (the "Acequias' Proposed Remedy").

14. The Remedy proposed by the Rio Gallinas Acequias is an eight page document that (a) sets forth the principles they contend should be used to govern the sharing of water and (b) a specific rotation schedule that would allow the City to divert water during irrigation season for limited amounts of time despite the earlier priority of the water rights of the members of the Rio Gallinas Acequias. The rotation schedule is identical to the one contained in the Provisional Sharing Agreement. Findings of Fact ¶ 62.

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[3] The United State's response was apparently never filed with the Court.

E. The City's Proposed Mitigation Payment

15. Following a five-day evidentiary hearing (the "First Hearing") concerning the City's and the Rio Gallinas Acequias' proposed remedies, I expressed my concern about the sufficiency of the evidence related to possible means for minimizing the impact of the City's remedy on the Acequias. *Order to Show Cause Why Special Master Should Not Retain Court Appointed Expert Witness and Take Additional Testimony Concerning City of Las Vegas' Reliance Claim*, filed June 13, 2014. After considering the parties suggestions, I ordered that the City and the Rio Gallinas Acequias file written statements setting forth their respective positions on how the reliance interests of the Rio Gallinas Acequias should be protected if the Court awarded the City its proposed remedy. *Transcript of Proceedings of July 18 Hearing on Order to Show Cause Why Special Master Should Not Retain Court Appointed Expert and Take Additional Testimony Concerning City of Las Vegas Reliance Claim,* filed August 4, 2014; *Special Master's Order Following Hearing on Show Cause Order Concerning Court Appointed Expert Witness and Additional Testimony Pertaining to City of Las Vegas' Reliance Claim*, filed July 31, 2014; *Special Master's Scheduling Order: August 19, 2014 Scheduling Conference*, filed August 25, 2014.

16. On September 22, 2014, the City filed a written statement that alleged:

> The reliance interests of the parties would be equitably balanced and the adverse impacts to the Acequias from granting the City's Amended Reliance Claim would be minimized by the City's payment to the Acequias of the fair market value of the average annual reduction in the amount of water the Acequias could deliver to their members' farm headgates. This payment could then be used to leverage grant money currently available from several funding sources to implement improvements to the Acequias' infrastructure, which would substantially reduce, if not largely eliminate any adverse impact from the reduction in supply.

City of Las Vegas' Mitigation Statement filed September 22, 2014, a copy of which is marked Exhibit 71.

17. Shortly thereafter, the City filed a Supplemental Mitigation Statement that specified the amount of the payment it contended was sufficient to protect the reliance interests of the Rio Gallinas Acequias. In that statement, the City alleged:

> [t]he average annual reduction in the amount of water the Acequias could deliver to their members' farm headgates from granting the Amended Reliance Claim, based on the adjudicated Project Diversion Requirement of 3.08 acres feet per acre, is 200 acre feet… The payment which would constitute fair compensation to the Acequias, as determined by the certified real estate appraiser retained by the City, is $1,000,000.00. This compensation amount consists of (1) $270,000.00 which is the current fair market value of the average 200 acre feet annual reduction in the amount of water the Acequias could deliver to their members' farm headgates from granting the City's Reliance Claim, plus (2) $729,000.00, which is the fair market value of the change in priority date of 1,200 acre feet per year from 1881 to 1835. The appraiser has rounded up the total of these two amounts, or $999,000.00 to $1,000,000.00.

City of Las Vegas' Supplemental Mitigation Statement, filed November 20, 2014, Trial Exhibit 72.

18, In their mitigation statement, the Rio Gallinas Acequias alleged:

> The City's Proposed Alternative Remedy should be denied as the Acequias cannot be adequately protected from the detrimental impacts of the City's claim of 1200 acre feet with an 1835 priority and money will not resolve the water needs of the Acequias. Even improving the infrastructure would not be an adequate remedy for the Acequias if there is no water available by the City taking 1200 acre feet in times of need and the remainder of the 2600 feet at other times, as this would leave the Acequias without any water or any recourse to salvage their water needs during those periods of water shortage. The appropriate remedy is for the adjudication to proceed and the City of Las Vegas receive its water as all other appropriators pursuant to the New Mexico Constitution and administration of the waters by the New Mexico State Engineer though his statutory authority.
> …
> …
> The City of Las Vegas's Proposed Alternative Remedy of an 1835 priority date for 1200 acre feet of water of their 2600 acre foot diversion rights should be denied in its entirety as it is not an appropriate remedy as mandated in

> Remand…..The proposed remedy is not fair and equitable to the acequias as ordered by the New Mexico Supreme Court.

Rio Gallinas Acequia Association's Statement Regarding the Martinez Remand Proposed Remedy filed September 22, 2014.

19. I conducted another hearing on April 21-25, 2015 (the "Second Hearing") for the limited purpose of determining whether a satisfactory means exists for minimizing the detrimental impact of the City's proposed remedy on the Rio Gallinas and El Ancon Acequias. *Special Master's Order Setting Evidentiary Hearing and Prehearing Conference*, filed February 20, 2015.

F. Site Visit

20. At the joint request of the parties, I conducted a site visit of the City's diversions facilities and the ditches of some of the Rio Gallinas Acequias on April 14, 2016.

II. Findings of Fact

A. Definitions

1. For clarity, in the remainder of this report, the term:

> "The Acequias" refers to the ten Rio Gallinas Acequias that are parties to this proceeding, see Procedural History ¶ 7, and the El Ancon del Gato Acequia
>
> "The Acequias Proposed Remedy" refers to the Acequias' proposal that the City and the Acequias share water pursuant to the rotation schedule set forth in the document entitled "Acequias Substituted Suggested Alternative Remedy", which is attached to the Acequias Motion to Substitute and Strike Document Filed November 5, 2009, filed November 13 2009 and marked Exhibit A-1 at the evidentiary hearings.
>
> "The City's Proposed Remedy" refers to the equitable remedy described in the City's Amended Claim requesting that the Court subdivide the City's existing 2,600 acre foot per annum municipal right with an 1881 priority into two rights: (a) a 1200 acre foot appropriative right with an 1835

priority and (b) a 1400 acre foot appropriative right with an 1881 priority, marked Exhibit 1 at the evidentiary hearings.

"The Members" refers to the owners of pre-1881 priority water rights that divert water from one of the Acequias. The term "Members" does not refer to the owners of post 1881 priority water rights that divert water from one of the Acequias. See Finding of Fact ¶ 18.

"The Mitigation Payment" refers to the $1,000,000 payment the City proposes to make as set forth in its Mitigation Statement and its Supplemental Mitigation Statement, marked Exhibits 71 and 72 at the evidentiary hearings.

B. The City's Municipal Water System

2. The City of Las Vegas is a community of approximately 18,000 residences situated on the eastern plains of New Mexico adjacent to the eastern foothills of the Sangre de Cristo Mountains. Ex. 25, p. 6-4; Tr. 341:10-18

3. The City owns and operates its own municipal water supply system. The City provides water to residential, commercial and industrial customers. In 2010, the City's water system had approximately 18,400 customers. Ex. 25, p 3-3.

4. The City purchased its water system from Public Service Company of New Mexico ("PNM") in 1982. PNM acquired the water system in 1957 as the result of a merger between the Federal Light and Traction Company and PNM's predecessor, New Mexico Power Company. New Mexico Power Company owned and operated the system between 1930 and 1957. Ex. 25 at p. 3-7.

5. The City's water system obtains almost ninety percent of its water from the Gallinas River. The Gallinas River rises in the Sangre de Cristo Mountains east of Las Vegas, and is feed by mountain snowpack and replenished by intermittent rainfall. Ex. 25, p. 3-8 to 3-9.

6. The flow of the Gallinas varies appreciably from year to year and within any particular year. Typically, the flow is at its height during spring runoff, as the winter snowpack melts. The flow of the Gallinas recedes as the snow pack melts, unless replenished by rain. By late summer or early fall, the flow may reduce to a trickle but could increase substantially as a result of the monsoon rains that frequently occur in August or September. Ex. 25, p. 3-8 to 3-9. Tr. 263-12 to 264:14.

7. The City diverts water from the Gallinas River by means of a diversion dam located on the river upstream of Montezuma, New Mexico. The diverted water is transported by pipeline through a pre-sedimentation basin, to one of the City's two water storage reservoirs—Peterson Reservoir and Bradner Reservoir. The City also stores water in Storrie Lake. Water is transmitted from the City's reservoirs to Storrie Lake via a pipeline and transported back to the reservoirs when needed using the same pipeline. Tr. 118:16 to 119:3; 119:20-25; Ex. 25, pp. 3-4 to 3-8.

8. When the flow of the Gallinas is low, the City may not be able to divert enough water to meet its existing demand for water. Thus when the flow of the Gallinas is high, the City must divert more water than needed to satisfy the current demand for water so that it can store the excess water in its reservoirs for future use. If in a particular year, the snowpack is low or the river is not replenished by the monsoons, the City's storage may decline precipitously. Tr. 200:5-14: 263:12 to 264:14.

9. Adequate water storage is a critical determinate of the reliability of the City's municipal water system. Storage water provides emergency reserves during droughts. Storage water also provides emergency reserves should the quality of the

stream flow be compromised by a forest fire, mudslide or other reason. Tr. 353:11 to 354: 17; 357:7-13; Ex. 25, pp. 2-2 to 2-4.

10. The City owns groundwater reserves it can use when its reservoirs are low. However, as discussed below, its groundwater reserves are not sufficient in the event of a prolonged drought. Ex. 25, p. 3-4; Ex. Tr. 116:2-12; 199:23 to 200:4.

11. Bradner Reservoir is the City's largest reservoir. It has a storage capacity of 294 acre-feet. The City's second reservoir-- Peterson Reservoir-- has a storage capacity of 211 acre-feet. Although the City also stores water at Storrie Lake, it does not own storage rights but rather leases storage from the owners of the Storrie Project. The City's water storage lease with the Storrie Project expired in 2010. Ex. 25, p. 3-5. At the time of the December 16-21, 2013 hearing, the City had renewed the lease on a year-by-year basis.

12. At the time of the December 16-21, 2013 hearing, the City was evaluating the feasibility of enlarging Bradner Reservoir. Enlargement of Peterson is not feasible because of water seepage attributable geologic conditions underlying the reservoir. Ex. 25, p. 5-3; Tr. 281:19 to 284:15.

B. The City's Water Rights

13. The City's surface water rights in the Gallinas River were originally adjudicated in 1933 by the United States District Court for the District of New Mexico in the so-called Hope Decree. *United States of America v. Hope Community Ditch*, No. 712 Equity (May 8, 1933). The Hope Decree adjudicated the City's predecessor in interest-- the New Mexico Power Company--a 2,600 acre-feet per annum, January 1, 1881 priority, surface water right in the Gallinas River for domestic, industrial, irrigation and other

purposes. Hope Decree, Volume I at p. 157. In 1997, this Court re-adjudicated the City's surface water rights in the Gallinas River without changing any of the elements of its Hope Decree Right. *Judgment and Decree Re City of Las Vegas' Appropriative Water Rights Claims*, filed on October 20, 1997. In 2011, this Court amended its 1997 Judgment and Decree to correct a clerical mistake. *Amended Judgment and Decree Re City of Las Vegas' Appropriative Water Rights Claims,* filed March 1, 2011. In the remainder of this report, I will refer to the City's 2,600 acre-feet, 1881 priority, surface water right as the "City's Appropriative Right".

14. In addition to its Appropriative Right, the City owns approximately 200 acre-feet of surface water rights in the Gallinas River that it purchased and then change from irrigation to municipal use. Of these 200 acre-feet, 174 acre-feet have a pre-1881 priority and 35 acre feet have a post 1907 priority. Tr. 391:19-23; Ex. 25 ap. 3-16, Ex. 34 at p. 21. In the remainder of this report, I will refer to the City's Appropriative Right and its other Gallinas surface water rights as its "Surface Rights"

15. In addition to its Surface Rights, the City owns groundwater rights in the Gallinas Creek and the Agua Zarca Basins. The City's right to pump groundwater is limited to an annual diversion amount of 1,569.52 acre feet and to an annual depletion amount of 1,209.52 acre feet, whichever is less. *Amended Judgment and Decree Re City of Las Vegas' Appropriative Water Rights Claims*, filed March 1, 2011. The points of diversion for the City's groundwater rights are wells located in the so-called Taylor Well Field.

16. The wells in the Taylor Well Field have not been as productive as originally anticipated, and the City is not able to produce anything close its adjudicated

annual diversion amount. Between 1950 and 1982 the wells produced, on cumulative basis, only 130 acre-feet of water per year. In 1983, the wells were shut down because of poor production and water quality problems. After *Martinez* was decided, the City rehabilitated two wells and used the water produced from those wells to supplement its surface supply when the flow of the Gallinas was low. The static water level of the wells in the Taylor Well Field dropped precipitously in 2011, which adversely impacted the wells' ability to produce water. The static water level raises when the wells are shut off and drops when they are put in production. To maintain the wells' productivity, the City only uses the wells as a backup source of water in droughts and other emergencies. Tr. 133:23 to 136:9; Tr. 199:23 to 200:4; Tr. 203 : 3-15; Tr. 206: 6-17; Ex. 25 p. 3-10.

C. The Water Rights of the Acequias' Members

17. The Acequias divert water from the Gallinas River on behalf of their Members. Three of the Acequias are located north of the City, upstream of the City's point of diversion. Three are located south of the City, downstream of the City's wastewater treatment plant. The other Acequias are distributed along the banks of the river as it meanders though the City. Ex. 47, pp. 1-3;

18. Although the Acequias divert water from the Gallinas, their Members own the water rights. The priority of the Members water rights varies by Acequia. At the hearings, the parties assumed that the priority of the Members' water rights all postdated 1835 and predated 1881. However, the Court's records reveal that not all Members own pre-1881 priority water rights. Specifically, the Court records reveal:

Acequia	Priority of Pre-1881 Subfiles	No. Subfiles With Pre-1881 Priority	No. Subfiles With Post 1881 Priority	Irrigated Acreage Pre-1881 Subfiles
Acequia Madre de Las Vegas	1848	20	0	86.56
Acequia Madre de Los Romeros	1848	71	1	210.45
Acequia Madre de Los Vigiles	1848	42	0	181.51
Ancon del Gato Ditch	1871	12	0	64.8
El Porvenir Ditch	1872	8	0	34
La Concepcion Ditch	1868	4	0	34.1
Placita Arriba Ditch	1872	13	0	46.22
Round House Ditch	1850	11	4	92.81
San Augustine Ditch	1841	38	0	73.14
Upper Maestas Ditch	1872	9	1	16.3
Vigil Ditch	1848	4	0	13.88
Irrigated Acreage All Pre-1881 Subfiles				853.77

19. In the Gallinas, the farm delivery requirement (a/k/a the duty of water) for one irrigated acre is two acre feet of water per year, and the consumptive irrigation requirement for one irrigated acre is one acre foot of water per year. Cumulatively, the Acequias' Members own approximately 854 acres that are irrigated with pre-1881 priority water rights.

20. The amount of water an Acequia can divert depends on the Acequia's project diversion requirement ("PDR"). The PDR, in turn, is dependent on the water conveyance efficiency of the Acequia's ditch. The more inefficient the ditch, the more water the Acequia needs to divert to be able to deliver the adjudicated amounts of water to its Members. The PDR of a ditch is computed by use of the following formula:

> PDR = No. of acre feet of water per adjudicated acre, divided by off-farm conveyance efficiency factor

21. At the time of the First Hearing, the Court had not yet adjudicated the Acequias' PDR but the parties stipulated that the Acequias PDR ranged between 3.3 acre feet per irrigated acre per year (predicated on a 60% Acequia off-farm conveyance efficiency) and 2.8 acre feet per irrigated acre per year (predicated on a 70% Acequia off-farm conveyance efficiency).

22. Prior to the Second Hearing, the Court adjudicated each Acequia a PDR of 3.077, predicated on an off-farm conveyance efficiency factor of 65%. *Order on Project Delivery Requirements,* filed April 21, 2014; Trial Ex. 76.

D. Diversions of Water by PNM at the Time of *Cartwright*

23. The City called Mr. Mustafa Chudnoff as an expert witness to offer opinion testimony concerning the amount of water the City's predecessor—PNM—diverted from the Gallinas at the time the *Cartwright* litigation. Mr. Chudnoff is a hydrologist who holds a master's degree in water resource planning. He has over thirty years experience in hydrology, hydrogeology, water resources planning and development, water rights administration, surface water modeling and groundwater modeling. Ex. 35. The Acequias stipulated to Mr. Chudnoff's qualifications to provide expert testimony in the forgoing areas. Tr. 343:16-22.

24. PNM did not maintain records of the amount of water it diverted from the Gallinas. Records were not maintained until 1983, the year after PNM transferred the municipal water system to the City. Based on PNM's records of the amount of treated water sold to PNM's customers, Mr. Chudnoff estimated PNM's annual diversions from the Gallinas between 1951 and 1954. He then compared PNM's diversions to the water available for diversion by calculating the flow of the Gallinas immediately upstream of

the City's point of diversion. The results of his calculations are set forth in Tables 1 and 2 of his expert report (Exhibit 34) and are summarized below:

Year	Annual Flow of the Gallinas Upstream of City's Diversion (acre feet per year)	PNM's Annual Diversions (acre feet per year)
1951	4,292	3,283
1952	9,768	4,331
1953	2,722	2,722
1954	2,199	2,199

Ex. 34 at p. 11, data consolidated from Tables 1 and 2.

25. As can be seen from the forgoing table, in 1951, 1952 and 1953, PNM diverted (on behalf of the City) substantially more water than the City's 2,600 acre foot Appropriative Right. In 1954, the flow if the Gallinas was less than the City's 2,600 acre-foot Appropriative Right. In that year, the City diverted the entire flow of the Gallinas.

26. Mr. Chudnoff also calculated the City's out of priority diversions during irrigation season between 1951 and 1954. Out of priority diversions occurred whenever the City diverted water at times when the remaining flow of the Gallinas was not sufficient to deliver the Acequias their full quota of water. Ex. 34, p. 10.[4] Not all diversions by the City during irrigation season were out of priority. When the flow of the Gallinas was sufficiently high, the City could divert water without reducing the remaining flow to the extent that not enough remained to satisfy the full supply irrigation requirements of the Acequias. Ex. 34, pp. 10-12.

4. In his report, Mr. Chudnoff refers to the City's out of priority diversions as Prior and Paramount Diversions. His report states that such diversions "occurred whenever the City took water out of the river during irrigation season before the irrigation requirements of downstream irrigators with water rights priorities senior to 1881 were satisfied." Ex. 34 at p. 10.

27. The City's our of priority diversions (or as Mr. Chudnoff referred to them in his report, the City's Prior and Paramount Diversions) in irrigation season (i.e. April thru October) and for the entire year between 1951 and 1954, as calculated by Mr. Chudnoff, were:

Year	April (acre feet)	May (acre feet)	June (acre feet)	July (acre feet)	August (acre feet)	September (acre feet)	October (acre feet)	Entire Year (acre feet)
1951	403	458	135	536	0	217	43	1,955
1952	0	0	0	261	387	238	43	1,120
1953	212	357	258	193	275	129	43	1,567
1954	324	317	99	199	242	99	43	1,501

Ex. 34, Table 3; Tr. 358:4 to 360:12; As can be seen from the foregoing table, in all four years, the City diverted substantial amounts of water that it would not have been able to divert had priorities been enforced.

28. The *Cartwright* litigation commenced in 1955. Mr. Chudnoff did not have sufficient data to calculate the City's out of priority diversions in that year. However, he was able to determine that the City diverted 3,189 acre-feet in 1955, which is 589 acre-feet in excess of its Appropriative Right. Tr. 373:11 to 376: 22; Ex. 34, p.p. 12-14.

29. Although counsel for the Acequias cross-examined Mr. Chudnoff, the Acequias did not offer any evidence to refute his testimony. Mr. Chudnoff's testimony was clear, logical and persuasive. Accordingly I find that prior to the Cartwright decision, PNM—the City's predecessor--diverted from the Gallinas River whatever amounts of water it needed for municipal purposes without regard to the rights of prior appropriators.

D. The City's Reliance on *Cartwright*

1. Diversions of Water by the City During the *Cartwright* Years

30. Mr. Chudnoff calculated the City's annual diversions of water from the Gallinas River between 1956 and 2004, the years that *Cartwright* was in effect. The results of his calculations are as follows:

City of Las Vegas Annual River Diversions (1956-2004)

Year	River Flow (afy)	Annual Diversion (afy)		Year	River Flow (afy)	Annual Diversion (afy)
1956	1,152	[5]		1980	9,346	2,630
1957	21,227	2,548		1981	8,621	2,160
1958	34,050	3,046		1982	no data	no data
1959	9,128	3,366		1983	17,097	3,106
1960	18,474	3,549		1984	9,273	3,758
1961	27,819	3,519		1985	26,733	3,324
1962	10,215	3,909		1986	12,316	3,282
1963	6,535	3,392		1987	26,791	3,123
1964	4,622	2,913		1988	15,938	3,373
1965	10,432	3,481		1989	8,838	3,387
1966	10,360	3,871		1990	15,431	3,535
1967	9,563	2,335		1991	43,468	4,436
1968	11,229	2,520		1992	15,793	3,505
1969	15,793	2,476		1993	14,272	4,191
1970	9,563	2,601		1994	24,414	3,989
1971	6,766	2,442		1995	15,648	3,910
1972	15,503	2,702		1996	11,736	3,518
1973	36,078	2,790		1997	35,281	3,477
1974	4,347	2,474		1998	22,313	3,680
1975	12,750	2,930		1999	15,576	3,255
1976	4,796	2,440		2000	6,006	2,959
1977	4,752	2,270		2001	11,954	3,082
1978	6,216	2,820		2002	3,195	2,355
1979	27,167	2,940		2003	4,492	3,842
				2004	19,198	2,917

Ex. 34, Table 6; Tr. 373:11 to Tr. 378: 14. The Acequias did not offer any contrary evidence.

[5] Demand exceeded river flow; shortfall made up by groundwater and storage.

31. Based on Mr. Chudnoff's calculation, I find that in thirty-seven of the forty-eight years that *Cartwright* was in effect the City diverted substantially more water than the 2,600 acre feet allowed by its Appropriative Right.

32. Mr. Chudnoff also calculated the City's out of priority diversions during the years 1975 to 2004. He did not have enough data to make the calculation for the years prior to 1975. The results of his calculations are as follows:

City of Las Vegas Out of Priority Diversions
1975-2004

Year	River Flow (afy)	Out of Priority Diversions (afy)	Year	River Flow (afy)	Out of Priority Diversions (afy)
1975	12,750	299	1990	15,431	350
1976	4,796	937	1991	43,468	317
1977	4,752	1,043	1992	15,793	279
1978	6,216	1,639	1993	14,272	336
1979	27,167	113	1994	24,414	307
1980	9,346	517	1995	15,648	260
1981	8,621	1,233	1996	11,736	863
1982	9490	1,625	1997	35,281	0
1983	17,097	809	1998	22,313	228
1984	9,237	1,026	1999	15,576	0
1985	26,733	0	2000	6,006	583
1986	12,319	220	2001	11,954	604
1987	25,791	330	2002	3,195	1,254
1988	15,938	0	2003	4,492	886
1989	8,838	570	2004	19,198	474

Exhibit 34, Table 7: Tr. 378:15 to Tr. 384:12. The Acequias did not offer any contrary evidence.

33. Based on Mr. Chudnoff's calculations, I find that the City, during twenty-six of the twenty-nine years between 1975 and 2004, diverted water whenever it needed it without regard to the rights of prior appropriators.

2. The City's Assumptions Concerning the Need for Additional Surface Water Rights During the Cartwright Years

34. In 1957, 1962, and 1964, PNM retained an engineering consulting firm to evaluate and make recommendations concerning necessary improvements to the City's municipal water system. The consultant concluded that, because *Cartwright* had confirmed that the City had a paramount right to the entire flow of the Gallinas, the City had sufficient water to meet its projected future demand for water, except in times of an extended drought. The consultant recommended that the City protect against the risk of an extended drought by increasing its water storage capacity and by developing its groundwater reserves. Ex. 29, p 2-3, p. 7, p. 12-13, p. 28; Ex. 30, cover letter dated February 15, 1962, p. 3-4, p. 17-18; Ex 31, pp. 2; Ex 34, pp. 28-29.

35. The City purchased its municipal water system from PNM in 1982. When deciding whether to purchase the system, the City retained a consultant to assess the reliability of the system and necessary improvements to the system. When making its assessment, the consultant presumed, based on *Cartwright*, that the City had a prior and paramount right to the entire flow of the Gallinas River. Tr. 158: 20-25; Tr. 161: 16-19; Tr. 163 to Tr. 165:20; Tr. 179 : 18 to Tr. 180: 9

3. Lost Opportunities to Acquire Senior Surface Water Rights

36. While *Cartwright* was in effect, the City did not seek out opportunities to purchase senior priority Gallinas water rights. It had no reason to do so given its paramount pueblo water right. For the same reason, the City did not take advantage of unique opportunities to acquire senior priority Gallinas water rights that arose during the *Cartwright* years. Specifically:

> The City made no effort to acquire the water rights appurtenant to thirty acres of land that were dedicated to the City for parks, streets and alleys. Ex. 34, p. 32; Tr. 459: 24 to Tr. 460:23

> The City made no effort to retain the water rights appurtenant to twenty-three acres of irrigated land it conveyed to the West Las Vegas School System. Ex. 34, p. 32: Tr. 462: 3-13.
>
> The City agreed to provide municipal water service to 415 acres of subdivided land without requiring that the subdividers transfer the senior irrigation water rights appurtenant to those lands to the City. Ex. 34, p. 33; Tr. 463: Tr. 464: 3.

37. In 2003, legislation was adopted that prohibited the State Engineer from approving a change in the place or purpose of use of a water right owned by a member of an acequia unless the commissioners of the acequia consented to the change. NMSA 73-3-4.1; NMSA 72-5-24.1 (1978). Certain Acequias have refused to consent to a transfer or have conditioned their consent on an agreement by the City not to divert water during irrigation season. Tr.: 470: 15 to Tr: 471: 9; Ex. 34, p. 34.

38. Opportunities for the City to purchase senior Gallinas irrigation rights have diminished over the years. In 1933, according to the Hope Decree, over 1800 irrigated acres of pre-1881 water rights existed in the Gallinas River. Today, for a variety of reasons, only 860 acres of pre-1881 irrigation water rights remain in the Gallinas. Ex. 34 at p. 31; Ex. 60; Tr. 184: 2 to Tr. 188: 18..

39. In 2009, legislation was adopted in New Mexico that prohibits municipalities from condemning water rights owned or served by acequias formed before July 1, 2009. NMSA 1978, Section 3-27-2. For that reason, the City is unable to acquire water rights with a pre-1881 priority by exercising its power of eminent domain. Ex. 34 at p. 34.

4. Reliance on Cartwright

40. Based on the foregoing evidence, I find that the City (and its predecessor PNM) relied on *Cartwright* to its determent. Specifically:

During the years *Cartwright* was the law, the City exercised its pueblo water right by diverting water from the Gallinas in whatever amounts and at whatever times it needed without regard to rights of other Gallinas appropriators.

The City relied on *Cartwright* by not affirmatively seeking out or taking advantage of opportunities to purchase or otherwise acquire pre-1881 Gallinas water rights.

The City relied to its determent on Cartwright because opportunities that once existed to acquire senior water rights no longer exist.

E. The Gallinas Operating Model

41. The City called two expert witnesses—Mr. Chudnoff and Mr. William Miller—to provide opinion testimony quantifying (a) the impact on the City of the loss of its pueblo water right, (b) the impact of the Proposed Remedy on the City, and (c) the impact of the Proposed Remedy on the Acequias. To provide a basis for this testimony, Mr. Chudnoff constructed a river operations model of the Gallinas River. A river operations model is a computer simulation that predicts what particular inflows and outflows of a river would be, assuming that the other inflows and outflows corresponded to the historical record. Mr. Chudnoff referred to his model as the "Gallinas Operating Model". A river operations model is a generally accepted method for analyzing the impact of changes in water flows on municipal water systems. Ex. 34, p. 17.

42. The Gallinas Operating Model simulated the operations of the Gallinas River system using an array of data inputs. The data inputs included (a) the historical daily flow of the Gallinas for a range of years, (b) the capacity of the City's diversion structure and transmission pipelines, (c) the storage capacity of the City's reservoirs, reservoir evaporation and seepage, (d) the monthly full supply water requirements of the Acequias, (e) the City's monthly municipal demand for water and (d) the extent and priority of the City's water rights. Ex. 34, p. 15.

43. Mr. Miller calculated two key variables as inputs for the model: the full supply irrigation requirements of the Acequias and (b) the amount of flow that must bypass the City's point of diversion (referred to as "bypass flow") if the Acequias are to receive their adjudicated amounts of water. Because of river gains and losses, the required amount of bypass flow is not equivalent to the Acequias' full supply irrigation requirements. Some portion of the bypass flow will be lost to evaporation and seepage. The bypass flow may be augmented by irrigation return flow and seepage as it moves downstream toward the Acequias' headgates. Tr. 546:9 to 557:11

44. A key determinant of the Acequias' full supply irrigation requirements and the required amount of bypass flow is the Acequias' PDR. As stated previously, because the Acequias' PDR had not been adjudicated at the time of the First Hearing, the parties stipulated that all required calculations should be based on the PDR claimed by the Acequias and the PDR claimed by the City. Prior to the Second Hearing, the Court determined that the Acequias PDR is 3.077 and the adjudicated PDR was used for the evidentiary calculations at the Second Hearing.

45. Mr. Chudnoff's and Mr. Miller's testimony concerning the Gallinas Operating Model and the inputs on which it is based was clear, logical and convincing. Although the Acequias' counsel called an expert witness at the Second Hearing who questioned the reliability of the Gallinas Operating Model, that witness's testimony was not credible and I give it absolutely no weight. Findings of Fact ¶¶ 76-78. Accordingly, I find that the Gallinas Operating Model is a scientifically valid and reliable means of estimating how specified changes in inflows and outflows to the Gallinas River would

impact the river's other inflows and outflows. *See State v. Tollardo,* 2003 NMCA 122, 134 N.M. 430.

F. Impact of the City's loss of its Pueblo Water Right on the Reliability of the City's Municipal Water Supply

46. Mr. Chudnoff used the Gallinas Operating Model to quantify the impact of the City's loss of its pueblo water right on the City's ability to maintain sufficient reserves of water in storage in its reservoirs. Mr. Chudnoff quantified the impact under four scenarios:

> Existing Storage—Higher Downstream Demand (i.e. the PDR claimed by the Acequias)
>
> Existing Storage-Lower Downstream Demand (i.e. the PDR claimed by the City)
>
> Improved Storage-Higher Downstream Demand (i.e. the PDR claimed by the Acequias)
>
> Improved Storage—Lower Downstream Demand (i.e. the PDR claimed by the City)

47. Mr. Chudnoff testified that, if priorities were enforced in the Gallinas and if the City's diversions of water were limited to its adjudicated and permitted water rights, the City would be able to store the following quantities of water:

Storage Configurations	Days Reservoirs Empty (1951-1960)		Days Reservoirs Below Benchmark (1951-1960)		Average Annual Days In Reserve	
	City PDR	Acequia PDR	City PDR	Acequia PDR	City PDR	Acequia PDR
Existing Storage	511	644	1,849	1993	109	101
Improved Storage	377	505	2,922	2,899	210	228

Ex. 34, Table 12, p. 25, "No Reliance Right" scenarios only. The model's calculations are based on the assumption that the daily flow of the Gallinas mirrored the historical daily flow between 1951 and 1960.

48. The middle columns in the forgoing table assess the sufficiency of the City's water storage reservoirs by reference to a benchmark. The City's benchmark for its existing storage configuration is the number of days the storage level is less than 70% of capacity. If the City expands its storage capacity, a new benchmark will be established. It will be the number of days the City has less than one year's supply of water in storage. Ex 34, pp. 25-26; Tr. 431:7-19; Tr. 389:3 to Tr. 398:13.

49. Mr. Chudnoff's testimony, based on the Gallinas Operating Model simulations, reveals that the amount of water the City can store to protect against a drought or other emergency has been severely compromised by the City's loss if its pueblo water right. Although the Acequias cross-examined Mr. Chudnoff, they did not present any evidence to contradict his testimony concerning the impact of the City's loss of its pueblo water right on its ability to store water. Mr. Chudnoff's testimony was clear, logical and consistent. According I find the reliability of the City's municipal water supply system has been significantly compromised by the reversal of the pueblo rights doctrine.

G. Impact of the City's Proposed Remedy on the City's Ability to Store Water

50. Mr. Chudnoff also used the Gallinas Operations Model to evaluate the impact of the City's Proposed Remedy on the City's ability to store water. The model evaluated the City's storage capacity under the same four scenarios used for evaluating the impact of the loss of the pueblo water right on the City's ability to store water.

51. Mr. Chudnoff testified that, according to the Gallinas Operating Model, the impact of an award of the City's Proposed Remedy on the City's ability to store water would be as follows:

Existing Storage: No Remedy vs. City's Proposed Remedy	Days Empty (1951-1960)		Days Below Benchmark (1951-1960)		Average Annual Days In Reserve	
	City's PDR	Acequias' PDR	City's PDR	Acequias' PDR	City's PDR	Acequias' PDR
No Remedy	511	644	1,849	1993	109	101
City's Proposed Remedy	128	117	640	626	149	150

Improved Storage: No Remedy vs. City's Proposed Remedy	Days Empty (1951-1960)		Days Below Benchmark (1951-1960)		Average Annual Days In Reserve	
	City's PDR	Acequias' PDR	City's PDR	Acequias' PDR	City's PDR	Acequias PDR
No Remedy	377	505	2,922	2,899	210	228
City's Proposed Remedy	0	0	1,576	1,615	368	365

Ex. 34, Table 12.

52. As can be seen from the foregoing tables, the Gallinas Operations Model predicts that the amount of water in storage will improve significantly if the City is able to divert water in accord with its proposed remedy.

53. In a written report, the City's water planning consultants emphasize the particular importance of the City having adequate storage reserves given that the City's groundwater reserves are only sufficient to replace its surface supplies for short periods of time. The consultants recommend that the City have at least a six-month, and preferably a one-year, storage reserve to protect against the risk of a significant drought or forest fire that impairs surface water quality. Ex. 25 at p. 2-4.

54. The Acequias presented no evidence to refute the City's evidence concerning the positive impact the City's Proposed Remedy would have on the reliability of the City's municipal water system.

55. I find, based on Mr. Chudnoff's opinion and the simulations run by the Gallinas Operations Model, that the adverse impact of the reversal of the pueblo rights

doctrine on the reliability of the City's water supply system can be ameliorated only if (a) the City is awarded its proposed remedy and (ii) the City increases the water storage capacity of Bradner Reservoir. Tr. 341: 7 to 19; Tr: 520: 7-16; Tr. 528: 2-24.

H. The City's Effort's to Mitigate the Impact of *Martinez*.

56. Subsequent to the *Martinez* decision, the City has taken several steps to mitigate the impact of the loss of its pueblo water right. Some of the more significant steps were:

> In 2005, the City extended an existing moratorium on providing water service outside its municipal water system's service area.
>
> During 2005 and 2006, the City expanded its existing effluent reuse program.
>
> In 2006, the City sought federal funding to drill an additional well in the Taylor well field to serve as a supplemental source of water during a drought. The well was completed in 2007, but the City has been unable to use the well because of water quality problems.
>
> In 2007, the City initiated a project to identify leaks in its water supply system.
>
> In 2009, the City retained a working group of seven consulting firms to identify deficiencies in the City's municipal water system and make recommendations concerning steps the City needed to take to assure the reliability of the system. The working group submitted to the City a lengthy report (the so-called Preliminary Engineering Report) on September 1, 2011 setting forth the consultants analysis and recommendations. An executive summary of that report was admitted into evidence as Exhibit 35.
>
> In 2010, the City updated and expanded its water conservation ordinance and, in connection therewith, revised its water rate structure to encourage voluntary conservation efforts.

Ex. 25, pp. 5-6 to 5-8

57. The Preliminary Engineering Report identifies a number of infrastructure improvements to the municipal water system that would improve the reliability of the system. The City has sought the necessary funding for a number of those projects and

initiated the projects for which it was able to raise the necessary funds. Those projects include:

> Rehabilitation of existing wells in the Taylor well field
>
> Expansion of Bradner Reservoir
>
> Increase the size of the conveyance system transporting water from the City's diversion dam on the Gallinas to the City's reservoirs and reconfiguring the pre-sedimentation basin to control sediment and turbidity entering the reservoirs.
>
> Inspection and rehabilitation of the City's water storage tanks
>
> Expansion of effluent reuse treatment system

Ex. 25, pp. 5-3 to 5-4

58. The Executive Summary in the Preliminary Engineering Report contains the following statement:

> These [engineering planning] studies have found that the recommended infrastructure improvements, including new wells and increased storage capacity, are sufficient to address the City's long term need for a stable and drought-proof supply only if the City is awarded its entire claim in the Remand. The reliability of the proposed improvements in meeting future demand is dependent on the City being awarded the full amount of prior and paramount water rights that it is seeking to acquire through the Remand proceeding.

Ex. 33, p. 12

I. The Acequias Proposed Remedy

59. The Acequias' Proposed Remedy requests that the Court order that the City and the Acequias share water when the flows of the Gallinas are not sufficient to enable the parties to divert their adjudicated amounts of water. The specifics of the Acequias' proposal for sharing water are set forth in a document entitled "Acequias' Substituted Suggested Alternative Remedy, "which is an exhibit to Acequias' Motion to

Substitute and Strike Document, filed November 13, 2009. A copy of the document was also admitted into evidence as Acequias' Exhibit A-1.

60. The salient provisions of the Acequias Remedy can be summarized as follows: During irrigation season (i.e. between March 1 and October 31),

> When the flows of the Gallinas River are between 24.0 cfs and 20 cfs, the City would limit its diversions to the portion of the flow that exceeds 20 cfs. When the flow drops below 20 cfs, the City would cease diverting water.
>
> If the flow of the Gallinas drops to 20.0 cfs or below for five consecutive days, the parties will divert water pursuant to a five-week rotation schedule. During the first two weeks, the City can divert certain specified amounts of water, depending on the amount of flow. During the remaining three weeks, the City cannot divert any water.
>
> The forgoing provisions for the sharing of water will not apply if the amount of the City's storage water drops below a 70 days supply. In that event, the City can continuously divert up to 6 cfs until the amount of water in storage reaches a 75 days supply. Once the City has 75 days of storage, water is shared pursuant to the previously described provisions of the agreement.

Exhibit A-1.

61. The Acequias presented no evidence concerning the amounts of water that likely would be delivered to the City under different flow conditions on the Gallinas. The Acequias did not offer any evidence that explained why their formula for sharing water was more equitable than other possible formulas. They presented no evidence that would allow me to assess what impact the Acequias Proposed Remedy would have on the City's ability to store water or on its ability to respond to a prolonged drought or a forest fire that contaminated the river flow.

62. In 2009, the City and the Acequias entered into a water sharing agreement for a one-year period on an experimental basis as part of an effort to resolve the City's claim for an equitable remedy. Tr. 317: 21-319:1 The City and the Acequias hoped "to

use the experience gained from implementation of the 2009 Sharing Agreement to develop further sharing agreements for the 2010 and 2011 irrigation season, with the goal of reaching a final sharing agreement that can be presented to the District Court for adjudication of the City's reliance right". Ex. A-5, p. 1. The operative provisions of the Acequias Proposed Remedy and the 2009 sharing agreement are the same. *Compare* Ex. A-1 to Ex. A-5

63. The 2009 sharing agreement adversely impacted the reliability of the City's municipal water system. The City was not able to store sufficient amounts of water for emergencies and was forced to continuously impose emergency restrictions on its customers' use of water. Because of its adverse experience with the 2009 sharing agreement, the City did not enter into any subsequent agreements with the Acequias. Tr. 317:21 to 318:17.

64. Except for the 2009 sharing agreement, water has been allocated in the Gallinas subsequent to *Martinez* based on a rotation schedule promulgated by the State Engineer's water master. When water was allocated in accordance with the water master's rotation schedule, the water level in the City's reservoirs dropped continuously, except when replenished by rain. Tr. 150: 4 to 151: 20. The water master's rotation schedule did not take into account the City's need to replenish its reservoirs that had been depleted because of a low winter snow pack or a prolonged drought. Tr. 259:17 to 262:19; 268:15 to 269:21; 317:21 to 319:1. In 2012, the City's reservoirs would have gone dry had the water master not allowed the City to divert an additional 1,050 acre-feet of water. In 2013, the City's reservoirs would have gone dry if the water master had

not allowed the City to divert an additional 750 acre feet of water. Tr. 480:21 to 489:24; Ex. 46A; Ex. 46B.

65. I find, based on the evidence concerning the 2009 sharing agreement and the water master's rotation schedule, that the sharing of water pursuant to an inflexible formula or schedule that cannot be adjusted to take account of the City's need to maintain adequate reserves of water adversely impacts the reliability of the City's municipal water system. Tr. 509:25 to 511:9

66. A ridged sharing formula, such as the formula contained in the Acequias Proposed Remedy, puts the City's ability to store water at significant risk because it imposes unworkable constraints on the City's ability to adapt to different flow conditions on the river. Tr. 528:12-24; Tr. 991:6 to 992: 22; Tr. 993:1 to 995:21

67. The Acequias regard their proposed remedy as an "example" or a "starting point" for how water should be shared as between the City and their members. Tr. 757: 17 - 758: 20; Tr. 809:12 to 810:4. They acknowledge that, when the 2009 sharing agreement was in effect, adjustments had to be made to the rotation schedule. Tr. 742: 5-17. They acknowledge their proposed remedy might need to be modified based on "what we have learned in the process" Tr. 752:18 – 23. When ask to explain what would happen if the parties were unable to agree on necessary adjustments to the rotation counsel, the Acequias' witness provided an evasive and unresponsive answer. Tr. 810:9 to 811: 25.

68. Some Acequias members are ambivalent about the Acequias' Remedy. The mayordomo of the Acequia Madre de los Romeros testified "I never saw any benefit at my end of the ditch from the water sharing agreement." Tr. 943:12-20. He suggested

that in lieu of water sharing, "a lot of my members are reaching for an option called some kind of compensation" Tr. 944:18 to 945: 2. He added "I'm starting to think maybe they should just like buy water from us just like they buy it from other parties." TR. 946: 11-15.

J. The Impact of the City's Remedy on the Acequias and Their Members

1. The City's Evidence

69. The City presented evidence concerning the impact of its proposed remedy on the Acequias at both hearings. The evidence at the First Hearing was based on the alternative PDR's claimed by the Acequias and the City. The evidence at the Second Hearing was based on the PDR adjudicated by the Court. My findings concerning the impact of the City's Proposed Remedy are based on the PDR adjudicated by the Court.

70. At the Second Hearing, the City called Mr. William Miller as an expert witness to testifying concerning the impact the City's Remedy on the Acequias and their Members. Mr. Miller testified that, if water was diverted in accordance with the City's Proposed Remedy instead of in accordance with adjudicated priorities, over a thirty-year period on average:

> The amount of water delivered to the Acequias would be reduced by 307 acre feet per year; and
>
> The amount of water delivered to the Members, in the aggregate, would be reduced by 200 acre-feet per year.

Ex. 73, pp. 1-3.

71. Mr. Miller's opinions are based on two simulations run on the Gallinas Operating Model that are predicated on Mr. Miller's calculation of "required bypass flow". Required bypass flow is the amount of water that must bypass the City's place of

diversion to enable the Acequias to deliver the Members their adjudicated amounts of water. Because of river losses in transit, the required bypass flow must exceed the amount of water that reaches the Acequias headgates. Mr. Miller determined that 3,241 acre-feet of water must bypass the City's diversion structures if the Acequias are to receive their full complement of water. Tr: 1163:23 to 1168:5; Ex. 47, 5-7; Ex 73, pp. 1-3; Ex. 74, p. 5.

72. Mr. Chudnoff ran two simulations of required bypass flow on the Gallinas Operating Model to determine how often over a thirty year period the actual bypass flow would exceed the required amount of 3,241 acre feet per year. One simulation calculated the amount of water that would have bypassed the City's point of diversion between 1950 and 1979 if priorities had been enforced in the Gallinas (the "No Remedy Scenario"). The other simulation calculated the amount of water that would have bypassed the City's point of diversion if the City's Remedy had been in effect (the "City's Remedy Scenario"). The difference in bypass flow between the No Remedy and City's Remedy scenarios is the reduction in bypass flow attributable to the City's Proposed Remedy. Tr. 1057:20 to 1080:5; Tr. 1163:23 to 1168: 5; Ex. 74, pp. 6-8

73. According to the Gallinas Operating Model, the amount of bypass flow at the City's point of diversion between 1950 and 1979 would have been as follows under the No Remedy and City's Remedy scenarios:

Simulated Bypass Flow
(Required Bypass Flow: 3,241 Acre Feet)

Year	River Bypass Flows			Year	River Bypass Flows		
	No Remedy	City's Remedy	Reduction in Flow		No Remedy	City's Remedy	Reduction in Bypass
1950	2607	2083	524	1966	2991	2808	183
1951	1599	691	908	1967	2559	1949	610
1952	3084	2841	243	1968	3241	3241	0

1953	1005	0	1005	1969	3241	3241	0
1954	1079	0	1079	1970	3241	3241	0
1955	3137	2345	792	1971	2309	1689	620
1956	370	0	370	1972	3241	2751	490
1957	3241	2423	818	1973	3241	3241	0
1958	3241	3241	0	1974	1540	1017	523
1959	3241	3241	0	1975	3241	3241	0
1960	3241	3241	0	1976	2305	1730	575
1961	3241	3241	0	1977	2335	1360	975
1962	3241	3241	0	1978	1687	948	739
1963	2562	1943	619	1979	3241	3241	0
1964	1872	1200	672				
1965	3241	3241	0	Average	2614	2222	392

Ex. 75, p. 8, Table 3; Tr. 1094: 18 to 1107:4

74. The year 1950 can be used to illustrate the impact of changes in bypass flow on the Acequias. In 1950 the amount of bypass flow under the "No Remedy" Scenario was 2,607 acre-feet. In other words, in 1950 the amount of bypass flow would not have been sufficient to deliver the Acequias their adjudicated amounts of water even if priorities had been enforced. In 1950, the difference between the bypass flow under the No Remedy and City's Remedy scenarios is 524 acre-feet. In other words, the amount of the reduction in bypass flow that is attributable to the City's Remedy (as opposed to deficiencies in the flow of the river) is 524 acre-feet. Tr. 1094:18 to 1107:14. Ex. 74, p. 8

75. According to the Gallinas Operating Model, if water had been diverted in accordance with adjudicated priorities, the bypass flow would have been sufficient to deliver the required amounts of water to the Acequias only 80.7% of the time (2,614/3241 = 80.7%) during the thirty-year period simulated by the model. According to the Gallinas Operating Model, if water had been diverted in accordance with the City's Proposed Remedy during this thirty-year period, the bypass flow would have been

sufficient to deliver the required amounts of water to the Acequias only 68.6 % of the time (2222/3241 = 68.6 %). Thus, the percentage reduction in bypass flow that is attributable to the City's Remedy is 12.1% (80.7 % - 68.6 % = 12.1%). Tr. 1094:18 to 1107:14. Ex. 74, p. 8

76. In Mr. Miller's opinion, if the Required Bypass Flow is reduced by 12.1% on account of the City's Remedy, the amount of water delivered to the Acequias will be reduced by 307 acre feet per year and the amount of water delivered to all Members will be reduced by 198.96 (rounded to 200) acre-feet per year. Tr. 1160:1 to 1168:15; Ex. 73, pp. 1-3.

2. Acequias Evidence of Impact of Proposed Remedy

77. The Acequias called Eddie Trujillo as an expert witness to provide opinion testimony concerning the impact of the City's Proposed Remedy on the Acequias and their Members. Mr. Trujillo earned a Bachelor of Science in civil engineering from New Mexico State University, is a registered professional engineer in New Mexico and worked for the New Mexico Interstate Stream Commission for approximately twenty years. Tr. 1485: 18 to Tr. 1487: 8. I allowed Mr. Trujillo to testify as an expert, despite the City's objections.

78. Mr. Trujillo testified on direct examination that, in his opinion, the City "could take all the water in the creek" if the Court awarded the City Remedy. Tr. 1525: 23 to Tr.: 1526: 4. However, as Mr. Trujillo's examination proceeded, it became apparent that his calculations were predicated on an erroneous assumption. He assumed the City's diversions would not be limited by the City's Proposed Remedy and that the only limitation on the City's diversions would be the capacity of its diversion structure

and reservoirs. In other words, he assumed the City would continue to divert water as if it owned a pueblo water right even though the Supreme Court had abrogated the right. When asked to assume that the City's diversions would be in accord with the City's Proposed Remedy, he retracted his opinion. Tr. 1546: 25 to Tr. 1549: 22; Tr:. 1560 7 to 17; Tr. 1587: 21; Tr: 1604: 10 to Tr. 1605: 22. Incredibility, by the conclusion of his testimony, Mr. Trujillo wound up testifying that the Acequias would receive their full supply of water if the water master ensured that the City's diversions were strictly in accord with the City's Proposed Remedy. Tr. 1605: 12-16.

79. Although Mr. Trujillo's testimony undercut the Acequias assertion that they will not receive sufficient water if the Court awards the City its proposed remedy, I have decided not to give his testimony any weight. The City itself acknowledges that the Acequias will not receive a full supply of water in an average year.

80. The Acequias called several Acequia members as witnesses to express their opinions as lay witnesses about how the City's Proposed Remedy would impact their ability to farm and sustain the traditions of the acequia culture in the Gallinas area. Their testimony was (a) rationally based on their familiarity with raising crops using irrigation water diverted from the Gallinas River, (b) helpful to a clear understanding of their testimony and (c) not based on scientific, technical or other specialized knowledge. For that reason, I allowed the Members to express opinions as lay witnesses over the City's objections. *See* Rule 11-701 NMRA.

81. During the years *Cartwright* was in effect, farmers frequently could not divert enough water to irrigate their crops. Several farms dried up for lack of sufficient water. The Members who testified believe the City was responsible for their lack of

sufficient irrigation water because it diverted water during the *Cartwright* years without regard to the impact of its diversions on the agricultural community. They believe that *Cartwright* hastened the decline of farming and the acequia culture in the Gallinas region. Tr. 976:8-16: 974: 2-10.

82. Without a reliable source of water, farming cannot be sustained. Without a reliable source of water, farmers are hesitant to purchase seed or make the other investments that are necessary to maintain a farm. Members believe that, because of the water shortages they attribute to *Cartwright*, parciantes did not maintain their ditches, pay dues to their acequias or take on the other obligations of acequia life. According to one Member, the City's diversions during irrigation season without regard to the impact on local farmers transformed "what was once a thriving agricultural community [into one that is] now marginal at best" Tr. 974:2-10.

83. The Members who testified believe the City's Proposed Remedy will be no different in effect than the pueblo rights doctrine. The City will have the first call on the river during irrigation season. TR. 944:5-10. The City will take all the water. TR: 868: 23-869:14. "If the City's claim for the 1835 priority is recognized …there would be no water left in that stream system, neither for my acequia or the other acequias in this basin." Tr. 783:24 to Tr.7 84:7. The agricultural community cannot survive if water is not shared during irrigation season. Tr.: 895: 22-896:7; 897:12-21. Many Members believe the City's Proposed Remedy will hasten the "extinction of the culture and the existence of agriculture in the Las Vegas irrigation basin". Tr. 897: 16-21.

3. Weight of the Evidence Concerning the Impact of Proposed Remedy on the Acequias

84. The methodology, data, and assumptions used by Mr. Miller to estimate the amounts of water that would not be delivered to the Acequias and their members if the Court adopted the City's Proposed Remedy were persuasive. Mr. Trujillo's testimony was, for the reasons I have already stated, not credible and I give it no weight. I find, therefore, that 307 acre feet per year is a reasonable estimate of the average amount of water that will not be delivered to the Acequias' headgates over a thirty year period if the City's Proposed Remedy is adopted. I also find that 200 acre feet per year is a reasonable estimate of the average amount of water that will not be delivered, in the aggregate, to all Members over a thirty year period.

85. Mr. Miller's estimates, because they are based on arithmetic averages, do not fully capture the impact of the City's Proposed Remedy on the Acequias and their members. Because the flow of the Gallinas can vary significantly from year to year, if water is diverted in accordance with the City's Proposed Remedy, the Acequias may receive little water in some years and in other years they may receive their full complement of water. The whipsaw impact of the City' Proposed Remedy on water deliveries to the Acequias is apparent from the Bypass Flow Simulation. Under the City's Remedy scenario, the Acequias receive their full complement of water in twelve of the thirty years covered by the simulation. In fifteen years, the reduction in bypass flow exceeds the thirty year average of 392 acre-feet per year. In those years, the shortfall in deliveries to the Acequias and their Members will substantially exceed the 307-acre feet and 200 acre-feet per year averages calculated by Mr. Miller.

86. The Bypass Flow Simulation illuminates a harsh fact about the Gallinas as a source of irrigation water. In 16 of the 30 years represented in the simulation, the

Acequias will not receive a full supply of water under the No Remedy Scenario. In other words, even if the City' Remedy is rejected and priorities are enforce in the Gallinas, the reliability of the Acequias' supply of water is by no means assured.

87. The trade-offs are harsh when attempting to balance the reliance interests of the City and the Acequias. In any year in which the flows of the Gallinas are relatively low, there will not be sufficient water for both the Acequias and the City. Any equitable remedy fashioned by this Court that seeks to enhance the reliability of the City's municipal water supply increases the risk that the Acequias and their Members will not receive sufficient water to irrigate their crops. A decision by this Court that the priorities of the Members are inviolate and must be enforced puts the reliability of the City's municipal water system at risk.

K. The City's Proposed Mitigation Payment

88. The City called Mr. Travis D. Engelage as an expert witness to present opinion testimony concerning the monetary payment that, in his words, would provide "compensation on 1,200 acre feet of non-specific water rights impacting the Gallinas River Acequias, which is created by the City of Las Vegas Reliance Claim". Ex 75, p. 4. Mr. Engelage is a real estate appraiser, licensed in New Mexico, has worked as an appraiser for more than forty years, and has appraised numerous commercial, industrial and agricultural properties. He earned an MAI designation from the Appraisal Institute in 1981 and RM in 1980. He has appraised water rights in connection with the sale of ranch and farmland and water rights that were severed from the land and sold to municipal water systems. Tr. 1270-1271, 1273; Ex. 75 at p. 10. The Acequias objected to Mr. Engelage's expert qualifications. After considering Mr. Engelage's qualifications

and his answers to counsel's questions on voir dire, I allowed Mr. Engelage to testify as an expert witness concerning the amount of compensation that should be paid to the Acequias to mitigate the impact of the City's Remedy. Tr. 1276.

89. To render his opinion, Mr. Engelage compared the value of 1,200 acre-feet of irrigation rights with priorities that pre-dates 1881 to the value of 1,200 acre-feet of irrigation rights with a priority of 1881. The difference in value between the pre-1881 and 1881 water rights represents, according to Mr. Engelage, the estimated value realized by converting the 1881 priority water right to the most senior irrigation right on the Gallinas. To the amount of this difference in value, Mr. Engelage added "severance damages", which represented the "loss of 200 acre feet of water [that otherwise would have been] available for irrigation". Ex. 75, p. 2.

90. The results of Mr. Engelage's calculations were as follows:

Value of pre 1881 priority, 1200 acre feet water right (1,200, acre feet of water equivalent to 600 irrigated acres; 600 irrigated acres x $ 2,700 per acre)	$1,620,000
Value of 1881 priority, 1,200 acre feet water right (1,200 acre feet of water equivalent to 600 irrigated acres; 600 irrigated acres x $ 1,485 per acre)	891,000
Difference in value because of conversion in priority	$ 729,000
Plus: residual damages (200 acre feet of water equivalent to 100 irrigated acres; 100 x $2,700 per acre)	270,000
Total Compensation	$ 999,000
Total Compensation Rounded	$1,000,000

91. Mr. Engelage testified that the methodology he used for determining the compensation to be paid the Acequias was analogous to a "before and after" appraisal of real property in the context of a partial taking in an eminent domain proceeding. The "before and after" method quantifies the damages from a partial taking by comparing the value of the entire property before the taking to the value of the remaining property after

the taking. The difference in value, plus any "severance damages" to the remaining property, represents the required compensation in connection with a partial taking. Tr. 1291, 1355 Ex. 75 at p. 1

92. The persuasiveness of Mr. Engelage's opinion is dependent on the reasonableness of his estimates of the value of a pre-1881 priority water right and a 1881 priority water right. To determine the value of a pre-1881 water right, Mr. Engelage performed a comparative sales analysis of the prices paid for eight tracts of land. Pre-1881 water rights were appurtenant to six of the tracts and the water rights were sold with the land. Two tracts had no water rights. Mr. Engelage estimated the extent to which the land and the water contributed to the purchase price of the six tracts of land by comparing the purchase price of the six tracts to the purchase price of the two tracts that had no water rights. The results of Mr. Engelage's comparative sales analysis were as follows:

Sale No.	Purchase Price Per Acre	Land Value Per Acre	Water Right Value Per Acre
1	15,533.98	12,900.00	2,633.98
2	29,069.77	26,400.00	2,669.77
3	36,000.00	33,300.00	2,700.00
4	25,000.00	25,000.00	0
5	12,500.00	10,000.00	2,500.00
6	10,000.00	10,000.00	0
7	30,625.00	27,850.00	2,775.00
8	5,000.00	3,950.00	2,846.67
Average			$ 2,687.00

93. Based on the forgoing analysis, Mr. Engelage concluded that the average value of a pre-1881 water right is $2,700.

94. When ask to explain how he determined, for the six tracts sold with water rights, the relative contribution of the land and the water to the purchase price, Mr. Engelage testified he did so based on the "size, time and location" of the sales. Tr.

1302:25-1303:1, Ex. 75 at p. 4. His assessment of the relative contribution of the land and the water was not based on any objective criteria or standard. He was not able to describe how the eight tracts of land differed from one another in any respects other than six had water rights and two did not. Thus, he could not state how, if at all, other differences might have had an impact on value. In short, Mr. Engelage's assessment of the relative contribution was entirely subjective.

95. Mr. Engelage determined the value of a 1881-priority water right using the criteria employed by the State Engineer when determining the amount of water that can be transferred from irrigation to municipal use. In the Gallinas, if a senior (i.e. pre-1881) irrigation right is changed to a municipal use, only .87 acre foot per acre-foot of water right can be transferred. If a junior (i.e. 1881 or later) irrigation right is changed to a municipal use, only .48-acre foot per acre of water right can be transferred. According to Mr. Engelage, this means that a senior water right should sell for a 55% premium over a junior water right. Ex. 75, p. 2. Based on this conclusion, Mr. Engelage discounted the value of a pre-1881 (i.e. senior) irrigation water right by 55% (.48/.87 = .55) to determine the value of an 1881 water right. Thus, he determined that the value of an 1881 irrigation water right to irrigate one acre of land is $1,485 per irrigated acre. ($ 2,700,00 x .48/.87 = $1,485) Ex. 75, p. 5.

96. Mr. Engelage determined the severance damages caused by the conversion in priority by relying on Mr. Miller's opinion that the Members on average would receive 200 acre feet less water per year if water was diverted in accord with the City's Proposed Remedy. He determined that the residual damages would be $270,000 (200 acre feet of

water requires 100 acres of irrigated land; 100 acres x $ 2,700.00 = $270,000.). Ex. 75 at p. 5.

97. On cross-examination, the Acequias put into evidence four agreements the City negotiated for the purchase of Gallinas irrigation water rights. The agreements obligated the City to purchase the sellers' irrigation water rights subject to the condition precedent that the State Engineer authorized a change in use to a municipal use. Two of the four agreements concerned the City's purchase of pre 1881 rights. Exs. V and W. Two agreements concerned the City's purchase of post 1881 rights. Exs. T and U. In all four agreements, the purchase price was adjusted based on the amount of consumptive use authorized for transfer by the State Engineer. The prices the City agreed to pay, per acre-foot of consumptive use, were:

Exhibit	Priority Date	Diversionary Right Per Acre	Consumptive Use Per Acre	State Engineer Transfer Coefficient	Price Paid by City Per Acre Foot of Consumptive Use	Price Paid by City Per Irrigated Acre
Ex. T	1888	2	1	.48	$4,000	$ 1,920
Ex. U	1888	2	1	.48	$3,200	$1,536
Ex V	1848	2	1	.87	$5,000	$ 4,350
Ex. W	1848	2	1	.87	$4,000	$ 3,480

98. During his cross-examination Mr. Engelage was ask if he took into account the City's purchase of irrigation rights for transfer to municipal use when determining the Acequias' compensation. He testified he did not, explaining that a sale of irrigation rights to the City creates more risk for the seller than a sale of irrigated land. According to Mr. Engelage, those risks include the possibility the State Engineer will not approve the transfer, the time required to obtain the State Engineer's approval and the

possibility per acre prices might change before the transfer is approved. Tr. 1358:15 to 1359: 9.

99. Other than the City's agreements for the purchase of irrigation rights, the Acequias offered no evidence concerning the value of irrigation water rights in the Gallinas.

100. Mr. Engelage's opinion that the value of a senior irrigation water right in the Gallinas is $ 2,700 per acre of land was not persuasive and I reject it. I do so for three reasons. First, Mr. Engelage's estimate of the relative contribution of land and water to the sales price of the six tracts of land was subjective and arbitrary. He was unable to point to any standard, valuation ratio or other criteria he relied on when allocating the sales prices between the land and the water right. He could not explain how the eight parcels of land differed from one another, other than some had water rights and some did not. Although he attempted to defend his value allocations by stating he had taken into account the "size, time and location" of the sales under consideration, his allocations appear to have been entirely subjective . Tr. 1302:25-1303:1, Ex. 75 at p. 4.

101. Second, the percent or proportion of the sales price that Mr. Engelage attributed to the water right as opposed to the land varies substantially from one sale to another. Specifically:

Sale No.	Purchase Price Per Acre	Portion of Purchase Price Allocated to Water	Percent of Purchase Price Allocated To Water
1	15,533.98	2,633.98	17%
2	29,069.77	2,669.77	9%
3	36,000.00	2,700.00	7.5%
4	25,000.00	0	NA
5	12,500.00	2,500.00	20%
6	10,000.00	0	NA
7	30,625.00	2,775.00	9%
8	5,000.00	2,846.67	57%

Without an explanation of how the properties differed from one another in location, suitability for farming or some other relevant factors, it is not credible that a water right might constitute 50% of the property's value in one transaction and in another it might represent only 7.5% of its value. In short, Mr. Engelage's testimony left me with the distinct impression that his allocations of value were highly subjective and not based on facts or data that would enable him to make an informed professional judgment about the value of senior water rights in the Gallinas stream system.

102. Third, when property is valued for purposes of determining the compensation to be paid in connection with a partial taking of the property, it is to be valued at its "highest and best" economic use. Conclusion of Law ¶ ___. Here, the evidence is undisputed that the "highest and best" economic use of a senior water right is for municipal use. Mr. Engelage's failure to take account of the City's purchase of senior irrigation water rights further undermines the credibility of his opinion.

103. Other than Mr. Engelage's opinion, the only evidence of the value of pre and post 1881 water rights in the record, is the prices the City paid for irrigation rights for transfer to municipal use. Because I am confronted with the lack of satisfactory evidence of value from the City's expert and given the length and complexity of the trial, I may properly use the prices paid by the City to determine the value of pre and post 1881 water rights. *See* Conclusions of Law ¶ __. Using Mr. Engelage's "before and after" methodology but substituting the average prices the City paid for pre-1881 water rights ($ 3,915 per acre) and post 1881 water rights ($1,728 per acre), the amount of compensation is computed as follows:

Value of pre-1881 water right (1,200 acre feet of water equivalent to

600 irrigated acres; 600 irrigated acres x $ 3,915 per acre)	$2,349,000
Value of post 1881 water right (1,200 acre feet of water equivalent to 600 irrigated acres; 600 irrigated acres x $ 1,728 per acre)	1,036,800
Difference in value before and after change in priority	1,312,200
Plus: Severance Damages (100 acre feet of lost consumptive use x 3,915 per acre)	391500
Total Compensation	$1,703,700

104. I find that the amount that would compensate the Members for the subordination of the priority of their water rights on account of the City's Proposed Remedy is $ $1,703,700.00, rounded up to $ 1,704,000.00.

L. Opportunities for the Acequias to Conserve Water

105. With some exceptions, the condition of the Acequias' diversion and conveyance structures are poor. Sizable amounts of water are lost to leakage from inadequately maintained diversions structures and from seepage as water is conveyed through earthen ditches to the Members' headgates. More water is lost through transpiration from vegetation growing on many ditch banks. Ex. 47, pp. 10-11: Ex. 73, pp. 4-5; Tr. 1174: 22 to Tr. 1178: 23; Tr. 567:10 to 577:1.

106. The Acequias' off-farm conveyance efficiency, as adjudicated by the Court, is 65%. *See* Order on Project Diversion Requirements, filed April 21, 2014; Ex. 76. This means that approximately 35% of the water that flows from the Acequias' headgates to the Members' headgates is lost in transit. The Acequias off-farm conveyance could be improved by as much as 95% if water was transported through concrete lined ditches or pipelines and if ditch banks were cleared of vegetation. Still more water could be conserved if obsolete or inadequately maintained headgates were replaced or repaired. Ex. 73, p. 4, Tr. 1182:6 to 1187: 14; Tr. 562:16 to 564:11

107. Water losses caused by seepage are particularly significant. Some ditches have wide, flat bottoms, which exacerbates seepage. Many ditches traverse highly permeable soil, which also exacerbates seepage. The Acequias could offset much of the impact of the Proposed Remedy on their Members by undertaking a number of water conservation projects. Ex. 75 at p. 5; Ex. 96; Tr. 1183:11 to Tr. 1187: 14.

108. The State of New Mexico provides financial assistance to help acequia members pay for infrastructure improvements to their acequias. For example, the New Mexico Interstate Stream Commission (the "ISC"), through its so-called "90-10" Program, provides grants that pay 90 % of the cost of infrastructure improvements. It also provides low interest loans to acequia members for their 10% required contribution to the costs of the improvements. Members of community ditches can also obtain funds for ditch infrastructure improvement projects by requesting that their legislators seek capital appropriations from the legislature. In addition, the ISC and the National Resources Conservation Service prepare, and help water users pay for, the plans, specifications and cost estimates needed to apply for financial assistance for ditch improvement projects. Tr. 564:12 to 567:9; Tr. 1189: to 1205:10

109. A few Acequias have undertake water conservation projects. One acequia lined a portion of its ditch with concrete and another installed approximately 1,000 feet of piping. Prior to the Second hearing, a third Acequia was awarded a grant to refurbish a headgate and install piping. Tr. 1665:18 to Tr. 1667:6; Tr. 1671: 18 to Tr. 1672: 4

110. The Acequias that lined or installed piping in their ditches acknowledge they have saved significant amounts of water. They acknowledge the time and effort their members devote to ditch maintenance has been reduced. But for concerns about

cost, they would line, or install more pipeline in, their ditches. Tr. 1386:1 to Tr. 1387:4; Tr. 1427: 8 to Tr. 1436: 4; Tr. 1681: 10 to Tr. 1682: 6; Tr. 1689: 5 to 1709: 16; Tr. 1724: 2 to Tr. 1726: 2

111. Despite the availably of ISC and other sources of public funding, many Members expressed reluctance to undertake water conservation projects. One Member questioned the benefits of preventing ditch seepage, arguing that the vegetation along the ditch banks provides both ecological and scenic benefits to the community. Tr. 1619: 17 to Tr. 1621: 20; Tr. 1635: 19 to Tr. 1637: 4. Some Members expressed frustration with the bureaucratic delays and burdensome paperwork associated with applying for an ISC grant or loan. Tr. 1393: 6 to 8: Tr. 1708: 22 to 1712: 9. Many Members questioned the wisdom of investing in ditch improvement projects given the uncertainty surrounding the availability of water. Tr. 1392: 19 to Tr. 1393: 5; Tr. 1416: 19 to 1417: 25.

III. Conclusions of Law

1. In 1958, the New Mexico Supreme Court, in *Cartwright v. Public Service Co. of New Mexico*, 66 N.M. 64, 343 P. 2d 654, rejected the trespass claims that senior water rights appropriators had asserted against the Public Service Company of New Mexico ("PNM")—the operator of the water supply system of the Town of Las Vegas — despite the fact that the plaintiffs owned water rights that had priority over the Town's water rights. The Supreme Court rejected the plaintiffs' trespass claims because it concluded that the Town of Las Vegas—the City's predecessor in interest--owned a pueblo water right in the Gallinas River.

2. PNM prevailed in the *Cartwright* litigation because a pueblo water right has two attributes that distinguish it from a water right created by prior appropriation.

First, the amount of water attributable to a pueblo water right is not fixed but increases overtime as the municipality's need for water grows. Second, the priority of a pueblo water right, with respect to both the amount of water originally diverted and all expanded amounts, relates back to the date the municipality was established. Thus, if a municipality has a pueblo water right it has first call on all the water in the stream.

3. Forty-six years after deciding *Cartwright*, the Supreme Court reversed itself and abrogated the pueblo rights doctrine in New Mexico. *Martinez v. City of Las Vegas,* 2004-NMSC-009, 135 N.M. 375. A pueblo water right is a rule of property and courts are reluctant to reverse rules of property because of the likelihood that people relied on those rules when engaging in property transactions. In *Martinez*, the City requested that the Supreme Court in effect preserve its pueblo water right by ruling that the Court's abrogation of the pueblo right doctrine would have only prospective effect. The Supreme Court, in ruling on the City's request, acknowledged that the City likely relied on the pueblo rights doctrine when making decisions about the operation and maintenance of its municipal water system. Martinez ¶ ¶ 53, 55. For that reason, the Supreme Court held that, while the reversal of the pueblo rights doctrine would have both prospective and retroactive effect, it would not apply retroactively with respect to the City. Instead the Court held that:

> [t]he City can no longer claim a pueblo water right that expands indefinitely to meet growing needs. However, to reflect the City's reasonable reliance on Cartwright and to ameliorate the potentially harsh consequences to the City of a purely retroactive application of our holding, we believe that an equitable remedy is appropriate.

Martinez at ¶ 63. The Court then remanded this case to this Court and assigned it the task of determining:

> [t]he specific aspects of the equitable remedy that would strike an appropriate balance between the reliance interests of the City, the reliance interests of other water users and the regulatory interests the State Engineer.

Martinez at ¶ 69.

4. When explaining its decision to award the City an equitable remedy, the Supreme Court identified three guideposts for this Court to use when determining the specifics of the remedy to be awarded.

5. First, the remedy must "ameliorate the potentially harsh impacts to the City of a purely retroactive application" of the reversal of the pueblo rights doctrine." *Martinez* at ¶ 63. To do so, the remedy must "consider the reliance interests of the City, such as investments incurred or lost opportunities for acquiring water rights …" *Martinez* at ¶ 66.

6. Second, the remedy must "attempt to minimize any detrimental impact on other water users, protect the State Engineer's regulatory interests, and secure any constitutional interests in adjudicated property rights" Martinez at ¶ 66.

7. Third, the remedy must " strive to protect the proper administration of justice by avoiding inconsistent judgments." *Martinez* at ¶ 66.

8. To clarify what sort of remedy should be fashioned, the Supreme Court identified, by way of example, two equitable remedies that might be acceptable, depending on the facts. The first was to award the City a "senior right to the amount of water it was applying to beneficial use in 1955." This remedy would protect the City's reliance interest, the Supreme Court noted, because it confirmed the City's expectation that "at the very least it had a prior right to the water it was using in 1955 when the plaintiffs filed their claim in Cartwright." *Martinez* at ¶ 62. This remedy would also

"avoid inconsistent judgments …while still negating the expandable right recognized in *Cartwright*." *Martinez* at ¶ 64.

9. The Supreme Court's second example of a potentially acceptable remedy was an award granting the City the right to condemn the amount of water it needed beyond its adjudicated rights but to "allow the City to pay less than present-day market value for those rights, either based on the value of the water rights at the time we decided *Cartwright* or based on some other equitable calculation". Martinez at ¶ 64. According to the Court, this remedy protects the City's reliance interest by "ensuring that the City not be placed in a worse position than it would have been in had this Court ruled in favor of the trespass claimants in *Cartwright.*" *Martinez* at ¶ 64.

10. The guideposts and examples of possible remedies delineated in *Martinez* denote the criteria this Court must use when evaluating the City's and the Acequias proposed remedies.

A. The Appropriate Balance of the Reliance Interests of City and the Acequias

11. The Supreme Court's mandate requires that the equitable remedy fashioned by this Court strike an appropriate balance between the reliance interest of the City and the Acequias. Amended Mandate, filed June 14, 2004; *Martinez* at ¶ 69.

1. The Reliance Interests of the City and the Acequias

12. The reliance interests of the City and the Acequias both stem from the same salient fact: The flow of the Gallinas is variable and uncertain and is dependent on the amount of the winter snowpack and the extent of the summer monsoons. Finding of Fact ¶ 4-5, 84-86.

13. In so far as the City's reliance interests are concerned, the Gallinas River is the primary source of water for the City's municipal water system. The City relied on the pueblo water right bestowed on it by *Cartwright* by diverting as much water from the Gallinas as it needed whenever it needed it. Finding of Fact ¶ 30-33. During the *Cartwright* years, the City intentionally decided not to purchase, condemn or take advantage of other opportunities to acquire senior Gallinas appropriative water rights for future municipal needs. It had no reason to do so because it already had, by virtue of its pueblo water right, a first call on the river. Finding of Fact ¶ ¶ 34-39. Now that its pueblo water right has been abrogated, the City does not have sufficient surface rights to operate a safe and reliable water supply system. Findings of Fact ¶¶ 46-49. Opportunities that once existed for the City to acquire additional senior Gallinas appropriative rights no longer exist. Findings of Fact ¶¶ 36-39. The City has no reasonable prospect of obtaining significant additional amounts of water from the Taylor well field or any other source. Findings of Fact ¶¶ 9,16.

14. The reliance interest of the Acequias is predicated on the seniority of the Members' water rights. Because the Members have the most senior water rights on the Gallinas, the probability that the Members can divert their full complement of water during irrigation season is much higher for them than it is for the City or other water users. The Members were not able to reap the advantages afforded to them by the priority of their water rights during the *Cartwright* years. Now that *Cartwright* has been reversed, the Members do not simply anticipate-- they expect--to realize the benefits afforded them by their status as the most senior water rights owners on the river.

2. The Acequias' Proposed Remedy

15. Here the Court must determine which of two remedies--the City's or the Acequias proposed remedy--strikes the more appropriate balance between the reliance interests of the parties. However, the Acequias did not come forward with sufficient evidence to allow the Court to assess how their remedy would impact the parties' reliance interests.

16. The Acequias' Proposed Remedy purports to balance the reliance interests of the City and the Acequias by requiring that they share water during irrigation season pursuant to a rotation schedule implemented when the flows of the Gallinas falls below a specified amount. The sharing of water in times of shortage is in accord with the acequia culture and much can be said in the abstract about the benefits of sharing. *See* Gregory A. Hicks and Devon G. Pena, *Community Acequias in Colorado's Rio Culebra Watershed: A Customary Commons in the Domain of Prior Appropriation*, 74 U of Col. L. Rev. 387 (2003). However, at trial the Acequias assumed the benefits of sharing were self-evident and offered no evidence that would allow the Court to assess the impact of the Acequias' Remedy on the City and the Acequias. They offered no evidence of what amounts of water the Acequias and the City might reasonable expect to receive under different flow conditions of the river based on the rotation schedule set forth in the Acequias' Remedy.

17. The only evidence concerning the impact of the Acequias' Remedy on the parties was offered by the City. The City proved by a preponderance of the evidence that its water storage reserves dropped precipitously when water was distributed pursuant to rotation schedules that are similar to the Acequias proposed rotation schedule. Findings of Fact ¶¶63 to 66.

18. Not only did the Acequias not present any evidence that would allow the Court to assess the impact of their remedy on the parties, the evidence they did present revealed that not all Members benefited equally from sharing. Findings of Fact ¶ 68.

19. For these reasons, I conclude that the Acequias did not come forward with sufficient evidence that their proposed remedy strikes an appropriate balance between the reliance interests of the City and the Acequias.

3. The City's Proposed Remedy

20. The City did come forward with sufficient evidence to allow the Court to assess the benefits and burdens attributable to its proposed remedy. Specifically, the City proved, by a preponderance of the evidence, [clear and convincing evidence] that its ability to store water for a drought or other emergency has been compromised by the abrogation of its pueblo right. Findings of Fact ¶¶ 46-48. The City proved, by a preponderance of the evidence, the extent to which water storage reserves would be improved by an award of its proposed remedy. Findings of Fact ¶¶ 50-55. The City proved, by a preponderance of the evidence, what hardships would be imposed on the Acequias and their Members by an award of the City's Remedy. Findings of Fact ¶ ¶ 69-75, 83-86. The question is whether the harm to the City caused by the reversal of the pueblo rights doctrine is so severe that an award of the City's Proposed Remedy is appropriate despite the hardships the remedy will impose on the Acequias and their Members.

21. Courts will not award an equitable remedy, even if the plaintiff requesting the remedy has satisfied all conditions precedent to equitable relief, if the remedy would impose an undue hardship on the defendant. Whether a particular equitable remedy

would impose an undue hardship is **not** determined by simply evaluating the amount of hardship imposed on the defendant. It is determined by **comparing** the defendant's hardship to the hardship the plaintiff would suffer if equitable relief were to be denied. A court will deny equitable relief only if the harm suffered by the defendant is greatly disproportionate to the harm the plaintiff would suffer should equitable relief be denied. In other words, a Court will deny equitable relief only if the benefits of the remedy are substantially outweighed by its costs. *See* Amoco, Ltd., Co. v. Wellborn, 2001 NMSC-012, 130 N.M. 155; Mark P. Gergan, John Golden and Henry Smith , *The Supreme Court's Accidental Revolution? The Test for Permanent Injunctions*, 112 Colum. L. Rev. 203, 226-30 (2012); Douglas Laycock, *The Neglected Defense of Undue Hardship (And the Doctrinal Train Wreck in Boomer v. Atlantic Cement),* 4 J. Tort L. 1 (2012).

22. An analysis of the relative hardships imposed by an award or the refusal to award the City's Proposed Remedy reveals that the hardships to both parties are significant, but differ in the type of interests that are adversely impacted. Private property interests—the Members' water rights—are adversely impacted if the Court adopts the City's Proposed Remedy. The public interest—the interests of the citizen of the City in a safe and reliable water supply—is adversely impacted if the Court does not adopt the City's Proposed Remedy. Thus to determine the appropriate balance between the reliance interests of the City and the Acequias, the Court must determine whether the public interest in a reliable water system trumps the private property interests of the Acequias.

23. The United States and New Mexico Constitutions answer the question of whether the public interest of the City's citizens trumps the private property interest of

the Acequias. Both constitutions permit the government to take private property for a public purpose provided the owners of the property are paid "just compensation." U.S. Const. Amend V ("[n]or shall private property be taken for public use, without just compensation"); N.M. Const. Art. II, § 20 ("[p]rivate property shall not be taken or damaged for public use without just compensation"). The Takings Clauses are "designed not to limit the governmental interference with property rights per se, but rather to secure compensation in the event of otherwise proper interference amounting to a taking". *First English Evangelical Lutheran Church of Glendale v. County of L. A*., 482 U. S. 304, 315, 107 S. Ct. 2378, 96 L Ed. 2d 250 (1987).

24. Here, the City is not seeking to condemn the Members' water rights but it is asking that the Court award a remedy that would harm the Members water rights. The City's Proposed Remedy is analogous to a taking of private property because the remedy, deprives the Members of a key benefit they derive from their water rights--the right to divert water prior to the City.

25. Government actions that fall short of an outright appropriation of private property may constitute a taking of private property for which just compensation must be paid. Government actions that are tantamount to a physical taking of private property are per se takings. Government actions that completely deprive the owner of all economic benefits of their property are also per se takings. Other government actions that substantially interfere with private property may or may not be compensable takings depending on the results of the multifactor balancing test required by *Penn Central Transportation Co. V. New York City*, 438 U S. 104, 98 S. Ct. 2646, 57 L. Ed. 2d 631 (1978). *See Alto Eldorado Partnership v. County of Santa Fe*, 634 F. 3d 1170, 1173-

1174 (10th Cir. 2011); *Casitas Mun. Water Dist. V. United States*, 543. F. 3d 1276 (2008); Robert Meltz, *Takings Law Today: A Primer for the Perplexed*, 34 Ecology L. Q. 307 (2007)

26. Here, there is no need to engage in a multifactor balancing test to determine if the City must pay just compensation to the Members on account of the City's Proposed Remedy. The United States Supreme Court has held in a trilogy of cases that a per se taking of water rights occurs whenever the government physically diverts, or causes water to be diverted, away from the owner of a water right. *International Paper Company v. United States*, 282 U.S. 399, 51 S. Ct. 176, 75 L. Ed. 2d. 410 (1931)(government action was per se taking when it ordered power company to increase the power produced by a power plant by ceasing to divert water into water transportation canal); *United States v. Gerlach Live Stock Company*, 339 U.S. 725, 70 S. Ct. 955, 94 L. E. 1231 (1950) (per se taking of water rights when government diverted waters into a system of irrigation canals leaving "only a dry river bed" for those who owned water below the dam); *Dugan v. Rank*, 372 U.S. 609, 625-2683 S. Ct. 999, 1009,10 L. Ed. 2d 15 (1963) (per se taking when the government deprived water rights owners of access to water by storing water in upstream dam).

27. Here, if the Court awards the remedy requested by the City, the City will be diverting up to 1200 acre feet of water per year that otherwise would have flowed to the Acequias and their Members. The City's Remedy will further a legitimate public purpose—increasing the reliability of the City's municipal water system by increasing the amount of water in storage. I conclude that the City's Proposed Remedy will "strike an appropriate balance between the reliance interests of the City and the reliance interests of

other water users" if the remedy is conditioned on the payment of just compensation to the Members for the per se taking of their water rights.

4. Just Compensation

28. Section 42A-1-26, NMSA 1978 provides that the compensation to be paid in connection with a partial taking of property is:

> [t]he difference between the fair market value of the entire property immediately before the taking and the fair market value of the property remaining immediately after the taking. In determining such difference, all elements which would enhance or diminish the fair market value before and after the taking shall be considered even though some of the damages sustained by the remaining property, in themselves, might otherwise be deemed noncompensable.

The valuation methodology mandated by Section 42A-1-26 is know as the "before and after" method. *Yates Petroleum Corp. v. Kennedy*, 1989-NMSC-039, ¶ 11, 108 N.M. 564, 567-68. Mr. Engelage used the "before and after method" to arrive at his opinion that $ 1,000,000 would compensate the Acequias for the impacts of the City's Remedy. The $ 1,000,000 is the sum of (a) $729,000, which is the increase in value caused by converting an irrigation water right for 1200 acre feet per year with an 1881 priority into a water right with an 1835 priority and (b) $ 200,000, which represents the severance damages the Members will suffer on account of the 200 acre feet of water per year that will no longer be delivered to their headgates. Findings of Fact ¶¶ 88-95.

29. Mr. Engelage did not determine the decrease in value of the Members water rights before and after the enhancement in the priority of the City's water rights. Rather, he used a proxy. He determined the value of 1200-acre feet of water rights with a pre-1881 priority and used that value as a proxy for the decreased value of the Members water rights caused by subordination of their water rights effectuated by the City's

Proposed Remedy. Proxies are reasonable way of determining value when direct evidence of value is lacking. *See generally Primetime Hospitality, Inc. v. City of Albuquerque*, 2009-NMSC-011, 146 N. M. 1 (lost profits are a reasonable measure of rental value when determining just compensation in the context of an temporary taking); *Rexam Beverage Can Co. v. Bolger*, 620 F. 3d 718,728 (7th Cir 2010) (cost of repairing roof is a reasonable proxy for the diminished value of a building attributable to a roof in disrepair).

30. Although the proxy Mr. Engelage used when determining the compensation to be paid on account of the City's Remedy was appropriate, I found that his opinion of the value of a pre-1881 priority irrigation water rights was not convincing. Findings of Fact ¶¶ 99-101. Mr. Engelage's allocation of the sale price of irrigated land between the price attributable to the land and the price attributable to the water right was arbitrary and not related to any objective criteria or standard. *See, Walters v. State Road Department*, 239 So. 2d 878 (Fla. Dist. Ct. App. 1970) (court rejected appraiser's valuation adjustments based on time, location and size of property as speculative and conjectural because the adjustments were not based on any recognized standard); *Richfield 81 Partners II, Ltd. V. SunTrust Bank,* 447 B. R. 653, 659 (Bankr. N.D. Ga. 2011) (appraisal adjustments that are not supported by an objective standard are arbitrary).

31. I also rejected Mr. Engelage's opinion of the value of a pre-1881 water right because he failed to take into account in his comparable sales analysis the prices the City paid for irrigation water rights that were to be converted to municipal use. The highest and best use of a water right in the Gallinas, insofar as market value is concerned, is a

municipal use. Findings of Fact ¶ 96. Market value must be determined with reference to the highest and best use of the property in question. The "highest and best use" of the property need not be its current use provided the value is determined by reference to a use that is a reasonably possibility. *City of Albuquerque v. PCA-Albuquerque No. 19*, 1993-NMCA-043, ¶ 12, 115 N. M. 739, 742-43 ("[t]he value of the property remaining after condemnation must be based on its highest and best use"); *Landmark, Ltd. V. Bernalillo County Assessor*, 1985-NMCA-032, ¶ 15, 103 N.M. 65, 69 ("Generally, market value is determined by the most valuable and best use to which property could reasonably, practically and lawfully be used").

32. I found that a payment of $1,704,000 would compensate the Members for the harm caused by the involuntary subordination of their water rights caused by the City's Proposed Remedy. Findings of Fact ¶ 105. My findings were predicated on the prices the City paid for irrigation rights for conversion to municipal use. I relied on the prices paid by the City because; having rejected Mr. Engelage's valuations, there was no other satisfactory evidence of value in the record. *In re City of New York*, 98 A. D. 2d 166, 190 471, N. Y. S. 2d 105, 120 (1983) (After a lengthy and complex trial and faced with the lack of satisfactory valuation evidence from experts, the trier of fact may determine the fair market value of the property by relying on other competent evidence of value); *see generally Estate of Fittts v. Commissioner*, 237 F. 2d 729, 731 (8th Cir. 1956) (value of unlisted stocks determined by actual sales made in arms length transactions); *In re Wooten*, 423 B. R. 108 (Bankr. E. D. Va. 2010 (prices realized by sale to unrelated third party used to establish fair market value when they are the only evidence in the record of value).

33. The City suggested that the Mitigation Payment be made to the Acequias so that they could use the funds to pay a portion of the cost of laying pipelines in their ditches and other water conservation projects. The Members are the owners of the water rights that will be impaired by the City's Proposed Remedy. Although the Acequias rather than the Members objected to the City's Proposed Remedy, the Acequias represented they were appearing on behalf of their Members. *See Special Master's Opinion and Procedural Order Concerning the Standing of the Acequias and Storrie Project Water Users Association*, filed February 19, 2008. Therefore, I conclude that any just compensation or other payment made to compensate for the harm caused by the City's Proposed Remedy should be paid to the Members and not the Acequias.

C. The Regulatory Interests of the State Engineer

34. Any equitable remedy the Court awards must be compatible with the regulatory responsibilities of the State Engineer. Martinez ¶ 65. The State Engineer's primary regulatory responsibility is to supervise and manage the "measurement, appropriation and distribution" of the waters of New Mexico. NMSA 1978 § 72-2-1.

35. Waters are allocated and distributed in this State based on the law of prior appropriation. *Martinez*, ¶ 28; *Albuquerque Land & Irrigation Co. v Gutierrez*, 10 N.M. 177, 61 P. 357 (1900), *aff'd,* 188 U.S. 545, 23 S. Ct. 338 (1903). Before the waters of the State can be allocated based on prior appropriation, the various rights to use water in a river basin must be quantified and a priority assigned to those rights. *State ex rel Reynolds v. Pecos Valley Artesian Conservancy Dist*., 1983-NMSC-044, 99 N.M. 699, 663 P. Ed 258 ("The object of an adjudication suit is to determine all claims to the use of

water in a given stream system in order to facilitate the administration of unappropriated waters and to aid in the distribution of appropriated waters"). The City's Proposed Remedy quantifies and prioritizes the amount of water the City can divert. When administering water rights in the Gallinas, the State Engineer can readily determine how much water the City can divert and when it can divert the water. Because the City's Proposed Remedy quantifies and prioritizes the City's right to water, the State Engineer can administer the remedy as if it were an appropriative water right. I conclude, therefore, that the City's Remedy is compatible with the regulatory interests of the State Engineer.

36. The Acequias' Proposed Remedy does not quantify and prioritize the amount of water the City can divert. Rather, the timing and amount of the City's diversions are defined by a five-week rotation schedule that permits the City to divert water in varying amounts every two weeks depending on the flow of the river and also permits the City to divert water out of rotation if the flow of the river exceeds certain amounts.

37. Rotation schedules such as the one specified in the Acequias Proposed Remedy are a form of equitable sharing. The Supreme Court has unequivocally stated that equitable sharing is not consistent with the law of prior appropriation. E.g. *Martinez* at ¶ ("New Mexico does not recognize equitable distribution as the system of water law that survived the Treaty of Guadalupe Hidalgo"). If the Court adopted the Acequias' Proposed Remedy, the State Engineer would be required to distribute water in a manner not in accord with the law of prior appropriation. This is reason enough to conclude that

the Acequias' remedy is not compatible with the regulatory interests of the State Engineer.

38. Aside from the fact that equitable sharing of water is not consistent with prior appropriation, the Acequias' Proposed Remedy intrudes on the State Engineer's responsibilities in still another way. An Acequia witness acknowledged the rotation schedule delineated in the Acequias Proposed Remedy might need to be modified to take account of the changing flows of the Gallinas. The witness evaded counsel's questions concerning what would happen if the parties were unable to agree on a revised rotation schedule. Findings of Fact ¶ 67. Presumably, any unresolved disputes about necessary modifications to the rotation schedule would have to be resolved by the Court.

39. Courts have no expertise in water rights administration. The procedures courts use for resolving disputes—the taking of evidence, briefing and oral argument—are expensive, time consuming and not suited to managerial decision making. Ongoing supervision of the implementation of the Acequias' Remedy would be unduly burdensome for this Court and intrude on the State Engineer's regulatory duties. *See Conservation Law Found, Inc. v. Patrick, 767. Supp.* 2d 260, 262 (D. Mass. 2011). (Court refuses to engage in ongoing supervision of storm water management plan because it lacks necessary expertise and doing so would unduly intrude on the regulatory agency's duties.)

40. Because the Acequias Remedy is not consistent with the law of prior appropriation and could not be implemented without ongoing Court involvement, I conclude that the remedy is incompatible with the State Engineer's regulatory responsibilities.

D. Martinez' Guideposts

41. The City's Remedy, if conditioned on the payment of "just compensation", comports with the three guideposts the Supreme Court promulgated for use when fashioning an appropriate equitable remedy. The City's Remedy "ameliorates the potentially harsh impact on the City of a purely retroactive application of the reversal of the pueblo rights doctrine." *Martinez* at ¶ 63. The payment of "just compensation" "minimize[s] any detrimental impact [of the City's Remedy] on other water users …and secures[s] any constitutional interest in adjudicated property rights" *Martinez* at ¶ 66. Finally, the City's Remedy "protect the proper administration of justice by avoiding inconsistent judgments." *Martinez* at ¶ 66.

42. In addition to being in accord with the Supreme Court's three guideposts, the City's remedy is analogous to one of *Martinez'* examples of a possible equitable remedy: The City's "exercise [of] its right of condemnation for the necessary amounts of water exceeding its adjudicated rights." *Martinez* ¶ 64.

43. Because the City's Remedy, conditioned on the payment of just compensation, is in accord with the Supreme Court's three guideposts, it "strike[s] an appropriate balance between the reliance interests of the City, the reliance interests of other water users, and the regulatory interests of the State Engineer" *Martinez* ¶ 69.

IV. Recommendation

For the reasons stated in this report, I recommend that the Court enter final judgment in this matter awarding the City the following equitable remedy:

> The City's Pre-1907 water right shall be divided into two water rights: (a) a water right of 1200 acre feet per annum for municipal purposes with a priority of 1835 and (b) a water right of 1400 acre feet per annum for municipal purposes with a priority of 1881.

> The City shall pay each Member its pro rata share of $ 1,704,000.00, the amount to be paid each Member to be determined by the Member's prorate share of the total irrigated acreage of all Members of the Acequias, as adjudicated by the Court in its partial final decree following the conclusion of *inter se* proceedings.[6]

A proposed form of judgment is submitted with this report.

_____

Stephen E. Snyder
Special Master

[6] The members of the Acequias who own post 1881 priority water rights are not adversely impacted by the City's Proposed Remedy and should not share in the $ 1,704,000 just compensation payment.