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Water Quality
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WQCC 22-45

PETITION FOR ALTERNATIVE ABATEMENT STANDARDS LOT 5B, VENADA PLAZA BERNALILLO, SANDOVAL COUNTY, NEW MEXICO

Prepared for:
Vital Holding, LLC
Albuquerque, New Mexico

Prepared by:
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September 2022

EA Project No. 1628301.01

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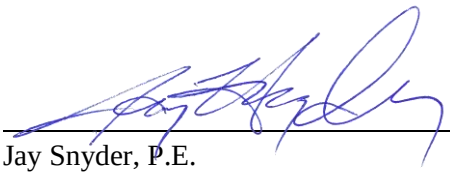

9/15/2022

Jay Snyder, P.E.
Senior Hydrogeologist

Date

EA Project No. 1628301.01

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1 WQCC-16-02-A

2 Deed Restriction

3 Petition for Alternative Abatement Standards, Former Price's Valley Gold North Dairy, Bernalillo, Sandoval County, New Mexico, April 2016

4 Town of Bernalillo Comprehensive Plan

5 Proposed High Density Residential Development Lot 5B

1. INTRODUCTION

In April 2016 a petition for alternative abatement standards (AAS) (hereafter *2016 Petition*) was filed for Lot 5B Venada Plaza in Bernalillo, New Mexico (WQCC-16-02-A) included as (Attachment 1). The New Mexico Water Quality Control Commission (NMWQCC) held a hearing on the petition in September 2016 and granted the AAS. As part of the petition, several institutional controls were proposed to prevent exposure to groundwater with contaminant concentrations in excess of NMWQCC standards. One of the institutional controls was a deed restriction to prohibit construction of water supply well on Lot 5B in the Valley Fill Aquifer (VFA), a shallow perched aquifer hydraulically separated from the Upper Santa Fe Group production aquifer.

This petition is being filed to correct an error in the deed restriction (Attachment 2) related to the 2016 petition for AAS which was granted by the NMWQCC for the former Price's Dairy groundwater on the subject property:

1. One of the proposed administrative controls proposed in the 2016 petition, Section 7.2 (Attachment 3), was a deed restriction prohibiting construction of a water supply well in the Valley Fill Aquifer (VFA)

2. The deed restriction proposed in the 2016 petition does not differentiate zoning for the property, and the basis for alternative standard did not consider health risks for industrial/commercial land use versus residential (or other) land use

3. The deed restriction filed included the language *"the property, located at Lot 5B … shall be used for non-residential purposes"* (Attachment 2)

4. This stipulation was not proposed in the April 2016 petition, was not considered by the NMWQCC, and represents an oversight based on the misunderstanding of the zoning of Lot 5B at the time of the petition. The special use zoning at that time allowed multi-family residential and commercial: but Price's thought the zoning was for commercial use only

5. The property was purchased in 2022 by the Vital Holding, LLC (Vital)

6. Vital submitted plans for commercial development to the Town of Bernalillo;

7. The commercial plans were rejected, and Bernalillo informed Vital the draft long-term comprehensive plan for Bernalillo was proposing a zoning change limiting Lot 5B to high density residential

8. The Comprehensive Plan was approved by Bernalillo on June 13, 2022 (Attachment 4)

9. The adoption of the Comprehensive Plan designating Lot 5B as high-density residential renders the property undevelopable given the *"non-residential purpose"* deed restriction

10. In response to the Comprehensive Plan change, Vital has prepared a plan for high density residential development (Attachment 5) that addresses NMED development concerns, including:

    a. Minimizing surface area exposed to precipitation infiltration via parking lots, curbs and gutters (e.g., controlled drainage)

    b. Discharge of surface water to a lined detention basin with drain-out to the adjacent Southern Sandoval County Arroyo Flood Control Agency (SSCAFCA) drainage channel

    c. Coordination with SSCAFCA to ensure discharge from on-site peaking basin to Venada Arroyo is in accordance with the SSCAFCA MS4 Permit (NMR04A000)

    d. Compliance with EPA 2022 Construction General Permit (https://www.epa.gov/system/files/documents/2022-01/2022-cgp-final-permit.pdf) through use of best management practices (BMP) during site development and construction

    e. Connection to Town of Bernalillo water supply

The 2016 Petition is included as Attachment 3 and will be referenced throughout this petition. The requirements for petition for AAS are codified at 20.6.2 NMAC Section 4103.E. Most of these requirements are discussed and developed in the 2016 petition and will be addressed herein by reference since the site profile has not changed since the 2016 filing other than the zoning change. The 2016 petition only considered numerical standards for groundwater codified at 20.6.2 NMAC Section 3103. The 2016 petition neither considered nor required evaluation of risk-based Soil Screening Levels (SSLs) derived from New Mexico Environment Department Risk Assessment Guidelines. Therefore, the zoning and future land-use change neither affects nor changes the basis for AAS developed in the 2016 petition.

The location of Lot 5B and description of the VFA are provided in Attachment 2 Section 1. A summary of abatement activities and history is provided in Attachment 1, Section II.A and in Section 1, Attachment 2.

2. AAS PETITION REQUIREMENTS

This petition to correct the land use language in the deed restriction placed on Lot 5B must address the requirements of 20.6.2 NMAC Section 1210 *Variance Petitions* and Section 4103.E *Alternative Abatement Standards*. The responses to these requirements are discussed below.

2.1 VARIANCE PETITION REQUIREMENTS

Section 1210.A requires that *"Any person seeking a variance pursuant to Section 74-6-4 (G) NMSA 1978, shall do so by filing a written petition with the commission."*

Petitions shall:

1. *State the petitioner's name and address.*

   Vital Holding, LLC
   Vincent Martinez, Managing Member
   5200 Oakland Avenue, Suite D
   Albuquerque, New Mexico 87113
   vincent.martinez@vitalgrp.net

2. *State the date of the petition.*

   September 13, 2022.

3. *Describe the facility or activity for which the variance is sought*.

   Deed restriction correction to unspecified land use versus current "non-residential purposes" language in response to Bernalillo Comprehensive Plan rezoning to high density residential.

4. *State the address or description of the property upon which the facility is located.*

   Lot 5 B, Venada Plaza, as such lot is depicted and described on a replat entitled "Lots 5-A and 5-B, Venada Plaza, which replat was filed in the Office of the County Clerk of Sandoval County, NM, on January 2, 2008 in Volume 3, Folio 2875-A (Book 411 Page 252) (see Attachment 3).

5. *Describe the water body or watercourse affected by the discharge*.

   The affected water body is the VFA, a localized wedge-shaped perched aquifer of limited extent (see Attachment 3 Section 1). That portion of VFA aquifer subject to this variance petition is bound on the east by the Venada Arroyo, on the north and west it pinches out

on the underlying confining clay, and to the south it mingles with the Upper Santa Fe aquifer as the confining clay pinches out.

6. *Identify the regulation of the commission from which the variance is sought*

   Subsection F of 20.6.2.4103 NMAC. This variance is sought to correct a deed restriction.

7. *State in detail the extent to which the petitioner wishes to vary from the regulation*.

   This petition is to correct land use language in the deed restriction stipulated in WQCC 16-02-A. AAS of 250 mg/L for nitrate, 500 mg/L for chloride, and 3,500 mg/L total dissolved solids have already been approved per WQCC 16-02-A (Attachment 1).

8. *State why the petitioner believes that compliance with the regulation will impose an unreasonable burden upon his activity*.

   The recent change in zoning to high density residential in the Bernalillo Comprehensive Plan renders the property undevelopable with the deed restriction language of *"non-residential purposes."*

9. *State the period of time for which the variance is desired.*

   This proposed correction to the deed restriction and the approved AAS are requested in perpetuity to facilitate site closure and property development.

2.2 ALTERNATIVE ABATEMENT STANDARDS REQUIREMENTS

The demonstration requirements codified in Subpart E of 20.6.2.3103 NMAC include the following:

1. *Compliance with the abatement standard(s) is/are not feasible, by the maximum use of technology within the economic capability of the responsible person; OR there is no reasonable relationship between the economic and social costs and benefits (including attainment of the standard(s) set forth in Section 20.6.2.4103 NMAC) to be obtained*

AAS for Lot 5B have already been approved by WQCC 16-02-A. Development of the property with the deed restriction language of "non-residential purposes" renders the property not developable given the recent zoning change to high density residential in the Bernalillo Comprehensive Plan (Attachment 4).

2. *The proposed alternative abatement standard(s) is/are technically achievable and cost-benefit justifiable*

AAS for Lot 5B have been approved by WQCC 16-01-A. Correction of the deed restriction language to remove "non-residential purposes" will align the deed restriction with the current zoning, allow development, and is achievable.

3. *Compliance with the proposed alternative abatement standard(s) will not create a present or future hazard to public health or undue damage to property*

   AAS have been demonstrated to meet this standard (Attachment 3). Since the proposed development of Lot 5B is high density residential, connection to Town of Bernalillo water supply is required. Not only does the corrected deed restriction still prohibit construction of a water well in the VFA on Lot 5B, well water is not required for water supply. The current error in the deed restriction of "non-residential purposes" presently causes undue damage to property in that it cannot be developed.

3. SITE GEOLOGY AND HYDROLOGY

Numerous site-specific data have been collected from boreholes and monitoring wells for the site to develop the hydrogeologic setting. The site topography, geology, hydrogeology, and contaminant distribution are discussed in detail in Section 3 of the 2016 petition (Attachment 3).

4. ABATEMENT ACTIVITIES COMPLETED

Abatement activities completed at the site include in situ denitrification conducted by Faith Engineering in summer and fall of 2008, and groundwater pump-treat-discharge conducted by EA in 2015. Discussion of these abatement activities are provided in Section 4 of the 2016 petition (Attachment 3).

5. DEMONSTRATION OF AAS REQUIREMENTS

AAS requirements and the proposed AAS satisfy them are discussed in the follow sections.

5.1 ABATEMENT STANDARDS NOT TECHNICALLY ACHIEVABLE

It was demonstrated in the 2016 petition that the standards at 20.6.2.3103 NMAC, 10 mg/L nitrate, 250 mg/L chloride, and 1,000 mg/L TDS, were not technically achievable. AAS for Lot 5B were accordingly approved by WQCC 16-02-A. The AAS were independent of land use, and this petition has been prepared to correct the deed restriction language to remove "non-residential purposes" since the recent zoning change is to high density residential.

5.2 NO REASONABLE RELATIONSHIP BETWEEN ECONOMIC AND SOCIAL

COSTS

The correction in the deed restriction to remove "non-residential purposes" has no negative impact, and as regards economic and social benefit, the property will be developed in accordance with the Town of Bernalillo Comprehensive Plan.

The following points can be made regarding social impacts:

- A number of administrative controls will be in place to ensure the VFA is never used as a potable water supply, including:
    - Deed restriction prohibiting construction of a well in the VFA
    - Public water supply is in place and required by Bernalillo
    - Well Drillers rules prohibit completing a water well in impacted groundwater. Moreover, it is unfathomable that a water well would be completed in the VFA when the prolific Upper Santa Fe aquifer resides 20 feet below the VFA

5.3 PROPOSED AAS ARE TECHNICALLY ACHIEVABLE AND COST-BENEFIT JUSTIFIABLE

Correcting the deed restriction language is an administrative action with minimal cost that is achievable.

5.4 PROPOSED AAS WILL NOT CREATE A HAZARD TO PUBLIC HEALTH OR UNDUE DAMAGE TO PROPERTY

The public health concerns were fully developed in Section 7.4 of the 2016 petition (Attachment 3). Not correcting the deed restriction language to remove "non-residential purposes" causes undue damage to the property since it cannot be developed. Correcting the deed restriction will allow the property to be developed in accordance with the Town of Bernalillo Comprehensive Plan.

6. SUMMARY AND CONCLUSIONS

Alternative abatement standards (AAS) were approved for Lot 5B in 2016 by WCCC 16-02-A. The 2016 petition filing included a deed restriction prohibiting completion of a water supply well in the Valley Fill Aquifer (VFA) on Lot 5B. The deed restriction included the stipulation that Lot 5B would be developed for "non-residential purposes."

Vital purchased the property in 2022. Commercial development plans submitted by Vital to the Town of Bernalillo were rejected: the Town of Bernalillo notified Vital that a land use and zoning change to Lot 5B to high density residential was desired by the Town and proposed in its draft Comprehensive Plan. The zoning change to high density residential was complete with approval of the Comprehensive Plan on June 13, 2022.

On or about the time of the Comprehensive Plan approval, Vital prepared plans for high density residential development. The proposed apartment complex addresses several NMED development concerns, including:

- The plan minimizes surface area exposed to precipitation infiltration via parking lots
- Paved parking lots, curbs and gutters will control drainage and minimize infiltration
- Surface water will discharge to a lined (impermeable) detention basin with drain-out to the adjacent SSCAFCA drainage channel in accordance with SSCAFCA MS4 Permit (NMR04A000)
- Compliance with EPA 2022 Construction General Permit through use of BMPs during development and construction, and
- The complex will be connected to the Town of Bernalillo water supply, and completion of a water well on-site will never be needed

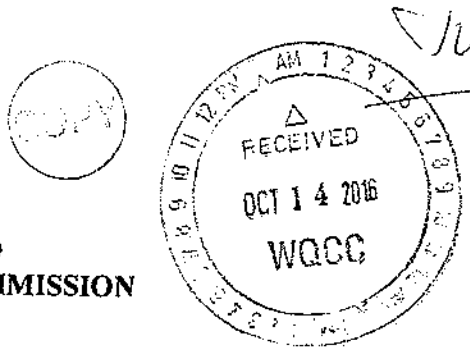
The proposed change in language of the deed restriction to eliminate "non-residential purposes" will free Lot 5B for high density residential in accordance with the recently approved Town of Bernalillo Comprehensive Plan.

7. REFERENCES

EA Engineering, Science and Technology, Inc., PBC (EA), 2016. Petition For Alternative Abatement Standards, Former Price's Valley Gold North Dairy, Bernalillo, Sandoval County, New Mexico. Prepared for: D&GP, Bernalillo, Sandoval County, New Mexico. Prepared by: EA Engineering, Science, and Technology, Inc., PBC. April.

ATTACHMENT 1

WQCC 16-01-A



STATE OF NEW MEXICO
WATER QUALITY CONTROL COMMISSION

IN THE MATTER OF THE PETITION FOR ALTERNATIVE ABATEMENT STANDARDS FORMER PRICE'S VALLEY GOLD NORTH DAIRY, BERNALILLO, SANDOVAL COUNTY, NEW MEXICO **WQCC 16-02(A)**

D&G Price Limited Partnership,

Petitioner

DECISION AND ORDER GRANTING
ALTERNATIVE ABATEMENT STANDARDS

This matter comes before the New Mexico Water Quality Control Commission ("WQCC" or "Commission") upon the Petition for Alternative Abatement Standards Former Price's Valley Gold North Dairy Bernalillo, Sandoval County, New Mexico ("Petition") filed by D&G Price Limited Partnership ("Petitioner") on April 28, 2016. A public hearing in this matter was held before the Commission on September 13, 2016. The Commission heard all evidence, deliberated, and voted to approve the Petition for the reasons set forth below.

FINDINGS OF FACT

I. Procedural Findings

1. Pursuant to the Commission's Regulations at 20.6.2 NMAC, the New Mexico Environment Department ("NMED" or "Department") issued ground water discharge permit DP-437 for Price's Valley Gold North Dairy ("PVGND") in 1987. Dairy operations ceased in 1998 and DP-437 was terminated in 2006. *See* Former Price's Valley Gold Dairy Bernalillo, Sandoval County, New Mexico Dairy's Statement of Intent to Present Technical Testimony ("PVGND Statement of Intent"), at 3; Testimony of Ali Furmall, NMED Exhibit 1, at 3.

2. On April 28, 2016, Petitioner submitted the Petition to the Commission requesting approval of alternative abatement standards for three contaminants within the Valley Fill Aquifer. *See* Petition at 5-6.

3. On May 10, 2016, the Department and Petitioner appeared before the Commission during its regular meeting to request a hearing on the Petition, with the Department indicating its intent to support the Petition. The Commission determined that a public hearing would be held on the Petition, and authorized the Chair to appoint a Hearing Officer to schedule the hearing and serve as Hearing Officer pursuant to 20.1.3.10.B NMAC. The Chair appointed Jeffrey N. Holappa, Administrative Law Judge for the New Mexico Environment Department, to serve as Hearing Officer on May 12, 2016.

4. On June 16, 2016, the Department filed its Response to the Petition, in accordance with 20.1.3.18.A(3) NMAC, recommending that the requested alternative abatement standards be granted.

5. On August 11, 2016, the Hearing Officer issued a Scheduling Order pursuant to 20.1.3.18.C(2) and 20.1.3.16.B(2) NMAC, setting the hearing for the Commission's regular meeting on September 13, 2016.

6. Public notice of the hearing on the Petition, which notice expressly included the proposal for well restrictions to be issued by the State Engineer, was published and provided to interested persons as required by 20.1.3.18.C(2) and 20.1.3.16.C NMAC.

7. The Department and Petitioner filed statements of intent to present technical testimony during the public hearing. No other party filed a statement of intent.

8. A public hearing was held before the Commission on September 13, 2016 in Santa Fe, New Mexico, in accordance with the applicable procedures set forth in 20.1.3

NMAC. At the hearing, all persons were provided a reasonable opportunity to present evidence to the Commission and to conduct cross examination.

II. Substantive Findings

A. Background

1. The former PVGND property is located on the east side of New Mexico Highway 528 in Bernalillo, New Mexico. The northern portion of the original dairy has been closed and is occupied by Walmart and other commercial businesses. *See* Petition, Figure 1. The portion of the property subject to the Petition, depicted as Lot 5-B in the Petition at Figure 2, is comprised of approximately 7.4 acres located north of Venada Arroyo and near the intersection of Spanish Bluff Street and Venada Plaza Drive, as shown on the Venada Plaza Plat, Section 36, Township 13N, Range 3E. *See* NMED Exhibit 1, at 2; Pre-Filed Testimony of Jay Snyder ("Snyder Testimony), at 3.

2. In connection with the closure of dairy operations on the Property, investigations and studies were performed which indicated that groundwater standards were exceeded and soil was contaminated on portions of the Property at the time of closure. *See* NMED Exhibit 1, at 3.

3. In 2006, DP-437 was terminated and investigation and remediation of the site has since proceeded under the WQCC's abatement regulations, sections 20.6.2.4000 through 20.5.2.4116 NMAC. Environmental site conditions have been fully characterized and the Stage 1 Abatement Plan has been completed. The site is currently in Stage 2 Abatement and is in Long Term Monitoring. *See id.*

4. Two interim abatement actions approved by the Department have been performed at the site: in situ denitrification was performed in 2008, and a groundwater

extraction and discharge system was operated from October 2013 until July 2015. These abatement actions failed to achieve standards, and monitoring wells in the Valley Fill Aquifer continue to show groundwater is impacted by nitrogen, chloride, and total dissolved solids ("TDS"). *See* NMED Exhibit 1, at 3; Synder Testimony at 5-4.

5. The Valley Fill Aquifer is a perched aquifer of limited extent that is hydrologically separate from the Upper Santa Fe Aquifer. While there is some communication between the VFA and the water flowing through the Rio Grande alluvial aquifer, it is not sufficient to move the contamination out of the VFA and into the river. Thus, the contaminated plume is essentially stranded within the VFA. *See* Tr. 58:18 – 63:25; Tr. 81:8.

6. New Mexico's relevant numerical ground water quality standards set forth in 20.6.2.3103 NMAC are: 10.0 mg/l for nitrate, 250.0 mg/l for chloride, and 1000.0 mg/l for TDS. *See* Snyder Testimony at 6.

7. Petitioner has proposed alternative abatement standards ("AAS") for the property of 220 mg/L for nitrate, 350 mg/L for chloride, and 3,310 mg/L for TDS. *See* NMED Exhibit 1, at 4, 10.

8. The AAS are requested in perpetuity to facilitate site closure and development, with institutional controls proposed, including a deed restriction and domestic well restrictions issued by the Office of the State Engineer, to ensure that the VFA is not used as a potable water supply in the future. *See* Petition at 7; Tr 48:20 – 51:10; Tr. 78:3 – 82:9, NMED Exhibit 1, at 7-9.

B. Process and Requirements

9. Alternative abatement standards fall within the Commission's authority to grant a variance from any requirement of the water quality regulations, pursuant to Section 74-6-4(H) of the Water Quality Act.

10. Section 20.6.2.4103.F(1) of the Commission's abatement regulations provides that a responsible person may submit a petition for approval of AAS any time after submission of a Stage 2 abatement plan.

11. Petitioner has completed the Stage 2 abatement process. *See* Snyder Testimony at 4; NMED Exhibit 1, at 3.

12. Pursuant to 20.6.2.4103.F(2), a petition for AAS must identify the water contaminants for which alternative standards are proposed.

13. Pursuant to 20.6.2.4103.F(2), a petition for AAS must identify the alternative standards proposed.

14. Pursuant to 20.6.2.4103.F(2), a petition for AAS must identify the three-dimensional body of water pollution for which approval is sought.

15. Pursuant to 20.6.2.4103.F(1)(a) NMAC, a petitioner for AAS must demonstrate that compliance with the abatement standards in 20.6.2.4103.A is not feasible, by the maximum use of technology within the economic capability of the responsible person, or that there is no reasonable relationship between the economic and social costs and benefits (including attainment of the standards set forth in Section 20.6.2.4103 NMAC) to be obtained.

16. Pursuant to 20.6.2.4103.F(1)(b) NMAC, a petitioner for AAS must demonstrate that the proposed alternative standards are technically achievable and cost-benefit justifiable.

17. Pursuant to 20.6.2.4103.F(1)(c) NMAC, a petitioner for AAS must demonstrate that compliance with the proposed alternative standards will not create a present or future hazard to public health or undue damage to property.

18. A "hazard to public health" exists when water which is used or is reasonably expected to be used in the future as a human drinking water supply exceeds at the time and place of such use, one or more of the numerical standards of Subsection A of 20.6.2.3103 NMAC, or the naturally occurring concentrations, whichever is higher, of any toxic pollutant affecting human health is present in the water. *See* 20.6.2.7.AA NMAC.

19. The Water Quality Act provides that the Commission may grant a variance from a regulation of the Commission for a period of time specified by the Commission. *See* NMSA 1978, § 74-6-4(H) (as amended through 2009).

20. Pursuant to 20.6.2.4103.F(2), a petitioner for AAS must specify the information required for variance petitions under Subsection 20.6.2.1210.A NMAC, including, among other requirements, the period of time for which the variance is requested.

C. Requirements Met – 20.6.2.4103.F(1)(a)

21. The Petitioner has demonstrated that compliance with the abatement standards in 20.6.2.4103.B is not feasible, pursuant to 20.6.2.4103.F(1)(a) NMAC. Several decades of natural attenuation and two engineered cleanup actions – in situ denitrification and groundwater pumping and discharge – have not reduced contaminant concentrations in groundwater in the VFA to the 20.6.2.3103 NMAC standards. After cessation of groundwater pumping, concentrations have reverted to pre-abatement levels in select wells in areas where the VFA thins and is difficult to hydraulically stress (due to low transmissivity related to minimal aquifer thickness). The VFA is stagnant and perched, and the lack of both

groundwater flow-through with attendant dispersion and intrinsic denitrification renders it very difficult to reduce concentrations. *See* NMED Exhibit 1, at 5-7; Snyder Testimony at 8-9.

22. Petitioner has also demonstrated that there is no reasonable relationship between the costs and benefits of continuing abatement and the social costs and benefits of doing so. Because of the nature of the Valley Fill Aquifer, as discussed previously, it is likely that no abatement effort at any cost will achieve Section 3103 standards. *See* NMED Exhibit 1, at 7; Snyder Testimony, at 10.

23. Petitioner has proposed the following institutional and government controls to prevent future use of the Valley Fill Aquifer as a source of potable water in order to mitigate social costs from the proposed AAS:

a. Petitioner will record a deed restriction in the Sandoval County real property records prohibiting construction of wells in the Valley Fill Aquifer on that portion subject to the AAS. The deed notice will provide owners, operators, prospective buyers, and others with notice and information regarding the groundwater condition in the Valley Fill Aquifer. The deep regional Upper Santa Fe Group Aquifer can still be used for water supply on the Property. A copy of the deed notice is included as Appendix G to the Petition.

b. The Department will petition the New Mexico State Engineer under State Engineer regulation 19.27.5.13.A to issue an Order prohibiting construction of a well in the affected water-bearing zone of the Valley Fill Aquifer, Lot 5-B and contiguous portions of Venada Plaza Drive. The State Engineer has the

required information and will issue the Order upon the Department's formal request.

See NMED Exhibit 1, at 7-8; NMED Exhibit 4.

24. Additionally, the following ordinances and rules further ensure that water from the Valley Fill Aquifer will not be used as source of potable water:

a. The Town of Bernalillo Water Use and Water Rate Ordinance, Ordinance 81, Article 4, Section 11 provides "At such time as a public water main becomes available within two hundred (200) feet of a property line served by a private water well, a direct connection shall be made to the public water system in compliance with this Ordinance, within 90 days." Water and sewer lines have been installed along existing streets in the Venada Plaza Development. *See* Petition, Appendix G. Thus, under the above ordinance, city water supply will be provided to all buildings on the Property.

b. The New Mexico State Engineer's regulations at 19.27.4 NMAC contain provisions that prevent construction of a water supply well in contaminated groundwater. *See* 19.27.4.29 NMAC (requiring wells to be constructed to prevent contamination, inter-aquifer exchange of water, flood water contamination of aquifer, and infiltration of surface water); 19.27.4.29.D NMAC (requiring that all wells be set back from potential sources of contamination in accordance with NMED regulations and other applicable ordinances and regulations); 19.27.4.30.A NMAC (requiring annular seals when necessary to prevent flow of contaminated or low quality water); 19.27.4.30.A(4) NMAC (requiring annulus sealing and proper screening in

wells which encounter non-potable, contaminated, or polluted water at any depth to prevent commingling of such water with any potable or uncontaminated water).

See NMED Exhibit 1, at 8-9.

25. With the above institutional and government controls and requirements in place to prevent ingestion of groundwater in the Valley Fill Aquifer, the proposed AAS will allow the Department to close out abatement so that the Property can be fully redeveloped. Without the AAS, the Property will remain idle. Therefore, the economic and social benefits of the proposed AAS (which include the above-described institutional and government controls), outweigh the benefits of continuing abatement which is unlikely to achieve 3103 standards. *See* Snyder Testimony, at 9-10.

D. Requirements Met – 20.6.2.4103.F(1)(b)

26. Petitioner has demonstrated that the proposed AAS have been achieved, and their approval will allow immediate submission of an Abatement Completion Report and termination of abatement. *See* NMED Exhibit 1, at 9.

27. The cost of submission of the Abatement Completion Report is negligible relative to what has been spent on abatement activities up to this point. *See id.*

28. Approval of the AAS will allow development to be completed on the Property, which presently lies in a partial state of development, thereby benefitting the Town of Bernalillo. *See id.*

29. Petitioner has therefore demonstrated that the proposed AAS are technically achievable and cost-benefit justifiable.

E. Requirements Met – 20.6.2.4103.F(1)(c)

30. The institutional and government controls outlined above will prevent human exposure to or ingestion of the nitrate impacted groundwater of the Valley Fill Aquifer, rendering the AAS protective of public health. *See* NMED Exhibit 1, at 9-10.

31. Chloride and TDS are not Section 3103.A contaminants and do not present a human health concern. *See* NMED Exhibit 1, at 10.

32. The proposed AAS will free the Property for completion of development, and thus will not cause undue harm thereto. *See id.*

33. Petitioner has therefore demonstrated that the proposed AAS will not create a hazard to public health or undue damage to property.

F. Requirements Met - Other

34. Perpetuity is a reasonable period of time for the variance in this case due to the technical infeasibility of conducting further abatement, the controls that will be in place to prevent hazards to public health, and the need to close out abatement so that the property can be economically developed. *See* Tr. 81:24 – 82:9; NMED Exhibit 1, at 7-9; Snyder Testimony, at 9-10.

35. Petitioner has met the requirements of 20.6.2.4103.F(2) by: identifying the information required by Subsection 20.6.2.1210.A; identifying the contaminants for which alternative standards are proposed; identifying the three-dimensional body of water pollution for which the alternative abatement standards are sought; and identifying the extent to which the standards of 20.6.2.4103 are now, and will be in the future, violated. *See* NMED Exhibit 1, at 10; Snyder Testimony, at 6-7.

Conclusions of Law

1. The Commission has jurisdiction to hear and decide this matter pursuant to NMSA 1978, § 74-6-4 (2009), 20.1.3 NMAC, and 20.6.2.4103 NMAC.

2. The Commission has jurisdiction over Petitioner and the former PVGND site pursuant to the Water Quality Act, NMSA 1978, §§ 74-6-1 through -17, 20.1.3 NMAC, and 20.6.2 NMAC.

3. The Commission may take action to accept, modify, or deny Petitioner's petition for alternative abatement standards.

4. Petitioner has met all applicable requirements for the granting of alternative abatement standards in 20.1.3, 20.6.2.1210.A, and 20.6.2.4103.F NMAC.

5. The numerical values proposed in the Petition for the proposed alternative abatement standards are supported by substantial evidence in the record.

6. Approval of the proposed alternative abatement standards in perpetuity is supported by substantial evidence in the record.

ORDER

Based upon these Findings of Fact and Conclusions of Law, a quorum of the Commission renders the following decision and order:

IT IS THEREFORE ORDERED that:

1. The Commission approves alternative abatement standards for the Valley Fill Aquifer as identified in NMED Exhibit 3.

2. The alternative abatement standards are as follows:

Contaminant	**Standard**
Nitrate	220 mg/l
Chloride	350 mg/l
TDS	3,310 mg/l

3. The alternative abatement standards are granted in perpetuity.

4. As soon as practicable upon issuance of this Order, Petitioner and the Department shall take the necessary steps to implement the institutional controls proposed in the Petition, namely, the deed restriction and the State Engineer well restriction order.

10-19-16

Date

Larry Dominguez, Chair

Water Quality Control Commission

CERTIFICATE OF SERVICE

I hereby certify that a copy of the **Decision and Order Granting Alternative Abatement Standards** was sent via the stated methods below to the following parties on October 14, 2016:

Hand Delivery and email:

Lara Katz, Office of General Counsel
New Mexico Environment Department
Post Office Box 5469
Santa Fe, New Mexico 87502
Email: Lara.Katz@state.nm.us
Counsel for the New Mexico Environment Department

Via First Class U.S. Mail and email:

Pete V. Domenici, Jr., Esq.
Domenici Law Firm, PC
320 Gold Avenue SW
Suite 1000
Albuquerque, New Mexico 87102
Email: pdomenici@domenicilaw.com
Counsel for Petitioner

Pam Castañeda
Pam Castañeda, Commission Administrator

ATTACHMENT 2

LOT 5B DEED RESTRICTION

2021038696 11/03/2021 01:45:19 PM
DEED Pg.1 of 2
Anne Brady-Romero Sandoval Cnty Clerk B: 424 P: 38696

STATE OF NEW MEXICO

COUNTY OF SANDOVAL

DEED RECORDATION COVENANT RESTRICTING AND PROHIBITING USE OF GROUNDWATER

THIS DEED RECORDATION is made this 6th day of May, 2016 by D&HGP, a resident of Sandoval County, New Mexico, a NM limited partnership ("Owner(s)") with its principal place of business located at PO Box 850, Bernalillo New Mexico 87004, states that it is the legal fee owner and holds title to the below listed real property in Bernalillo County, the State of New Mexico;

WHEREAS, the Owner(s) has, completed the groundwater abatement at the property pursuant to an Alternative Abatement Standard approved by the New Mexico Water quality Control Commission or has an Abatement Completion Report approved by the New Mexico Environment Department and the Groundwater may contain contaminants in excess numerical of ground water quality standards set forth in 20.6.2 NMAC and related statutes and regulations;

WHEREAS, the Property, located at Lot 5-B, Venada Plaza, as such lot is depicted and described on a replat entitled "Lots 5-A and 5-B, Venada Plaza", which replat was filed in the Office of the County Clerk of Sandoval County, NM, on January 2, 2008 in Volume 3, Folio 2875-A (Book 411 Page 252); and hereby incorporated into this covenant, shall be used only for non-residential purposes and no wells or devices shall be installed on the property to use groundwater and no use of the groundwater shall be allowed;

THEREFORE, the owner of the property prohibits, for itself and all future successors or assigns of the property, installation of wells or any other device to use groundwater and any use of the groundwater is completely prohibited. This restriction and prohibition shall be recorded with the property and is binding on future successors or assigns;

IN WITNESS WHEREOF, the said Owner(s) has caused this instrument to be signed by its authorized representative on the day and year first above written.

By: _____
Mary Lynn Price
General Partner

STATE OF
COUNTY OF

Subscribed and sworn to before me this _____ day of _____ by

_____.

_____
Notary Public

My commission expires:

_____

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California
County of San Diego

Subscribed and sworn to (or affirmed) before me on this 2nd day of Nov, 20 21 by Mary Lynn Price proved to me on the basis of satisfactory evidence to be the person(s) who appeared before me.

(Seal) Signature _____

KNCHEOL NOH
Notary Public - California
San Diego County
Commission # 2350447
My Comm. Expires Mar 8, 2025

KINCHEOL NOH
Notary Public - California
San Diego County
Commission # 2350447
My Comm. Expires Mar 8, 2025

ATTACHMENT 3

2016 PETITION FOR AAS

PETITION FOR ALTERNATIVE ABATEMENT STANDARDS FORMER PRICE'S VALLEY GOLD NORTH DAIRY BERNALILLO, SANDOVAL COUNTY, NEW MEXICO

Prepared for:
D&GP
Bernalillo, Sandoval County, New Mexico

Prepared by:
EA Engineering, Science,
and Technology, Inc., PBC
320 Gold Avenue SW, Suite 1300
Albuquerque, New Mexico 87102

April 2016

EA Project No. 1505701.02

EA Engineering, Science, & Technology, Inc., PBC
320 Gold Avenue SW, Suite 1300
Albuquerque, New Mexico 87102
Phone: (505) 224-9013

PETITION FOR ALTERNATIVE ABATEMENT STANDARDS FORMER PRICE'S VALLEY GOLD NORTH DAIRY BERNALILLO, SANDOVAL COUNTY, NEW MEXICO

Prepared for:

D&GP
Bernalillo, Sandoval County, New Mexico

Prepared by:

EA Engineering, Science,
and Technology, Inc., PBC
320 Gold Avenue SW, Suite 1300
Albuquerque, New Mexico

April 2016

4/25/16

Jay Snyder
Senior Hydrogeologist

Date

EA Project No. 1505701.02

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1. INTRODUCTION

This document has been prepared on behalf of D&G Price Limited Partnership (D&GP) to petition for Alternative Abatement Standards (AAS) for the former Price's Valley Gold North Dairy (PVGND) in Bernalillo County, New Mexico. PVGND has been in abatement under Title 20, Chapter 6, Part 2 of New Mexico Administrative Code (20.6.2 NMAC) since 1997. Concentrations of nitrate, chloride, and total dissolved solids (TDS) exceed Water Quality Control Commission (WQCC) standards in a few monitoring wells in the Valley Fill Aquifer (VFA).

The VFA is a wedge-shaped perched aquifer of limited extent which has gone through two abatement demonstrations: (1) an extensive field scale in situ denitrification demonstration, and (2) full-scale groundwater pumping with discharge to the Rio Rancho sanitary sewer. Both of these actions were approved by the Ground Water Quality Bureau (GWQB) of the New Mexico Environment Department. PVGND and its successor D&GP agreed to these recommended actions and implemented them under GWQB oversight. The second abatement action (groundwater pumping and discharge) was performed as part of a settlement agreement (Appendix A) between D&GP and NMED to address impacts to the VFA. Despite these interim abatement actions, groundwater concentrations in isolated areas of the VFA still exceed WQCC standards.

The settlement agreement allows for AAS petition in the event the groundwater pumping did not achieve WQCC standards. Since WQCC standards are still exceeded, AAS are sought that are both achievable and protective such that planned development of the property can proceed unencumbered by environmental concerns.

This report discusses the site location and history below. It is important to note that this AAS petition is for VFA groundwater only. Other actions have resulted in partial site closures and are discussed in "*Site History*." However, this discussion is for completeness and this petition does not include (1) Upper Santa Fe Aquifer groundwater impacts or (2) historical soil contamination.

The Upper Santa Fe Aquifer impacts were addressed by a technical infeasibility demonstration (EA 2012), submission of an Abatement Completion Report (EA 2013) with NMED concurrence (NMED 2013a), and partial abatement termination (NMED 2013b) after all Upper Santa Fe Aquifer monitoring wells were plugged and abandoned with the exception of one (MW-11R). Soil impacts were closed through the Voluntary Remediation Program (VRP), with a Certificate of Completion issued on November 28, 2006 (NMED 2006).

1.1 SITE LOCATION

The former PVGND is located on the east side of New Mexico Highway 528 in Bernalillo, New Mexico. It is bound on the south by Venada Arroyo. The northern portion of the original dairy has been closed and is occupied by Walmart and other commercial businesses (Figure 1). The portion of the former dairy subject to this petition is depicted on Figure 2, and encompasses Lot 5-B, Lot 5-A6, Parcel 1, and contiguous portions of Venada Plaza Drive.

1.2 SITE HISTORY

Originally Ridge Dairy, a 200-cow dairy, was operated on the site from 1960 to 1973 and was owned by Stanley and Ron Ridge. In June 1973, Mr. Dudley Price purchased the Dairy and renamed it Price's Valley Gold Dairy. Mr. Price increased the size of the dairy to 1,000 to 1,200 cows and subsequently purchased 183 acres to the south to accommodate the increased discharge from the enlarged facility.

In February 1986, the New Mexico Environmental Improvement Division notified the PVGND that they were required to have a discharge plan. The dairy submitted an application in May 1986, and it was approved in July 1987. The initial samples collected from groundwater monitoring well MW-1, near the Dairy's east lagoon, had existing nitrate concentrations of 43.8 milligram per liter (mg/l) in November 1986, 93.4 mg/l in February 1987 and 61.8 mg/l in December 1987 (average of 66 mg/l).

In June 1997, the New Mexico Environment Department (NMED) was advised that the Dairy was scheduled to be closed. As part of a site investigation conducted in June and August 1997, the NMED provided guidance on the type of Corrective Action Plan it would require under the discharge permit in connection with the closure of the Dairy. Initial work on the Corrective Action Plan began in August 1997.

The Dairy was closed in June 1998. Beginning in October 1997, Glorieta Geoscience, Inc. and Faith Engineering, Inc. conducted numerous investigations and studies and developed at least three corrective action and abatement plans. In the summer of 2008 a nutrient injection system was operated at the site. The objective of the injection system was to create a treatment wall within the aquifer which would de-nitrify the groundwater as it passed through the wall. In November 2008, METRIC Corporation was retained to conduct an independent evaluation of the historic investigation and remediation efforts at the site.

In October 2010 METRIC submitted an amended Stage 2 Abatement Plan (S2AP) which specified groundwater pumping with irrigated agriculture (alfalfa production) as the end water use and nitrate treatment. The 2010 S2AP modified the original S2AP submitted in 2006 which also relied on groundwater pumping as the principal component of the remedy. The public notice requirement had been satisfied with this initial S2AP submission.

The PVGND has been fully characterized, and the Stage 1 Abatement Plan completed. The site is currently in Stage 2 Abatement according to NMED records, and is in Long Term Monitoring (LTM). The LTM has created a sufficient time-series of groundwater monitoring data to support evaluation of contaminants trends with confidence.

Mr. Price closed the dairy in June 1998. The property was cleared of all structures by 2006 The Property, except for Lot 5-B, has been sold and redeveloped into various lots that contain commercial businesses, including Wal-Mart, Firestone Tires, a gasoline station, a strip mall and several fast food restaurants. There are undeveloped lots within the southeastern portion of the Property. D&G P retains ownership of Lot 5-B and only has limited use of the other surface area that is part of the Site.

In order to facilitate surface redevelopment, PVGND North Area (86.2 acres) entered the NMED VRP (#53061004) for nitrogen compounds in soil. The application was submitted on November 21, 2005, final eligibility granted June 28, 2006, Certificate of Completion issued November 28, 2006 and Covenants Not to Sue (CNS) issued on January 17, 2008 and April 9, 2008. These actions close out soil pathways and complete soil remedies.

Based on the entire record of LTM, relatively high nitrate concentration levels have been observed in VFA monitoring wells. However, the plume has remained relatively constant in size, as it tends to move to the west or east with high or low river flow conditions (METRIC Corp) and shift in hydraulic gradient. A summary of the groundwater contaminant concentrations since March 2011 is provided in Table 1.

With respect to the Upper Santa Fe Aquifer groundwater, on March 27, 2013, D&GP submitted an Abatement Completion Report to NMED that demonstrated abatement was complete for the entire original Abatement Plan Area, with the exception of two areas that remain in abatement because groundwater standards have not yet been achieved.

The two areas still in abatement were Lot 5-A9 (MW-11R) for impacts related to the Upper Santa Fe aquifer groundwater, and Lot 5-B, Lot 5-A6, Parcel 1, and contiguous portions of Venada Plaza Drive for impacts to VFA groundwater. The Abatement Completion Report stated that "D&GP will submit a work plan upon completion of a settlement agreement that addresses the remaining abatement activities." This work plan modified the October 2010 S2AP (METRIC 2010) which had never been implemented. Hence, the S2AP was implemented in accordance with the work plan for implementation of a groundwater extraction system with discharge to the City of Rio Rancho waste water treatment plant rather than field irrigation as specified in the METRIC plan (EA 2013).

Lot 5-B, Lot 5-A6, Parcel 1 and contiguous portions of Venada Plaza Drive overlie the VFA. A series of 3 waste water lagoons operated along Venada Arroyo, and lowest in elevation, or east lagoon, was centered over the VFA in Lot 5-B. This lagoon has a varied history of being initially unlined, then lined during later periods of operation. The volumes of waste water processes through the lagoons, and an estimate of the historic seepage from the lagoons, was not provided in Stage 1 Abatement Plan documents. As result, no means of estimating former discharge from the lagoons is currently available without speculation and assumption; however, since the lagoons ceased receiving waste water circa 1998, it is assumed that drainage out of the vadose zone is complete and sourcing of contaminants to the VFA is complete. According to Hawley (2009), Lot 5-B is underlain by 30 to 40 feet of lithofacies VAY, mapped as younger arroyo-valley alluvium consisting of pale- to light-brown sand, muddy sand, and pebble to cobble gravel associated with tributary streams to the Rio Grande. This soil is expected to drain well.

The east lagoon is the suspected source of groundwater contamination in the VFA as its footprint encompasses perhaps 40 percent of the VFA which directly underlies it. The perched nature of the VFA, along with observed gradient reversals based on river stage (METRIC 2010) has "stranded" the impacts on the confining layer, and dispersion via discharge out of the VFA to the

Rio Grande flood plain alluvium has not occurred. This isolation in concert with gradient reversals has resulted in highly variable contaminant concentrations in some areas. The S2AP intended to collect this isolated groundwater via pumping and discharge it to sanitary sewer. Although much contamination was removed, the variable trends returned once the hydraulic gradient reverted to the natural condition.

The groundwater pumping and discharge system was operated from October 2013 until July 2015 and a total of one pore volume (14,600,000 gallons), which was agreed upon with NMED concurrence, had been pumped from the VFA (EA 2015; Appendix B). In areas where the VFA thickness is sufficient to allow significant pumping rate, the plume in the VFA substantially cleaned up. However, to the north of the VFA where it pinches out and the aquifer is thin, the low pumping rates did not result in cleanup. The positive results from areas where sufficient aquifer thickness exists indicate the technology was appropriate. However, the inability to pump sufficient water in an efficient manner where the aquifer thins indicates a technical infeasibility to achieve WQCC standards with groundwater pumping in areas of insufficient aquifer thickness.

The site is currently being monitored, and the most recent quarterly groundwater monitoring report (EA 2016) is provided in Appendix C. This report includes summary tables of groundwater monitoring data for the VFA going back as far 1998 for MW-1A, a potentiometric surface map for December 2015, plume maps for nitrate chloride, and TDS for December 2015, and hydrographs and trend plots for contaminants of concern.

2. AAS PETITION REQUIREMENTS

This petition for AAS at the former PVGND must address the requirements of 20.6.2 NMAC Section 1210 *Variance Petitions* and Section 4103.F *Alternative Abatement Standards*. The responses to these requirements are discussed below.

2.1 VARIANCE PETITION REQUIREMENTS

Section 1210.A requires that *"Any person seeking a variance pursuant to Section 74-6-4 (G) NMSA 1978, shall do so by filing a written petition with the commission."*
Petitions shall:

1. *State the petitioner's name and address;*

   D&G Price Limited Partnership
   PO Box 850
   Bernalillo New Mexico 87004

2. *State the date of the petition;*

   February 20, 2016.

3. *Describe the facility or activity for which the variance is sought;*

   Valley Fill Aquifer water quality standards at the former Price's Valley Gold North Dairy, Bernalillo County, New Mexico.

4. *State the address or description of the property upon which the facility is located;*

   The former Price's Valley Gold North Dairy (PVGND) is located on the east side of New Mexico Highway 528 in Bernalillo, New Mexico. The parcel of land where VFA is impacted is legally described as Lot 5-B, Lot 5-A6, Parcel 1, and contiguous portions of Venada Plaza Drive for impacts to VFA groundwater.

5. *Describe the water body or watercourse affected by the discharge;*

   The affected water body is the VFA, a localized wedge-shaped perched aquifer of limited extent. That portion of VFA aquifer subject to this variance petition is bound on the east by the Venada Arroyo, on the north and west it pinches out on the underlying confining clay, and to the south it mingles with the Upper Santa Fe aquifer as the confining clay pinches out. In plan-view, the VFA nitrate impacts are shown on Figure 2. In cross section, the VFA is depicted as the perched water levels along sections G-G' and H-H' at match points with J-J'. To the north, at the match points of G-G' and H-H' with D-D', the VFA is absent and the water levels are in the Upper Santa Fe aquifer.

6. *Identify the regulation of the commission from which the variance is sought;*

Sections A and B of 20.6.2.3103 NMAC as provided in Subsection F of 20.6.2.4103 NMAC.

7. *State in detail the extent to which the petitioner wishes to vary from the regulation;*

   The Alternative Abatement Standards sought under this petition are 220 mg/L for nitrate, 350 mg/L for chloride, and 3,310 mg/L total dissolved solids.

8. *State why the petitioner believes that compliance with the regulation will impose an unreasonable burden upon his activity;*

   Both of the interim abatement actions performed to date—in situ denitrification and groundwater pumping—have failed to achieve standards. The VFA is wedged shaped (Hawley 201, and to the north and west where it pinches out, the ability to hydraulically capture the thin aquifer is technically infeasible.

9. *State the period of time for which the variance is desired.*

   The AAS are requested in perpetuity to facilitate site closure and property development.

2.2 ALTERNATIVE ABATEMENT STANDARDS REQUIREMENTS

The demonstration requirements codified in Subpart F of 20.6.2.3103 NMAC include the following:

1. *Compliance with the abatement standard(s) is/are not feasible, by the maximum use of technology within the economic capability of the responsible person; OR there is no reasonable relationship between the economic and social costs and benefits (including attainment of the standard(s) set forth in Section 20.6.2.4103 NMAC) to be obtained;*

   D&GP will demonstrate that compliance with the abatement standards is not technically feasible (Section 7.1) and there is no reasonable relationship between the costs and benefits (Section 7.2).

2. *The proposed alternative abatement standard(s) is/are technically achievable and cost-benefit justifiable; and*

   The AAS proposed will be based on the most recent 8 quarters of groundwater monitoring, thereby ensuring they are achievable.

3. *Compliance with the proposed alternative abatement standard(s) will not create a present or future hazard to public health or undue damage to property.*

   The proposed AAS will be shown to not create a present or future hazard through administrative controls, hydrogeological considerations, and evidence from operation of

the groundwater pumping system. The plume is stable and stagnant in the perched aquifer. After pumping ceased, the plume reverted immediately to its fluctuating east to west, then west to east, groundwater flow pattern which results in very little net migration of contaminants. It will be shown that no undue damage to property will result from the AAS.

3. SITE GEOLOGY AND HYDROLOGY

Numerous site-specific data have been collected from boreholes and monitoring wells for the site to develop the hydrogeologic setting. The site specific geology was in turn integrated into the regional geology and hydrogeology. The Stage 2 Abatement Plan completed by METRIC Corporation (2010) developed the geology and hydrogeology for the site as presented below.

3.1 TOPOGRAPHY

The property is located from approximately 5,150 to 5,050 feet above mean sea level (amsl) with significant land slope toward the southeast (Figure 1). General storm water flow at the former Dairy is from high ground on the northwest downhill toward the low lying areas to the southeast. The Rio Grande is located approximately 4,000 feet east of the Dairy.

3.2 SITE SPECIFIC GEOLOGY

The site specific geology was developed Dr. John W. Hawley, PhD (Hawley Geomatters 2009). METRIC Corporation retained Hawley Geomatters to develop a geologic model of the dairy site. Dr. Hawley was furnished with the available soil boring and monitoring well logs for the site. He was also furnished with historic reports, historic water level data and historic water quality data. The Hawley report is appended the modified S2AP (METRIC 2010; Appendix D).

The Hawley report provides a detailed discussion of all geologic units present, including those units present in the vadose zone. The units and associations germane to the VAF are discussed below.

3.3 HYDROGEOLOGY

Evaluation of the site geology and historic water level data indicates that there are two distinct aquifers at the site: the USF aquifer and the VF aquifer. Recharge to the older USF aquifer probably occurs along its subcrop beneath the older valley fill (VAO) and Los Durans Gravel (TAd) to the west and north of the site. Groundwater flow in the USF aquifer is to the southeast as depicted in Figure 2, which represents conditions in June 2010. Hydrographs of the USF aquifer monitoring wells (Figure 3) indicate water levels are stable. Depth to water within the USF aquifer is approximately 60 to 90 feet below ground surface.

> The younger VFA consists of the combined Venada Arroyo Fill (VAY) and the Rio Grande Valley fill (RG). The two units are hydraulically connected on the east, and exhibit an average water level elevation of about 5040. The VFA is hydraulically separated from USF aquifer by “red clay” in the USF. The presence of the “red clay” in the USF aquifer explains the approximate 20 ft. water level difference between the VFA and the USF aquifer. In plan-view, the VFA nitrate impacts are shown on Figure 2. In cross section, the VFA is depicted as the perched water levels along sections G-G’ and H-H’ at match points with J-J’. To the north, at the match points of G-G’ and H-H’ with D-D’, the VFA is absent and the water levels are in the Upper Santa Fe aquifer. The relation of VAY to USF at these locations is shown in G-G’ and H-H’.

Regional perspective suggests groundwater flow direction in the VFA should be toward the southeast, subparallel to the Rio Grande. However, The VFA is perched and limited in extent to the north and west, thinning and pinching out altogether. Moreover, on the east, the VFA is in communication with the river bed aquifer. So when water levels in the river bed aquifer rise, they do so in the VFA, causing groundwater to flow to the west. Conversely, when water levels in the river bed aquifer fall, groundwater flows to the east in the VFA. METRIC (2010) referred to this phenomenon as "estuary-like" with seasonal gradient reversals versus tidally influenced reversals. The net result from contaminant transport perspective that solute moves to and fro, but does not travel significantly to the south or south and out of the VFA.

Recharge to the VFA aquifer is principally from exchange with the river bed aquifer. However, the Venada Arroyo bounds the site on the south, and is unlined and certainly infiltrates water during periods of surface water flow.

3.4 DISTRIBUTION OF CONTAMINANTS

The sources of contaminants to the VFA as well their occurrence in the VFA are discussed below.

3.4.1 Contaminant Sources

The principal contaminant source for the VFA was a former process lagoon which was situated above the VFA. However, documents obtained in 2011 indicate unauthorized discharges from the City of Rio Ranch's Lift Station 15 to the unlined Venada Arroyo have occurred. These sources are discussed below.

3.4.1.1 Former Dairy Processes

The former dairy process areas are depicted on Figure 1 of the S2AP (METRIC 2010; Appendix D). The lower (and largest) process water lagoon sat directly over the VFA as shown on Figure 6 of the S2AP. It is former discharges from this lagoon that is suspected of being the principal source of *dairy process related* impacts to the VFA. This lagoon no longer exists and the area has been graded for development.

3.4.1.2 Unauthorized Discharges to Venada Arroyo

Unauthorized discharges of raw sewage from Rio Rancho Lift Station 15 have occurred in the past and still occur from time to time. Documents requested and received from the City of Rio Rancho in 2011 indicate that at least 25 discharges of raw sewage have occurred since the mid 1990's (Appendix E). The bottom of the Venada Arroyo is only separated from the VFA by 20 to 30 feet of lithofacies VAY, mapped as younger arroyo-valley alluvium consisting of pale- to light-brown sand, muddy sand, and pebble to cobble gravel associated with tributary streams to the Rio Grande (Hawley 2009). The VAY contains very little fine grained sediments that may impede infiltration and discharge of these spills to the VFA. Therefore, interference from these unassessed discharges may be adversely affecting groundwater quality, potentially resulting in

variability in water quality which affects the feasibility of achieving standards through abatement.

3.4.2 Nature and Extent of Current Groundwater Impacts

The current extent of groundwater impacts by nitrogen, chloride and TDS are discussed below. MW-21 is located in a downgradient position and was not sampled in December 2015 because it could not be found. However, MW-21 has never exceeded standards, and in 2013 contained <0.1 mg/L nitrate, 94 mg/L chloride, and 768 mg/L TDS. MW-18, which flanks the VFA plume on the west, has been reasonably stable: it has never exceeded standard for chloride or TDS, and twice it elevated to 10 mg/L nitrate, but is generally below standard. On the north, MW-13RR has been below standards since 2011. These perimeter well results indicate plume stability, and it appears that with the gradient reversals that occur (east to west, then west to east) in response to interaction with water levels in the river bed aquifer, the net migration is very little, and the plume stagnant.

3.4.2.1 Nitrate Plume

The nitrate plume above 10 mg/L is shown in Figure 4 of the most recent monitoring report for results from December 2015 (EA 2016; Appendix B). The nitrate impacts above standard are limited to an area of about one acre in the vicinity of the groundwater extraction well field (wells EX-1 though EX-4). Included are monitoring wells MW-19R, MW-20R and MW-23. Note that MW-11R is completed in the Upper Santa Fe aquifer and is not included in the VFA plume.

3.4.2.2 Chloride Plume

Chloride is only detected at standard (250 mg/L) in MW-19R (Figure 3, EA 2016); however, elevated chloride is observed in the same general footprint as the nitrate plume and is indicative of the impacted zone of VFA.

3.4.2.3 Total Dissolved Solids Plume

Total dissolved solids plume above the standard of 1,000 mg/L is defined by MW-19R, MW-23 and MW-1A, and spans a similar footprint as described for the nitrate and chloride plumes. The TDS plume is shown on Figure 5 of the most recent quarterly monitoring report (EA 2016).

4. ABATEMENT ACTIVITIES COMPLETED

Abatement activities completed at the site include in situ denitrification conducted by Faith Engineering in summer and fall of 2008.

4.1 IN SITU DENITRIFICATION

Details regarding the in situ denitrification abatement are provided in *"Amended Stage II Abatement Plan at the Former Price's Bernalillo Dairy"* (Faith Engineering 2008; Appendix F). Figure 2 of this report shows the alignment of nine total injection wells spanning from just upgradient and west of MW-20R on the south to just east of MW-19R on the north. The line of injection provides a subsurface treatment barrier to denitrify groundwater as is passes to the southeast. Sodium acetate and later sugar were injected, along with tri-sodium phosphate to provide nutrients. The total volume of amendment is was reportedly over 1.5 million gallons (John Price, personal communication 2016).

4.2 GROUNDWATER PUMPING AND DISCHARGE

D&GP recently completed pumping one pore volume (14,600,000 gallons) of groundwater (EA 2015) in accordance with the settlement agreement (Appendix A). This resulted in reduced concentrations and a somewhat reduced aerial extent of the solute plume (EA 2016). However, rebound is already appearing in MW-19R and MW-23 (in the northern portion of the plume where the VFA thins and vanishes, and where pumping rates were low. A complete accounting of the groundwater pumping and discharge abatement activity is provided in the final *Quarterly Groundwater Monitoring, and System Operation* Report (EA 2015; Appendix B).

5. TECHNICAL INFEASIBILITY EVALUATION

5.1 EVALUATION OF CLEANUP TECHNOLOGIES FOR NITRATE

5.1.1 In Situ Denitrification

Based on the alignment of injection wells, two downgradient wells that would be useful in evaluating the effectiveness of the test are MW-1A and MW-20R. Concentration trend graphs for these wells are provided in the most recent quarterly monitoring report (EA 2016; Appendix B). Inspection of the trend graphs indicate that after the injection circa 2008, concentrations in these two wells declined. However, between 2010 and 2012 rebound is clearly observed in MW-20R.

The use of in situ denitrification for cleanup of the plume is not feasible, both on economic and technical grounds, for the following reasons:

- The line of injection wells requires that all groundwater pass through the treatment zone in order to be denitrified; however, we know from decades of well gauging that groundwater in the VFA reverses gradient typically from east to west and vice versa based on communication with water levels in river bed alluvium and is therefore somewhat stagnant with respect to ultimate discharge point. This phenomenon was described by METRIC as "in a manner analogous to an estuary." Therefore, downgradient is a transient concept, groundwater flows to and fro, and reliance on groundwater passing through a treatment barrier in a downgradient sense will not result in cleanup in a timely manner;

- This technology does nothing to treat chloride and TDS, so that even if nitrate vanished, AAS for chloride and TDS would be required in order to terminate abatement and close the site;

- The addition of sodium acetate and sucrose will cause the groundwater to become reducing, or anaerobic, in nature. This has the potential to cause dissolution of metals subject to oxidation and reduction reactions: arsenic, iron, and manganese. Robust application of this technology may reduce nitrate only to create an alternate groundwater problem and the site would continue in abatement indefinitely.

5.1.2 Groundwater Pump and Discharge

D&GP just completed pumping one pore volume of groundwater (EA 2015) in accordance with the settlement agreement (Appendix A). The pumped groundwater was discharged to the Rio Rancho sanitary sewer as per agreement between Rio Rancho and D&GP to discharge one pore volume (44 acre feet) of groundwater. This resulted in reduced concentrations and a somewhat reduced aerial extent of the solute plume (EA 2016; Appendix C). However, rebound is already appearing in MW-19R and MW-23 (in the northern portion of the plume where the VFA thins and vanishes, and where pumping rates were low.

The results of post-pumping monitoring indicate that since the hydraulic stress of pumping in the line of EW-1 through EW-4 was ceased, the hydraulic gradients reverted to the east to west, and presumably west to east, "estuary" behavior described by METRIC (2010). This aquifer behavior effectively "strands" impacted groundwater from significant movement for hydraulic capture. As soon as the gradient reverted to natural conditions, nitrate advected into MW-19R and MW-23 and elevated to considerably above standard for nitrate, and to levels that are representative of the plume before cleanup attempts.

5.1.3 Reverse Osmosis

The ability to directly discharge pumped groundwater to the Rio Rancho sanitary sewer was a temporary arrangement that facilitated pumping the agreed upon pore volume of groundwater. Pumping groundwater over a considerable period would require treatment. Since chloride and TDS would need to be removed, treatment by reverse osmosis (RO) would be required.

RO is a proven desalinization technology that can remove salts from water. It is, however, an expensive technology that requires high pressure pumps to force water across a selective semipermeable membrane. In reverse osmosis, an applied pressure is used to overcome osmotic pressure, which can remove many types of molecules and ions from solutions. The result is that the solute containing undesirable ions is retained on the pressurized side of the membrane, and pure water is allowed to pass to the other side. To be "selective", this membrane should not allow ions to be removed through the pores. The "solute" retained is referred to as "concentrate" or "waste stream" and is very high in TDS.

When sea water is being treated by RO, the concentrate may be returned to the sea. However, Howe (2004) points out the problems with disposal of concentrate in inland areas, since it is toxic to plants and renders fresh water saline, creating great regulatory challenges. For the reasons of high energy expenditure, and no known means of economical disposal of this waste stream, treatment by RO is considered not economically feasible.

5.1.4 Monitored Natural Attenuation

The VFA has been in some form of groundwater monitoring for a couple decades now, and the rebound observed MW-19R and MW23 are to levels indicative of the plume prior to the in situ injection test and the groundwater pumping of one pore volume. In other words, neither natural processes nor engineered approaches have significantly reduced nitrate concentrations in the stagnant and stranded VFA groundwater. Nitrate can be recalcitrant in aerobic groundwater, and in the VFA this appears to be the case (see concentration trend graphs in EA 2016; Appendix C). So MNA does not look viable, future concentrations can be reasonable predicted as significantly over standard base on past trend data, and long-term MNA monitoring is likely academic.

5.2 EVALUATION OF CLEANUP TECHNOLOGIES FOR INORGANIC CONTAMINANTS

The technology available for significant chloride and TDS reduction is groundwater extraction. Groundwater extraction via pumping and discharge was just completed in accordance with the

settlement agreement, and the effect was not permanent. Contaminant concentrations rebounded as soon as the VFA reverted to natural gradients.

Neither chloride nor TDS will significantly reduce over time via natural attenuation (MNA) processes in the stagnant VFA groundwater. If anything, inducing reducing conditions via acetate and sucrose injection will exacerbate the inorganic constituent concentrations. Ex situ treatment of pumped groundwater via reverse osmosis is cost prohibitive, and technically infeasible due to lack of disposal options for "concentrate."

5.3 ENGINEERING AND ADMINISTRATIVE CONTROLS

There are a number of administrative controls that can be used to protect human health and the environment, prevent exposures, eliminate the use of the affected groundwater for any means, and ensure there is no undue harm to property. These include connection to public water supply, deed restriction prohibiting completion of a water well in the affected stratum, and existing well completion rules promulgated by the Office of State Engineer. These controls are discussed in detail below.

5.3.1 Requirement to Connect to Public Water Supply

In accordance with Town of Bernalillo Water Use and Water Rate Ordinance, Ordinance 81, Article 4, Section 11, "At such time as public water main becomes available within two hundred (200) feet of a property line served by a private water well, a direct connection shall be made to the public water system in compliance with this Ordinance, within 90 days." Water and sewer lines have been install along existing streets within the (Venada Plaza) Development (Appendix G). Because of this requirement, city water supply will be provided to all buildings. Since the property in question is zoned commercial, residential exposure pathways are not complete. Accordingly, the risk of prolonged exposure by ingestion of water to newborns, toddlers and young children is negligible.

5.3.2 Deed Restriction on Well Construction

D&GP will file a deed notice in the real property records of the Bernalillo County where the property is located. The deed notice will provide owners, operators, prospective buyers and others notice and information regarding the groundwater condition in the VFA. The deep regional aquifer, USF aquifer, will still be able to be used for water supply, so there is no unfavorable impact to water availability on the property. A copy of the deed notice is included in Appendix H.

5.3.3 Completion of Well in Contaminated Groundwater Prohibition

Title 20, Chapter 27, Part 4 NMAC *Well Driller Licensing; Construction, Repair and Plugging of Wells* provide rules to prevent construction of a water supply in impacted groundwater. Specifically,

> *"All wells shall be constructed to prevent contamination, to prevent inter-aquifer exchange of water, to prevent flood waters from contaminating the aquifer, and to prevent infiltration of surface water."* (19.27.4.29 NMAC)
> ***"****All wells shall be set back a minimum of fifty (50) feet from an existing well of other ownership, unless a variance has been granted by the state engineer. All wells shall be set back from potential sources of contamination in accordance with New Mexico environment department regulations and other applicable ordinances or regulations."* (19.27.4.29.D NMAC)
>
> *"When necessary, annular seals will be required to prevent inter-aquifer exchange of water, to prevent the loss of hydraulic head between geologic zones, and to prevent the flow of contaminated or low quality water."* (19.27.4.30.A NMAC)
>
> *"Wells which encounter non-potable, contaminated, or polluted water at any depth shall have the well annulus sealed and the well properly screened to prevent the commingling of the undesirable water with any potable or uncontaminated water."* (19.27.4.30.A.4 NMAC).

5.3.4 State Engineer Order to Prohibit Well

Finally, D&GP will request NMED GWQB petition the OSE to draft a State Engineer Order to prohibit construction of a well in the affected water bearing zone. The order will be established in accordance with 19.27.5.13.A. Rejection of Application, which states:

> *"The state engineer may reject an application for a 72-12-1.1 domestic well permit when the proposed 72-12-1.1 domestic well is to be located in an area where a restriction on the use of water or the drilling of new wells has been imposed by a court. The state engineer may reject an application for a 72-12-1.1 domestic well permit when the proposed 72-12-1.1 domestic well is to be located in an area of water quality concern where a prohibition on or a recommendation against the drilling of new wells has been established by a government entity."*

In this matter, the "area where a restriction on the use of water or the drilling of new wells" shall be the VFA in Lot 5-B and contiguous portions of Venada Plaza Drive. Lot 5-A6 and Parcel 1 are below standards based on MW-13-RR. The government entity establishing the prohibition is NMED. D&GP will provide NMED the necessary documents to support and effect the prohibition and shall not contest its establishment.

In summary, the well construction requirements, deed recordation to document the contaminated groundwater stratum, and Office of State Engineer order will prevent completion of water wells in the VFA, thereby preventing withdrawal of groundwater and potential exposure.

6. PROPOSED ALTERNATIVE ABATEMENT STANDARDS

The proposed AAS are intended to capture the last 8 quarters of groundwater monitoring maximum levels in the VFA, and concentrations will therefore not exceed AAS. This will allow immediate termination of abatement, timely closure of the site, and facilitate redevelopment. The Village of Bernalillo has expressed concern regarding development of the parcel in question in its current regulatory state. With this goal in mind, the proposed standards for VFA groundwater are:

- Nitrate 220 mg/L
- Chloride 350 mg/L
- Total Dissolved Solids 3,310 mg/L

Once these AAS are established, D&GP will file an Abatement Completion Report in accordance with 20.6.2 NMAC Section 4112.A.. This will allow the Secretary to notify D&GP that abatement is terminated in accordance with Section 4112.B. The property will then be unencumbered for continued development.

7. DEMONSTRATION OF AAS REQUIREMENTS

AAS requirements and the proposed AAS satisfy them are discussed in the follow sections.

7.1 ABATEMENT STANDARDS NOT TECHNICALLY ACHIEVABLE

It has been demonstrated herein that the standards at 20.6.2.3103 NMAC, 10 mg/L nitrate, 250 mg/L chloride, and 1,000 mg/L TDS, are not technically achievable. Several decades of natural attenuation and two engineered cleanup actions (in situ denitrification and groundwater pumping and discharge) have not restored groundwater in the VFA to Section 3103 levels. In fact, post groundwater pumping rebound concentrations in select wells in areas where the VFA thins and is difficult to hydraulically stress (due to low transmissivity related to minimal aquifer thickness) have reverted to pre-abatement levels. The VFA is stagnant and perched, and the lack of both (1) groundwater flow-through with attendant dispersion and (2) intrinsic denitrification, renders it very difficult to reduce concentrations despite aggressive efforts.

Compounding the ability to achieve standards is the fact that Lift Station 15 has had and still has unauthorized discharges of raw sewage to the unlined Venada Arroyo. These discharges, which contain the same constituents as the former dairy waste (nitrate, chloride and TDS) are beyond the control and capacity of D&GP to abate. Until these unauthorized discharges cease completely, the VFA will not clean up to Section 3103 standards.

7.2 NO REASONABLE RELATIONSHIP BETWEEN ECONOMIC AND SOCIAL COSTS

There is no reasonable relationship between continuing abatement and social costs. In fact, continuing abatement has an adverse social cost as the land sit idle rather than completion of development. The following points can be made regarding social impacts:

- A number of administrative controls will be in place to ensure the VFA is never used as a potable water supply, including:
    - Deed restriction prohibiting construction of a well in the VFA;
    - Public water supply is in place and required by Bernalillo;
    - Well Drillers rules prohibit completing a water well in impacted groundwater. Moreover, it is unfathomable that a water well would be completed in the VFA when the prolific Upper Santa Fe aquifer resides 20 feet below the VFA;
    - State Engineer Order will be placed that prohibits construction of a water well on the property;
- Because of the nature of the VFA, it is apparent that no effort and no cost are likely to achieve to the standards at Section 3103. Therefore, an arrangement whereby the administrative controls are fully in place and fully documented, attached to the title to

the property so that use of and exposure to VFA is prevented, is both protective of human health and beneficial to intended future land use.

- The AAS will allow the NMED to "clear" the property and administratively close out abatement, freeing the property for final development. This is considered a "positive" social impact.

- Conversely, failure to approve the AAS will result in the property remaining in a state of partial development as groundwater monitoring continues *ad infinitum*. The technical infeasibility of an engineered cleanup approach to achieve Section 3103 standards has been demonstrated via two different abatement activities.

7.3 PROPOSED AAS ARE TECHNICALLY ACHIEVABLE AND COST-BENEFIT JUSTIFIABLE

The proposed AAS have already been achieved and will result in immediate submission of an Abatement Completion Report and termination of abatement. The cost for this activity is nominal relative to the money spent on the two abatement activities. The ability to complete development of this parcel, which presently lies idle in a partial state of development, is beneficial to the Town of Bernalillo.

The cost-benefit evaluation discussed herein is based on that portion of the VFA in Lot 5-B and contiguous portions of Venada Plaza Drive. Lot 5-A6 and Parcel 1 are below standards based on MW-13-RR and will not require AAS.

Cost of Remediation

To date, $1,400,000 has been expended on abatement activities related to the VFA assessment and cleanup. Because of the technical impracticability of cleanup discussed in Section 5, for the purpose of valuation a continued cleanup period of 20 years is established for cost basis. The recently completed pumping and discharging impacted groundwater cost $50,000 for installation and $55,000 per year consulting, maintenance, sampling and utilities. These costs are captured in the $1,400,000. However, operating and maintaining the system for an additional 20 years at $55,000 per year is $1,100,000. This brings the total cost of abatement for an additional 20 years (assuming standards achieved in 20 years … a goal that may not be attainable) to $1,400,000 already expended plus $1,100,000 … a total of $2,500,000.

Worth of Property

The assessed value of Lot 5-B is $1,276,344. The current cost of remediation exceeds the appraised property value by 15 percent and the projected cost in 2036 exceeds the property valuation by 50 percent.

Although the property is valued at $1,276,344, it has not sold because of the environmental condition. Since the property cannot be sold, its current market worth is arguably zero. Therefore, granting the requested AAS may at least restore the property worth to a fraction of existing abatement costs expended.

Worth of Affected Groundwater

No water right exists for the affected VFA groundwater. The property is zoned commercial, so domestic use is not foreseeable. The city provides water, and requires that new construction connect to the provided water. Therefore, no reasonable worth of groundwater exists even if it were restored to Section 3103 standards. According, granting the proposed AAS will not adversely affect the worth of ground water.

7.4 PROPOSED AAS WILL NOT CREATE A HAZARD TO PUBLIC HEALTH OR UNDUE DAMAGE TO PROPERTY

Exposure to nitrate impacted groundwater will be prevented by the administrative controls outlined in Section 5.3.3. The administrative controls will eliminate the potential human exposure pathways and render the solution protective of public health. Chloride and TDS are not human health concerns by rule since they are not Section 3103.A. contaminants. Finally, freeing the property so that development can be completed will enhance the property, cause undue harm thereto.

8. SUMMARY AND CONCLUSIONS

The PVGND closed in June 1998. Abatement Plan activities were initiated by Glorieta Geosciences, Inc. and Faith Engineering in October 1997. The abatement activities included soil and groundwater testing to map the nature and extent of sources and impacts to groundwater contamination. Two aquifers were identified at the site: the regional Upper Santa Fe Aquifer, and the perched Valley Fill Aquifer. The Upper Santa Fe Aquifer has been closed with the exception of an isolated area near MW-11R. The VFA remains in abatement, and two attempts at abatement have been undertaken unsuccessfully. The VFA is perched on the Upper Santa Fe Aquifer, and is separated by a confining clay layer.

Development of the property began after this time, and in order to facilitate the development, soil pathways were closed via the Voluntary Remediation Program (VRP #53061004) with a Certificate of Completion issued November 28, 2006.

Following soil pathway closure, abatement of groundwater impacts was initiated. Injection of acetate, sucrose, and nutrients was conducted in 2008, and groundwater pumping and discharge to Rio Rancho sanitary sewer was conducted from October 2013 through July 2015. A total of one pore volume of groundwater was extracted and discharged.

The results of the injection of groundwater amendments showed initial success as measured in select downgradient monitoring wells; however, Section 3103 standards were not achieved, and after two years significant rebound to well above standards was observed. In concept, the injection technology relied on groundwater movement to the southeast, through the line of injection wells. However, the groundwater flow oscillates between east to west, then back to west to east, depending on the water levels in the river bed aquifer. This renders the VFA groundwater mostly stagnant, and not flowing in a direction (southeast and subparallel to the Rio Grande) as predicted by regional consideration. Hence, affected groundwater did not flow through the line of injection wells, and was not treated for nitrate. Moreover, the injection technology provides no means of treatment for chloride and TDS. Another matter apparently not considered at the time the injections were performed is that the injection of acetate and sucrose can lower the dissolved oxygen in the VFA, and dissolve deleterious metals such as arsenic, manganese, and iron. All of these metals are regulated by NMED, and so cleaning up the nitrate may have resulted in a plume with additional regulated constituents above standards. On these grounds, the injection technology is considered technically infeasible.

One pore volume of groundwater was pumped and discharged with the groundwater pumping remedy. Post groundwater pumping sampling has indicated the hydraulic has reverted to its west-east fluctuating pattern, and monitoring wells positively affected by the groundwater pumping have reverted to high nitrate, chloride and TDS concentrations advected from zones not affected by the pumping. The high concentrations returned to areas of the VFA where it is thin and difficult to hydraulically affect via pumping. This renders hydraulic recovery of groundwater via pumping technically infeasible.

Because the abatement activities conducted to date have proven unable to achieve Section 3103 standards, a petition for AAS is appropriate. The VFA is a small, perched aquifer that poses no

threat to regional groundwater supplies. Engineered and administrative controls are available to ensure that no exposure to impacted groundwater can occur. These controls include:

- Potable water is supplied and connection thereto required by Town of Bernalillo; therefore, exposure to VFA water via ingestion is not a complete pathway;

- Administrative rules for well drillers require that water wells be isolated from impacted groundwater via grouting or cementing. Any well installed on the property would be completed at depth in the Upper Santa Fe Aquifer, which yields prolific quantities of groundwater.

- An OSE Order will be completed that prohibits completion of a well on affected property and includes notice in OSE's database.

The proposed AAS are based on the last several years groundwater monitoring data. As a result, the AAS are technically achievable. Acceptance of the AAS will allow D&GP to proceed with submitting an Abatement Completion Report, which in turn allows the Secretary NMED to terminate abatement. Once these actions are completed, the property development can continue to completion, thereby benefitting all involved parties. The administrative controls described above will ensure this action is protective of human health, and causes no undue damage to the property. In fact, approving the AAS will allow the development to proceed as planned and benefit the property.

9. REFERENCES

EA Engineering, Science and Technology, Inc., PBC (EA), 2016. Quarterly Groundwater Monitoring Report for the Former Price's Valley Gold Dairy, Sandoval County, New Mexico. January 22.

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Faith Engineering, Inc., 2008. Amended Stage II Abatement Plan at the Former Price's Bernalillo Dairy prepared for VG Farms, Inc. January 31.

Hawley Geomatters, 2009. Draft Report on the Hydrogeologic Setting of the Price's Valley Gold-North Dairy Site, in and Near Section 36, T13N, R3E, Sandoval County, New Mexico, January 12.

New Mexico Environment Department, 1997. Letter from Marcy Leavitt, Ground Water Quality Bureau Chief to Gary Rose, ECO Resources, documenting Lift Station 15 Spill. November 10.

Meisenheimer, Wyatt, 1998. Letter to Marchell Schulman, NMED regarding Lift Station 15 discharge to Venada Arroyo. September 9.

METRIC Corporation, 2010. Amended Stage 2 Abatement Plan for the Price's Valley Gold North Dairy Site, Sandoval County, New Mexico. Prepared for VG Farms, Inc., Albuquerque, New Mexico. October 10.

New Mexico Environment Department (NMED), 2013a. Abatement Completion Approval, Former Price's Valley Gold North Dairy, Bernalillo, New Mexico. Letter from Jerry Schoeppner, Chief, Ground Water Quality Bureau, to John Price, Price's Valley Gold North Dairy. May 22.

NMED, 2013b. Partial Abatement Plan Termination, Former Price's Valley Gold North Dairy, Bernalillo, New Mexico. Letter from Jerry Schoeppner, Chief, Ground Water Quality Bureau, to John Price, D&GP Price Limited Partnership. December 13.

NMED, 2006. Transmittal of Certificate of Completion the former Price's Valley Gold Dairy, North Dairy - North Area (VRP Site No. 53061004) in Bernalillo, New Mexico. Letter from William C. Olson, Chief, Ground Water Quality Bureau, to John Price, Price's Valley Gold North Dairy. November 28.

FIGURES

LEGEND:

ORIGINAL DAIRY BOUNDARY

REPLATTED BOUNDARY VFA

NOTES:

Replatted lots shown relative to original DP-437 Plat.

1000 500 0 1000

SCALE IN FEET

PRICE'S DAIRY

FIGURE 1.
SITE LOCATION

PROJECT #:	1463606	PROJECT PHASE:	01	PROJECT MANAGER:	JS

320 Gold Avenue, SW Suite 1210
Albuquerque, NM 87102
Phone: (505) 224-9013
Fax: (505) 224-9016
EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC.

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LEGEND:

- SITE BOUNDARY
- REPLATTING BOUNDARY
- VFA NO_3 PLUME
- OLD LAGOON
- VALLEY FILL MONITORING WELLS

NOTES:

Replatted lots shown relative to original DP-437 Plat.

NO_3 plume and monitoring well locations shown from Amended Stage 2 Abatement Plan by Metric Corporation dated October, 2010.

N

200 100 0 200

SCALE IN FEET

PRICE'S DAIRY

FIGURE 2.
AREA SUBJECT TO VFA ALTERNATIVE ABATEMENT STANDARD

PROJECT #:	1463606	PROJECT PHASE:	01	PROJECT MANAGER:	JS

EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC.
320 Gold Avenue, SW Suite 1210
Albuquerque, NM 87102
Phone: (505) 224-9013
Fax: (505) 224-9016

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APPENDIX A

SETTLEMENT AGREEMENT

NEW MEXICO
ENVIRONMENT DEPARTMENT

Office of General Counsel

SUSANA MARTINEZ
Governor
JOHN A. SANCHEZ
Lieutenant Governor

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1190 Saint Francis Drive (87505)
PO Box 5469, Santa Fe, NM 87502-5469
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Ryan Flynn
Cabinet Secretary-Designate
BUTCH TONGATE
Deputy Secretary

Jeffrey M. Kendall, General Counsel

August 26, 2013

Pete Domenici, Jr.
Domenici Law Firm, P.C.
320 Gold Ave. SW, Suite 1000
Albuquerque, NM 87102-3328

Dear Pete,

Enclosed you will find a fully executed copy of the Price's Dairy Settlement Agreement. Please note that the finalized Work Plan is also part of the Settlement Agreement and both documents should be kept together for further reference. If you have any questions, please feel free to contact me at (505) 222-9550.

Sincerely,

Jennifer L. Hower
Deputy General Counsel

Encl.

SETTLEMENT AGREEMENT

This Settlement Agreement ("Agreement") is made between the New Mexico Environment Department ("Department") and D&G Price Limited Partnership, a NM limited partnership, ("D&G P") to resolve the Notice of Deficiency ("NOD") issued by the Department on March 28, 2011 in response to the Modified Stage 2 Abatement Plan submitted on October 28, 2010.

I. BACKGROUND

A. PARTIES

1. The New Mexico Environment Department was created pursuant to NMSA 1978, § 9-7A-6.B(3), and is an executive agency within the government of the State of New Mexico charged with administering and enforcing various laws relating to the environment. NMSA 1978, § 9-7A-4, NMSA 1978, § 74-1-6 and § 74-1-7.

2. D&G P is a New Mexico limited partnership and is the successor in ownership to VG Farms, Inc., fka Price's Valley Gold Dairy, Inc.

3. The Property is the former Price's Valley Gold North Dairy located at 618 NM Highway 528, Bernalillo, New Mexico.

4. The Site subject to the terms of this Settlement Agreement is the Valley Fill (VF) groundwater within its historical impacted domain in Lot 5-B, Lot 5-A6, Parcel 1 and portions of Venada Plaza Drive between and contiguous to these lots (Attachment A, Work Plan for Groundwater Extraction, Figure 1, Abatement Plan Area Valley Fill Aquifer) and well MW-11R, located in lot 5-A9.

B. INTRODUCTION

5. Pursuant to the New Mexico Water Quality Act ("Act"), NMSA 1978, §§ 74-6-1 to 74-6-17 (1967), and the New Mexico Water Quality Control Commission Regulations, 20.6.2

NMAC - *Ground and Surface Water Protection* ("WQCC Regulations"), the Department may require responsible persons to abate ground water pollution.

6. D&G P, as the successor in ownership to VG Farms, fka Price's Valley Gold Dairy, Inc., is the responsible party for the abatement of ground water pollution resulting from the former dairy operations on the Property.

7. The former dairy operation was established on the Property by Stanley and Ron Ridge in 1960 and operated as Ridge Dairy until 1973. In June, 1973, Mr. Dudley Price purchased the dairy and renamed it Price's Valley Gold North Dairy (the Dairy). Mr. Price increased the size of the Dairy to 1,000 to 1,200 cows and subsequently purchased 183 acres to the south to accommodate the increased discharge from the enlarged facility. All dairy operations ceased in 1998 when the Dairy was closed and all cattle and manure were removed from the Property. The Property was cleared of all structures by 2006.

8. The Property, except for Lot 5-B, has been sold and redeveloped into various lots that contain commercial businesses, including Wal-Mart, Firestone Tires, a gasoline station, a strip mall and several fast food restaurants. There are undeveloped lots within the southeastern portion of the Property.

9. The Property includes two aquifers, the Upper Santa Fe Aquifer and the Valley Fill Aquifer. Ground water monitoring has shown that both aquifers were contaminated in excess of the WQCC ground water quality standards for nitrate, sulfate, chloride, and total dissolved solids ("TDS") in 20.6.2.3103 NMAC.

10. In 1986, the Department required the Dairy to apply for a groundwater discharge permit and DP-437 was approved and issued in July, 1987. DP-437 approval allowed for a maximum discharge of 9,073 gallons per day of wastewater generated in the milking parlor to be discharged to two manure lined lagoons, and then land applied to crops and pasture on the

Property.

11. DP-437 was approved and modified in May, 1994 for a maximum discharge of 70,000 gallons per day of wastewater generated in the milking parlor to be discharged through a manure separator, conveyed to a synthetically lined lagoon ("Lagoon") with 11.17 acre feet of operational capacity and an additional 4.36 acre-feet of freeboard capacity and then land applied to crops and pasture on the Property.

12. In 1997, the Department was notified that the dairy operation on the Property was scheduled to be closed. The Department conducted site inspections in June and August, 1997 and required the submission of a Corrective Action Plan, pursuant to the terms of DP-437, as part of the closure of such dairy operations on the Property.

13. Initial work on the Corrective Action Plan began in August, 1997. The dairy operations on the Property ceased in 1998.

14. DP-437 was renewed and modified on November 16, 2001 to facilitate groundwater monitoring and closure activity on the Property. The permit renewal and modification required a site investigation of the facility because Water Quality Control Commission ground water standards were exceeded and soil was contaminated on portions of the Property at the time of closure.

15. The required site investigation and groundwater monitoring data demonstrated that all closure plan requirements were satisfied in full for a south portion of the Property containing approximately 156 acres ("South Parcel"). The South Parcel was removed from DP-437 on September 27, 2002 and was not subject to any further discharge plan requirements.

16. On April 3, 2003, a Supplemental Site Investigation Report to evaluate the possible withdrawal of a portion of the remainder of the Property ("North Parcel") from DP-437 was submitted to the Department. The request was denied by the Department on May 27, 2003.

17. On July 22, 2005, the Dairy requested that DP-437 be voluntarily terminated and that remediation proceed pursuant to the WQCC abatement regulations, 20.6.2.4100 – 4115 NMAC.

18. On August 10, 2005, the Department responded and requested that a site characterization report be submitted to the Department prior to the termination of DP-437.

19. On January 11, 2006, a Stage 1 Abatement Plan and Site Characterization Report for Termination of DP-437 was submitted to the Department.

20. On March 3, 2006, the Department provided notice that DP-437 was terminated and that further groundwater investigation and remediation would take place pursuant to WQCC Regulations Sections 20.6.2.4000 through 20.6.2.4115 NMAC.

21. The Stage 1 Abatement Plan was approved by the Department on April 3, 2006.

22. On November 21, 2005, a Voluntary Remediation Program (VRP) application for soil remediation on the North Parcel was submitted to the Department. Final eligibility was granted on June 28, 2006 and a Certificate of Completion was issued on November 28, 2006. Covenants Not to Sue were issued to various purchasers on January 17, 2008 and April 9, 2008. These actions closed out the surficial soil pathways and completed surficial soil remediation only.

23. On November 29, 2006, the Department issued approval of the Stage 1 Abatement Plan, Final Site Investigation Report and provided notice that a Stage 2 Abatement Plan was required.

24. The Proposed Stage 2 Abatement Plan was submitted to the Department on December 18, 2006.

25. On March 23, 2007, the Department issued a Notice of Deficiency (NOD) for the Proposed Stage 2 Abatement Plan.

26. In response to the NOD, a Modified Stage 2 Abatement Plan was submitted to the Department on September 18, 2007. The Modified Stage 2 Abatement Plan proposal was to perform ground water monitoring for 5 years with a contingency plan to operate an in-situ denitrification system if ground water contamination persisted following the 5 years of monitoring. The Department determined that the proposal as submitted was not approvable. On May 2, 2008, the Department received a request for temporary permission to discharge and a plan to implement a temporary in-situ denitrification system. On May 30, 2008, the Department issued a Temporary Permission to Discharge. The in-situ system was operated during the summer and fall of 2008 and 1.5 million gallons of media consisting of water, sugar, and sodium acetate was injected into the Valley Fill Aquifer. The system had no long-term impact on the ground water nitrate levels at the Site.

27. In late 2008 and 2009, additional site investigation activities were performed to better understand the hydrogeologic framework and groundwater flow at the Site.

28. Based on the site reevaluation and investigation, a Revised Stage 2 Abatement Plan was submitted to the Department on October 28, 2010. The Revised Stage 2 Abatement Plan proposed 66 milligrams per liter (mg/l) as the clean-up level for nitrate -based on the average nitrogen concentration level in ground water monitoring wells at the Site in 1986 and 1987. The Revised Stage 2 Abatement Plan identified this concentration as the existing condition within the meaning of 20.6.2.2013 NMAC and the allowable limit under a discharge permit. The Revised Stage 2 Abatement Plan proposed to extract contaminated groundwater from the Valley Fill Aquifer and land apply the extracted water to approximately 7 acres of crop land for treatment.

29. On March 28, 2011, the Department issued a Notice of Deficiency pursuant to Subsection A of 2.6.2.4109 NMAC regarding the October 28, 2010 Revised Stage 2 Abatement

Plan.

30. The March 28, 2011 Notice of Deficiency rejected the proposal to use 66 mg/l as the clean-up level for nitrate as nitrogen on the basis that the "existing condition" or "existing concentration" for purposes of setting water quality standards for issuance of discharge permits is the existing concentration at the time the predecessor regulation to 20.6.2.3103 NMAC was promulgated, in 1977, not the existing concentration at the time a discharge permit is applied for or issued, such as in 1986 and 1987 when monitoring data for site was first obtained. The 1986 and 1987 monitoring data are not relevant to the standards under 20.6.2.3103 NMAC. The proposal did not meet the WQCC Regulations, which require submittal of a plan to implement an abatement option that meets the WQCC water quality standards for nitrate, total dissolved solids, chloride, and sulfate for both aquifers at the site, as required by Subsection E of 20.6.2.4104 NMAC.

31. On April 27, 2011, dispute resolution was invoked in accordance with 20.6.2.4113 NMAC, which provides that if there is a technical dispute regarding a Notice of Deficiency, the responsible person may notify the Secretary of the Department that a dispute has arisen, and may invoke the dispute resolution provisions of the Regulations. Upon such notification, all deadlines affected by the technical dispute are extended for a maximum of sixty (60) days. During this negotiation period, the Secretary or his/her designee and the responsible person are required to meet at least once. If the dispute remains unresolved after the negotiation period, the decision of the Secretary is final.

32. On October 18, 2011, an Abatement Completion Report for the Former Price's Valley Gold Dairy was submitted to the Department.

33. On October 29, 2012, the Technical Infeasibility (TI) demonstration for the Upper Santa Fe aquifer was submitted to the Department to establish substitute abatement

standards pursuant to Section 20.6.24103.E NMAC. Addendums to the report were submitted on December 7 and 13, 2012.

34. On January 18, 2013, the Department approved the substitute abatement standards proposed in the TI demonstration report and addendums for the Upper Santa Fe Aquifer, with the exception of the area at or near the groundwater monitoring well identified as MW-11R legally platted as Lot-5-A-9.

35. On March 27, 2013, the Abatement Completion Report was submitted to the Department based on the Department's January 18, 2013 approval of substitute abatement standards for the Upper Santa Fe Aquifer.

36. On May 22, 2013, the Department issued an Abatement Completion Approval letter based upon the March 27, 2013 Abatement Completion Report.

II. COMPROMISE AND SETTLEMENT

37. The Department and D&G P (collectively, the "Parties") have engaged in settlement discussions to resolve the technical dispute without further administrative or judicial actions.

38. As a result of these discussions, the Parties have entered into this Settlement Agreement.

39. The purpose of this Settlement Agreement is to resolve all matters related to the March 28, 2011 Notice of Deficiency for the Valley Fill Aquifer and the Upper Santa Fe Aquifer near and around MW-11R.

40. This Settlement Agreement is a compromise that sets forth requirements for the management of the Site and is based on the accumulation of data regarding the Valley Fill Aquifer, and other consideration set forth in more detail in the Work Plan attached as Exhibit A.

III. TERMS OF SETTLEMENT

41. The March 28, 2011 Notice of Deficiency rejected the proposal to use 66 mg/l as the clean-up level for nitrate as nitrogen on the basis that the "existing condition" or "existing concentration" for purposes of setting water quality standards for issuance of discharge permits is the existing concentration at the time the predecessor regulation to 20.6.2.3103 NMAC was promulgated, in 1977, not the existing concentration at the time a discharge permit is applied for or issued, such as in 1986 and 1987 when monitoring data for site was first obtained. The 1986 and 1987 monitoring data are not relevant to the standards under 20.6.2.3103 NMAC. The proposal did not meet the WQCC Regulations, which require submittal of a plan to implement an abatement option that meets the WQCC water quality standards for nitrate, total dissolved solids, chloride, and sulfate for both aquifers at the site, as required by Subsection E of 20.6.2.4104 NMAC.

42. The Valley Fill Aquifer has certain unique characteristics that pose challenges with regard to contaminant removal. The contaminant plume within the Valley Fill Aquifer beneath the site is contained within a wedge shaped formation of low conductivity that is hydraulically separated from the USF aquifer by a red clay unit. Specific details regarding the Valley Fill Aquifer are set forth in the Work Plan attached as Exhibit A.

43. The Parties agree that D&G P may be unable to meet water quality standards at the Site based on the site-specific conditions.

44. Therefore, the Parties agree as follows:

45. Valley Fill Aquifer. D&G P shall perform remedial activities within the Valley Fill Aquifer as follows:

a. D&G P shall extract from the Valley Fill Aquifer, as defined in the Work Plan attached as Exhibit A, and dispose of at the Rio Rancho Waste Water Treatment Plant a

volume of ground water that is the agreed-upon one pore volume of the contaminated plume, in accordance with Exhibit A.

b. D&G P shall implement the storm water prevention plan to prevent ponding at the Site in accordance with Exhibit A.

c. D&G P will adhere to provisions for contingencies related to inability to timely and practicably extract and dispose of one pore volume of the contaminated plume as described in Exhibit A.

d. Upon completion of the extraction and disposal of the one pore volume, or after the extraction system has been in operation for two years, whichever comes first, the Ground Water Quality Bureau of the Department shall support approval of a petition for an alternative abatement standard pursuant to Subsections (D) and (F) of 20.6.2.4103 NMAC if D&G P chooses to bring such a petition before the Water Quality Control Commission.

46. Upper Santa Fe Aquifer. With the exception of monitoring well MW 11-R, ground water monitoring data for the Upper Santa Fe Aquifer for the previous eight consecutive quarters demonstrates that contaminant concentrations in the Upper Santa Fe are not greater than 200 percent of the abatement standard for that contaminant. D&G P shall perform remedial activities within the Upper Santa Fe Aquifer as follows:

a. Pursuant to the Department's January 18, 2013 approval of the Abatement Plan Technical Infeasibility Demonstration, on March 27, 2013, D&G P submitted to the Department an abatement completion report for the Upper Santa Fe Aquifer, except for monitoring well MW-11-R, in accordance with 20.6.2.4112.A NMAC that documented compliance with the standards and requirements in 20.6.2.4103 NMAC. The Abatement Completion Report was approved by the Department on May 22, 2013.

b. D&G P shall continue to monitor MW 11-R for the duration of the implementation of the extraction and treatment plan for the Valley Fill Aquifer, in accordance with the work plan attached as Exhibit A to this Agreement.

c. If upon completion of the extraction and disposal of one pore volume of the contaminated plume in the Valley Fill Aquifer, ground water monitoring data demonstrates that monitoring well MW 11-R is still contaminated in excess of the WQCC ground water quality standards, D&G P and NMED shall resume dispute resolution as described in Paragraph 31.

IV. OTHER TERMS AND CONDITIONS

A. RESERVATION OF RIGHTS

47. The Department reserves the right to pursue civil or administrative relief for any violations of state or federal law, past or future, which are not the subject matter of this Settlement Agreement. D&G P reserves the right to assert any and all defenses that they may have to any civil, administrative or judicial action that may be asserted by the Department as described by the terms of this paragraph.

48. In addition to the rights reserved to the Parties, in the event the Petition described in Paragraphs 40.d and 41.c. is filed but not approved by the WQCC or any reviewing body, D&G P and NMED shall resume dispute resolution as described in Paragraph 31.

49. Except as expressly provided herein, the Parties reserve all other legal privileges and rights.

50. The Parties acknowledge that a contract or other agreement providing access to the City of Rio Rancho Wastewater Treatment system is a condition precedent to this Agreement. D&G P expects such agreement will be obtained immediately upon execution of this Agreement. If D&G P cannot obtain such agreement within thirty days of execution of this

Agreement, D&G P will notify NMED and this Agreement shall be terminated without any further action of either Party, unless extended by written agreement of the Parties.

51. Agreement of the Parties to the work plan must be obtained simultaneously with execution of this Agreement.

B. RELEASE OF LIABILITY

52. D&G P shall assume all costs and liabilities incurred in performing any of its obligations under the Settlement Agreement. The Department, on its own behalf or on behalf of the State of New Mexico, shall not assume any liability for D&G P's performance of any obligation under this Settlement Agreement.

C. BINDING EFFECT

53. This Settlement Agreement shall be binding on the Parties and their officers, directors, employees, agents, subsidiaries, successors, assigns, trustees, or receivers.

D. DURATION

54. This Settlement Agreement shall remain in effect until D&G P completes abatement of the Site pursuant to 20.6.2.4112 NMAC, or both the Valley Fill and the Upper Santa Fe Aquifers have received approval of either a petition for alternative abatement standards pursuant to Subsection F of 20.6.2.4103 NMAC or a technical infeasibility demonstration pursuant to Paragraph (1) of Subsection E of 20.6.2.4103 NMAC, or both, or it is terminated by written agreement of the Parties or the Parties resume dispute resolution as set forth in Paragraph 31.

E. INTEGRATION

55. This Settlement Agreement merges all prior written and oral communications between the Parties concerning the subject matter of this Agreement, and contains the entire

Agreement between the Parties. This Agreement shall not be modified without the express written consent of the Parties.

F. COMPLIANCE WITH OTHER STATE AND FEDERAL REQUIREMENTS

56. This Settlement Agreement shall not be construed to prohibit or limit in any way the Department from requiring D&G P to comply with any other applicable state or federal requirements.

G. DISCLOSURE TO SUCCESSORS-IN-INTEREST

57. D&G P shall disclose this Settlement Agreement to any successor-in-interest and shall advise such successor-in-interest that this Agreement is binding on the successor-in-interest until such time as D&G P complies with the terms and conditions of the Agreement or it is terminated by written agreement of the Parties.

H. AUTHORITY OF SIGNATORIES

58. The persons executing this Settlement Agreement represent that they have the authority to bind their respective parties to this Agreement, and that their representation shall be legally sufficient evidence of actual or apparent authority to bind their respective parties to this Agreement.

It is so Agreed:

NEW MEXICO ENVIRONMENT DEPARTMENT

By:_____ Date: 8/23/2013
Ryan Flynn, Secretary-Designate

Ryan Flynn, Secretary-Designate

D & G Price Limited Partnership,

By: Dudley Price, G.P. Date: 8-14-13

Dudley Price, General Partner

APPENDIX B

FINAL GROUNDWATER MONITORING AND SYSTEM OPERATIONS REPORT

EA Engineering, Science, & Technology, Inc., PBC
320 Gold Avenue SW, Suite 1210
Albuquerque, New Mexico 87102
Phone: (505) 224-9013 Fax (505) 224-9016

August 27, 2015

Justin Ball
New Mexico Environment Department
Ground Water Quality Bureau
Remediation Oversight Section
5500 San Antonio Dr. NE
Albuquerque, New Mexico 87109

Dear Mr. Ball:

On behalf of D&G Price Limited Partnership, EA Engineering, Science, and Technology, Inc., PBC is submitting the Quarterly Groundwater Monitoring, and System Operation Report for the Former Price's Valley Gold Dairy located in Sandoval County, New Mexico. The report discusses the 7th quarterly groundwater sampling event, and groundwater extraction system operation and maintenance conducted to fulfill requirements of the *Work Plan* for groundwater extraction dated May 24, 2013.

As provided in the May 24, 2013 work plan and the August 26, 2013 Settlement Agreement, Paragraph 45.a, the agreed to pore-volume of groundwater has been extracted. The aerial extent and mass of the solute plume has been substantially reduced. Accordingly, operation of the groundwater extraction system has been terminated. D&G Price Limited Partnership will initiate Alternative Abatement Standards for the Valley Fill Aquifer pursuant to Subsections D and F of 20.6.2.4103 NMAC as provided in Paragraph 45.d of the Settlement Agreement.

Please let me know if you have any questions regarding the information provided in this report.

Sincerely,

Jay Snyder
Senior Hydrogeologist

Enclosure

Cc: John Price
Dudley Price
File

QUARTERLY GROUNDWATER MONITORING, AND GROUNDWATER EXTRACTION SYSTEM OPERATION REPORT FORMER PRICE'S VALLEY GOLD DAIRY BERNALILLO, SANDOVAL COUNTY, NEW MEXICO

Prepared for:

Former Price's Valley Gold Dairy
Bernalillo, Sandoval County, New Mexico

Prepared by:

EA Engineering, Science,
and Technology, Inc., PBC
320 Gold Avenue SW, Suite 1210
Albuquerque, New Mexico 87102

August 2015

EA Project No. 1505701.02

EA Engineering, Science, & Technology, Inc., PBC
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Albuquerque, New Mexico 87102
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QUARTERLY GROUNDWATER MONITORING, AND GROUNDWATER EXTRACTION SYSTEM OPERATION REPORT FORMER PRICE'S VALLEY GOLD DAIRY BERNALILLO, SANDOVAL COUNTY, NEW MEXICO

Prepared for:

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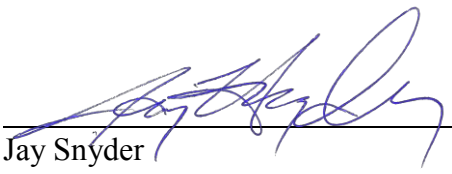
Bernalillo, Sandoval County, New Mexico

Prepared by:

EA Engineering, Science,
and Technology, Inc., PBC
320 Gold Avenue SW, Suite 1210
Albuquerque, New Mexico

August 2015



8/27/15

Jay Snyder
Senior Hydrogeologist

Date

EA Project No. 1505701.02

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1.0 INTRODUCTION

On behalf of Former Price's Valley Gold Dairy (Price's Dairy), EA Engineering, Science, and Technology, Inc., PBC (EA) has prepared this 5th Quarterly Groundwater Monitoring Report for Price's Dairy located in Sandoval County, New Mexico. This report was completed in accordance with the *Groundwater Extraction Work Plan* dated May 24, 2013. The Work Plan (WP) was prepared to satisfy requirements stated in the New Mexico Administrative Code (NMAC), Title 20, 6.2 §4106 through §4110.

Price's Dairy is located on the east side of New Mexico Highway 528 in Bernalillo, New Mexico. Originally Ridge Dairy, a 200-cow dairy, was operated on the site from 1960 to 1973 and was owned by Stanley and Ron Ridge. In June 1973, Mr. Dudley Price purchased the Dairy and renamed it Price's Valley Gold Dairy. Mr. Price increased the size of the dairy to 1,000 to 1,200 cows and subsequently purchased 183 acres to the south to accommodate the increased discharge from the enlarged facility. Mr. Price closed the dairy in June 1998. The property was cleared of all structures by 2006. The property, except for Lot 5-B, has been sold and redeveloped into various lots that contain commercial businesses, including Wal-Mart, Firestone Tires, a gasoline station, a strip mall and several fast food restaurants. There are undeveloped lots within the southeastern portion of the Property.

The groundwater extraction system is located in Lot 5-B, Figure 1. The system consists of four 5-inch-diameter groundwater extraction wells, EW-1 through EW-4, equipped with Red Jacket Enduro 8S21, 1HP submersible pumps. All wells discharge into the City of Rio Rancho waste water sewer system on the west side of New Mexico Highway 528 via 2-inch SDR-17 HDPE conveyance line. The system layout is provided in Figure 1.

The following scope of work was performed during this monitoring period:

- Gauged 4 extraction wells and 7 monitoring wells;
- Collected groundwater samples from 4 extraction wells and 7 monitoring wells, and analyzed samples for nitrate, chloride, and total dissolved solids (TDS) using EPA Method 300 and SM 2540 C, respectively;
- Collected field nitrate sample using a HACH Model NI-12 0-50 mg/L nitrate test kit;
- Conducted bi-weekly operation and maintenance (O&M) consisting of gauging extraction wells, recording flow meter readings, and collecting field nitrate samples;
- Prepared this Quarterly Groundwater Monitoring, and Groundwater Extraction System Operation Report.

A total of 14.6 million gallons of groundwater have been pumped to date. This equates to 45 acre-feet. The agreed upon pore volume provided in the May 24, 2013 work plan, transmitted to NMED on August 6, 2013, was 44 acre-feet. This objective has been achieved. The plume dimensions, plume mass and average concentrations have been significantly reduced as a result of this abatement action. The groundwater extraction system is not being operated as the agreed

upon pore volume has been removed. A petition for alternative abatement standards is appropriate at this juncture.

2.0 GROUNDWATER MONITORING ACTIVITIES

Groundwater monitoring activities included gauging and sampling 4 extraction wells (EW-1, EW-2, EW-3, and EW-4) and 7 monitoring wells (MW-1A, MW-11R, MW-13RR, MW-18, MW-19R, MW-20R, and MW- 23). All wells are completed in Valley Fill Aquifer except MW-11R, which is in the Upper Santa Fe Aquifer.

2.1 Well Gauging

On July 23, 2015, 11 wells were gauged with an electronic water level indicator. Groundwater levels in the extraction wells fluctuate daily in response to pump cycling and are therefore not used in the groundwater elevation map. Table 1 provides a summary of the groundwater gauging data collected from the monitoring network including historical data. A potentiometric surface map (Figure 2) was constructed based on the most recent data.

2.2 Groundwater Sampling

On July 23, 2015, 4 extraction wells and 7 monitoring wells were sampled. Prior to sampling, the monitoring wells were purged using disposable bailers and new disposable rope or twine. Monitoring wells were purged three well volumes to the extent possible without bailing dry prior to sample collection. During purging, EA measured and recorded on sampling field forms field parameters (specific conductance, pH, dissolved oxygen, and temperature) with an Oakton or YSI water quality meter and a YSI dissolved oxygen meter. The meters were calibrated and/or checked against a standard in accordance with manufacturers' specifications prior to use. Purge water from the wells was ground discharged. Extraction well groundwater parameters, field nitrate samples, and laboratory samples were collected from the extraction well sample ports with the pumps running.

Groundwater samples were collected in the sample containers provided by Hall Environmental Analysis Laboratory (HEAL). Sample containers, preservatives, analytical methods, and holding times are specified in Table 2. All samples were preserved in accordance with method requirements, labeled, then immediately cooled to <6°C with ice and delivered under chain-of-custody to HEAL in Albuquerque, New Mexico. Wells were sampled from clean to dirty to the extent possible to minimize cross-contamination. All equipment was decontaminated between wells with an Alconox™ solution to further ensure sample quality. Copies of field forms are included in Appendix A. The analytical laboratory reports are provided in Appendix B.

3.0 GROUNDWATER MONITORING RESULTS

3.1 Hydraulic Gradient and Direction of Groundwater Flow

During this quarter groundwater elevations in the wells immediately surrounding the extraction well field have increased. Hydrographs for the Valley Fill Aquifer monitoring wells are included in Appendix C. Figure 2 provides the potentiometric surface map, as indicated by the contours the groundwater flow direction is towards the east. Deflection of the flow lines in response to pumping is observed around EW-1, EW-2, EW-3, and EW-4.

3.2 Groundwater Analytical Results and Trend Analysis

During this quarter concentrations of chloride, nitrate and total dissolved solids (TDS) were found above the New Mexico Water Quality Control (NMWQCC) standards. Current and historical contaminant concentrations can be found in Table 3. Concentration trends can be found in Appendix D.

Chloride was below the NMWQCC standard of 250 milligrams per liter (mg/L) in all extraction and monitoring wells except for MW-19R. A map of the chloride distribution can be found in Figure 3.

Nitrate was above the NMWQCC standard of 10 mg/L in wells EW-1 (11 mg/L), MW-11R (22mg/L), MW-19R (220 mg/L), and MW-20R (21 mg/L). Concentrations in wells EW-1and MW-20R decreased by 6 mg/L and 33 mg/L respectively while the concentrations in wells MW-11R and MW-19R increased by 2 and 200 mg/L respectively. Nitrate concentrations in wells EW-2, EW-3, and EW-4 are below the standard of 10 mg/L. A map of the nitrate distribution can be found in Figure 4. Trend plots of nitrate concentrations are provided in Appendix D.

TDS concentrations were above the NMWQCC standard of 1,000 mg/L in wells EW-1(1,300 mg/L), EW-2 (1,040 mg/L), EW-4 (1,070 mg/L), MW-11R (1,250 mg/L), MW-19R (3,310 mg/L), and MW-23 (1,230 mg/L). TDS concentrations in wells EW-1, EW-2, EW-3, MW-1A, and MW-23 have been generally decreased since the 1st quarter sampling event. During this quarter TDS in wells EW-4, MW-11R, MW-19R, and MW-23 increased by 360 mg/L, 180 mg/L, 1,910 mg/L, and 30 mg/L, respectively. All other well TDS concentrations either decreased or remained below the standard. A map of the TDS distribution can be found in Figure 5. TDS concentration trends are provided in Appendix D.

The sample collected from MW-19R on July 23, 2015 showed significant increase in contaminant concentrations. In order to confirm the results, the well was resampled on August 3, 2015 and the nitrate, chloride, and TDS results decreased significantly to 140 mg/L, 210 mg/L, and 2,650 mg/L respectively. Because of the large decrease over the 11 day period the well was resampled again on August 12, 2015. Concentrations for nitrate, chloride, and TDS were 170 mg/L, 240 mg/L, and 2460 mg/L respectively. The large increase for nitrate, chloride, and TDS in well MW-19R is most likely attributed to the 3-foot increase in the site groundwater elevation and shift in groundwater flow direction strongly to the east.

4.0 GROUNDWATER EXTRACTION SYSTEM PERFORMANCE ASSESSMENT

4.1 Groundwater Extraction System Operation

After system start-up routine operation and maintenance tasks were conducted on a bi-weekly basis, Table 4. The following system parameters were recorded on field data sheets (Appendix A).

- Recorded totalizing flow meter readings;
- Collected field nitrate sample using the HACH Model NI-12 0-50 mg/L nitrate test kit;
- Gauged depth to water;
- Inspected conveyance line along the Venada Arroyo;
- Inspected outfall into City of Rio Rancho waste water sewer.

During this quarter the groundwater extraction system experienced 1 period of downtime lasting approximately 24 hours due to extraction well treatment.

- On February 6, 2015, EW-3 was shut off to optimized the nitrate removal from the site.
- On February 19, 2015, approximately 1 gallon of BioClean and 3 gallons of water was added to wells EW-1, EW-2, and EW-4. The system was left off for approximately 24 hours then restarted.
- On April 24, 2015, the flowmeter in well EW-4 was found to be non-operational. On April 28, 2015, the flowmeter was cleaned and reinstalled.
- On July 10, 2015, the flowmeter in well EW-4 was found to be non-operational. The flowmeter was removed, cleaned and re-installed.
- On July 23, 2015, the flow meter in EW-4 was not working properly due to scale and bio-fouling build up. EW-4 was shut off after sampling and EW-3 was turned on.

4.2 Groundwater Extraction System

During this quarter the average system flow rate decreased from 15.23 gpm to 13.03 gpm. This decrease can be mostly attributed to well EW-3 being shut off during this period and the clogged flow meter in EW-4. Approximately 1.69 million gallons (5.19 acre-feet) of contaminated groundwater were extracted during this quarter.

Since start up the average total system extraction rate has averaged 15.74 gallons per minute (gpm). Individual wells varied between 6.03 gpm in EW-3 and 1.86 gpm in EW-1. During this quarter individual wells averaged between 5.80 gpm in EW-2 and 2.71 gpm in EW-1. Calculations of system flow rates can be found in Table 5. As of July 23, 2015, approximately 14.6 million gallons (45 acre-feet) of contaminated groundwater have been extracted from the Valley Fill Aquifer and discharged into the city sewer.

The areal extent of groundwater impacts in Valley Fill Aquifer are now contained in vicinity of extraction wells EW-1 thru EW-4. Nitrate concentrations have generally declined; the system appears to be functioning as designed.

5.0 CONCLUSIONS AND RECOMMENDATIONS

This groundwater monitoring event included gauging and sampling 4 extraction wells and 7 monitoring wells. Based on the data collected the following conclusions and recommendations are presented:

- The groundwater extraction system is removing contaminants from the Valley Fill Aquifer.
- Nitrate and TDS concentrations within the Valley Fill Aquifer exceed the NMWQCC standards; however, TDS concentrations are now below 2 times standards in all wells except MW-19R.
- Except for well MW-19R, Chloride concentrations with in the Valley Fill Aquifer do not exceed the NMWQCC standards.
- Approximately 14.6 million gallons (45acre-feet) of contaminated groundwater have been extracted since system startup. This exceeds the 44 acre-foot of groundwater pore volume established in the May 24, 2013 work plan.
- MW-11R, completed in Upper Santa Fe Aquifer, had a concentration of 22 mg/L nitrate this event.
- Nitrate, chloride, and TDS concentrations saw a large increase during this quarter. The increase is most likely attributed to a 3-foot increase in the site groundwater elevation.
- Because the agreed upon pore-volume of groundwater has been extracted, operation of the groundwater extraction system has been terminated.
- Petition for alternative abatement standards for residual contaminants is appropriate at this juncture.

TABLES

TABLE 1. VALLEY FILL AQUIFER GROUNDWATER ELEVATION
FORMER PRICE'S VALLEY GOLD DAIRY, BERNALILLO, NEW MEXICO

Well Identification	Date Gauged	Casing Elevation (amsl)	Depth to Water (feet)	Groundwater Elevation (amsl)
MW-1A	7/23/2015	5072.26	33.77	5038.49
	4/24/2015		36.91	5035.35
	1/23/2015		37.03	5035.23
	10/16/2014		36.71	5035.55
	7/9/2014		36.34	5035.92
	4/10/2014		37.32	5034.94
	1/14/2014		37.45	5034.81
	10/15/2013		36.97	5035.29
	7/29/2013		36.92	5035.34
	3/28/2013		37.66	5034.60
	12/22/2011		36.52	5035.74
	9/8/2011		34.41	5037.85
	6/15/2011		35.20	5037.06
	3/10/2011		35.30	5036.96
MW-11R	7/23/2015	5110.54	83.95	5026.59
	4/24/2015		84.42	5026.12
	1/23/2015		84.69	5025.85
	10/16/2014		84.33	5026.21
	7/9/2014		84.52	5026.02
	4/10/2014		84.35	5026.19
	1/14/2014		84.72	5025.82
	7/29/2013		85.19	5025.35
	3/28/2013		85.12	5025.42
	12/22/2011		84.22	5026.32
	9/8/2011		84.07	5026.47
	6/15/2011		83.95	5026.59
	3/10/2011		83.89	5026.65
MW-13RR	7/23/2015	5090.20	53.55	5036.65
	4/24/2015		55.07	5035.13
	1/23/2015		54.70	5035.50
	10/16/2014		54.35	5035.85
	7/9/2014		54.83	5035.37
	4/10/2014		54.70	5035.50
	1/14/2014		54.09	5036.11
	10/15/2013		53.80	5036.40
	7/29/2013		56.05	5034.15
	3/28/2013		56.22	5033.98
	12/22/2011		54.17	5036.03
	9/7/2011		53.76	5036.44
	6/15/2011		54.25	5035.95
	3/10/2011		53.50	5036.70
MW-18	7/23/2015	5080.80	39.20	5041.60
	4/24/2015		44.13	5036.67
	1/23/2015		42.21	5038.59
	10/16/2014		40.67	5040.13
	7/9/2014		45.65	5035.15
	4/10/2014		42.61	5038.19
	1/14/2014		38.87	5041.93
	10/15/2013		34.20	5046.60
	7/29/2013		Dry	Dry
	3/28/2013		42.54	5038.26
	12/26/2011		40.81	5039.99
	9/7/2011		41.83	5038.97
	6/15/2011		44.33	5036.47
	3/10/2011		40.03	5040.77

TABLE 1. VALLEY FILL AQUIFER GROUNDWATER ELEVATION
FORMER PRICE'S VALLEY GOLD DAIRY, BERNALILLO, NEW MEXICO

Well Identification	Date Gauged	Casing Elevation (amsl)	Depth to Water (feet)	Groundwater Elevation (amsl)
MW-19R	7/23/2015	5072.69	34.57	5038.12
	4/24/2015		37.29	5035.40
	1/23/2015		37.30	5035.39
	10/16/2014		36.70	5035.99
	7/9/2014		36.81	5035.88
	4/10/2014		37.34	5035.35
	1/14/2014		37.34	5035.35
	10/15/2013		37.00	5035.69
	7/29/2013		36.98	5035.71
	3/28/2013		37.51	5035.18
	12/26/2011		36.33	5036.36
	9/7/2011		34.76	5037.93
	6/15/2011		35.10	5037.59
	3/10/2011		35.27	5037.42
MW-20R	7/23/2015	5072.57	33.73	5038.84
	4/24/2015		37.05	5035.52
	1/23/2015		37.19	5035.38
	10/16/2014		36.85	5035.72
	7/9/2014		36.52	5036.05
	4/10/2014		37.55	5035.02
	1/14/2014		37.71	5034.86
	10/15/2013		36.82	5035.75
	7/29/2013		37.01	5035.56
	3/28/2013		37.98	5034.59
	12/22/2011		36.74	5035.83
	9/7/2011		34.83	5037.74
	6/15/2011		35.41	5037.16
	3/10/2011		35.52	5037.05
MW-23	7/23/2015	5073.13	34.98	5038.15
	4/24/2015		37.82	5035.31
	1/23/2015		38.00	5035.13
	10/16/2014		37.61	5035.52
	7/9/2014		37.36	5035.77
	4/10/2014		38.37	5034.76
	1/14/2014		38.45	5034.68
	10/15/2013		37.66	5035.47
	7/29/2013		37.58	5035.55
	3/28/2013		38.25	5034.88
	12/22/2011		37.03	5036.10
	9/7/2011		35.20	5037.93
	6/15/2011		35.72	5037.41
	3/10/2011		35.21	5037.92

NOTES:
amsl = feet above mean sea level

TABLE 2. SUMMARY OF SAMPLE ANALYTICAL AND QUALITY CONTROL REQUIREMENTS
FORMER PRICE'S VALLEY GOLD DAIRY, BERNALILLO, NEW MEXICO

Analyte	Method	Medium	Container and Minimum Volume	Preservation	Holding Time	Storage
Chloride	EPA 300	Water	250 ml poly	None	28 days	Cool < 6 °C
Nitrate/Nitrite	EPA 300	Water	250 ml poly	H_2SO_4 pH <2	28 days	Cool < 6 °C
TDS	SM 2540 C	Water	250 ml poly	None	7 days	Cool < 6 °C

NOTES:
°C = degrees Celcius
< = less than
EPA = U.S. Environmental Protection Agency
mL = milliliter
VOC = Volatile organic compounds
TDS = total dissolved solids

TABLE 3. SUMMARY OF ANALYTICAL DATA
FORMER PRICE'S VALLEY GOLD DAIRY, BERNALILLO, NEW MEXICO

Well Identification	Aquifer	Sample Date	Chloride (mg/L)	TDS (mg/L)	Nitrate (mg/L)
EW-1	VF	7/23/2015	190	1,300	11
		4/24/2015	170	1,420	17
		1/23/2015	220	1,460	17
		10/31/2014	230	1,610	27
		7/9/2014	240	1,520	18
		4/10/2014	290	1,750	31
		1/14/2014	390	2,140	57
		10/15/2013	350	2,320	85
EW-2	VF	7/23/2015	140	1,040	<1.0
		4/24/2015	160	1,100	<1.0
		1/23/2015	170	1,140	1.1
		10/16/2014	190	1,200	<1.0
		7/9/2014	200	1,270	3
		4/10/2014	200	1,380	7.6
		1/14/2014	310	1,770	23
		10/15/2013	330	1,960	21
EW-3	VF	7/23/2015	120	995	4.8
		4/24/2015	120	939	1.5
		1/23/2015	130	1,010	2.5
		10/16/2014	130	1,010	3.2
		7/9/2014	150	1,090	3.4
		4/10/2014	170	1,210	3.2
		1/14/2014	220	1,410	6.3
		10/15/2013	320	1,780	0.35
EW-4	VF	7/23/2015	140	1,070	5.7
		4/24/2015	83	710	1.1
		1/23/2015	77	691	1.1
		10/16/2014	89	776	<1.0
		7/9/2014	110	894	1.1
		4/10/2014	110	891	1.5
		1/14/2014	130	977	1.4
		10/15/2013	210	1,300	<0.10
MW-11R	USF	7/23/2015	230	1,250	22
		4/24/2015	200	1,070	20
		1/23/2015	210	1,070	20
		10/16/2014	190	1,120	19
		7/9/2014	230	1,110	20
		4/10/2014	210	1,060	19
		1/14/2014	220	1,020	20
		7/10/2013	220	1,030	21
		3/12/2012	190	1,060	29
		12/26/2011	190	1,030	26
		9/6/2011	220	1,180	33
		6/15/2011	240	1,260	38
		3/10/2011	240	1,180	41
		9/9/2010	210	1,180	38
		3/11/2010	260	1,190	42
		9/16/2009	270	1,210	35
		3/20/2009	270	2,000	34
		3/20/2009	230	1,270	36
		3/20/2008	200	1,000	19

TABLE 3. SUMMARY OF ANALYTICAL DATA
FORMER PRICE'S VALLEY GOLD DAIRY, BERNALILLO, NEW MEXICO

Well Identification	Aquifer	Sample Date	Chloride (mg/L)	TDS (mg/L)	Nitrate (mg/L)
MW-1A	VF	7/23/2015	82	820	<1.0
		4/24/2015	92	912	<1.0
		1/23/2015	120	1,040	2.1
		10/16/2014	120	1,060	1
		7/9/2014	110	990	0.14
		4/10/2014	110	1,000	<0.10
		1/14/2014	110	1,080	1.5
		10/15/2013	200	1,530	29
		7/10/2013	140	360	16
		3/13/2012	190	1,640	63
		12/22/2011	200	1,730	59
		9/8/2011	170	1,570	46
		6/15/2011	190	1,660	56
		3/10/2011	210	1,830	79
		12/9/2010	230	2,260	120
		9/9/2010	190	1,840	64
		6/18/2010	180	1,490	40
		3/11/2010	240	2,070	110
		12/17/2009	270	2,380	120
		9/16/2009	250	2,010	4.8
		6/23/2009	250	1,700	56
		3/20/2009	340	2,300	150
		3/20/2009	275	2,780	150
		6/26/2008	190	1,400	45
		3/20/2008	110	1,000	15
		8/22/2007	140	1,200	38
		7/6/2007	140	1,300	37
		5/31/2007	270	2,500	190
		2/8/2007	140	1,300	39
		10/25/2006	220	1,700	71
		5/19/2006	97	1,100	30
		1/17/2006	83	980	16
		8/22/2005	91	1,000	21
		4/27/2005	88	880	4.0
		11/16/2004	98	1,100	16
		7/15/2004	89	820	11
		3/31/2004	98	800	25
		7/28/2003	100	790	0.21
		2/7/2003	120	930	4.6
		11/7/2002	150	1,000	12
		8/12/2002	150	1,100	18
		5/22/2002	180	1 300	24
		2/11/2002	210	1,100	13
		12/13/2001	150	790	0.15
		9/11/2001	200	920	6
		6/25/2001	170	820	21
		3/28/2001	180	850	4.9
		1/26/2001	170	730	2.0
		12/28/2000	210	1,900	130
		5/4/2000	190	1,200	31
		2/24/2000	170	920	14
		10/28/1999	200	1,300	56
		7/27/1999	190	870	ND
		4/22/1999	140	1,100	40
		1/27/1998	152	1,324	42.5

TABLE 3. SUMMARY OF ANALYTICAL DATA
FORMER PRICE'S VALLEY GOLD DAIRY, BERNALILLO, NEW MEXICO

Well Identification	Aquifer	Sample Date	Chloride (mg/L)	TDS (mg/L)	Nitrate (mg/L)
MW-13-RR	VF	7/23/2015	84	468	4.5
		4/24/2015	98	496	5.6
		1/23/2015	71	505	4.7
		10/16/2014	39	396	4.0
		7/9/2014	47	438	5.0
		4/10/2014	36	400	4.7
		1/14/2014	47	434	7.4
		10/15/2013	41	400	5.9
		7/10/2013	41	425	5.8
		3/13/2012	65	540	8.0
		12/22/2011	120	757	14.28
		9/7/2011	130	849	11.24
		6/15/2011	130	839	11
		3/10/2011	160	931	11
		12/9/2010	130	869	12
		9/9/2010	150	969	12
		6/18/2010	130	920	12
		3/11/2010	140	867	12
		12/17/2009	170	1,040	12
		9/16/2009	240	1,340	12
		3/20/2009	180	1,300	11
		3/20/2009	157	1,070	9.9
		6/26/2008	94	4,600	1.5
		3/18/2008	160	680	3.4
MW-18	VF	7/23/2015	31	300	4.4
		4/24/2015	72	386	5.0
		1/23/2015	69	660	19
		10/16/2014	27	294	3.5
		7/9/2014	42	420	8.1
		4/10/2014	72	550	19
		1/14/2014	26	340	6.4
		10/15/2013	16	269	3.1
		3/12/2012	43	368	3.7
		12/26/2011	71	416	3.5
		9/7/2011	140	648	4.0
		6/15/2011	46	403	3.3
		3/10/2011	71	378	3.4
		12/9/2010	110	567	5.8
		9/9/2010	41	316	2.5
		6/18/2010	64	445	6.1
		3/11/2010	66	428	6.9
		12/17/2009	40	339	3.8
		9/16/2009	71	438	5.0
		6/23/2009	50	440	3.3
		3/20/2009	45	650	11
		3/20/2008	34	450	7.4
		8/22/2007	50	420	2.8
		6/1/2007	69	390	2.0
		2/8/2007	8	230	1.8
		10/26/2006	6	260	1.6
		5/20/2006	24	360	6.8

TABLE 3. SUMMARY OF ANALYTICAL DATA
FORMER PRICE'S VALLEY GOLD DAIRY, BERNALILLO, NEW MEXICO

Well Identification	Aquifer	Sample Date	Chloride (mg/L)	TDS (mg/L)	Nitrate (mg/L)
MW-19R	VF	8/3/2015	210	2,650	140
		7/23/2015	280	3,310	220
		4/24/2015	180	1,400	20
		1/23/2015	220	1,560	27
		10/16/2014	270	1,940	42
		7/9/2014	350	1,970	58
		4/10/2014	350	1,930	51
		1/14/2014	330	1,960	60
		10/15/2013	330	2,160	83
		7/10/2013	370	2,260	96
		3/13/2012	330	2,360	120
		12/26/2011	310	2,380	110
		9/7/2011	400	2,880	150
		6/15/2011	380	2,700	150
		3/10/2011	290	2,540	130
		12/9/2010	360	2,910	150
		9/9/2010	510	3,520	200
		6/18/2010	520	3,760	230
		3/11/2010	320	2,850	140
		12/17/2009	420	3,190	140
		9/16/2009	500	2,920	160
		6/23/2009	470	3,000	170
		3/20/2009	410	3,500	130
		3/20/2009	334	3,120	130
		6/26/2008	120	1,100	17
		3/18/2008	470	2,200	29
MW-20R	VF	7/23/2015	50	680	21
		4/24/2015	74	975	55
		1/23/2015	74	1,020	60
		10/16/2014	54	868	41
		7/9/2014	71	760	17
		4/10/2014	72	905	50
		1/14/2014	59	930	43
		10/15/2013	51	811	37
		7/10/2013	180	1,600	40
		3/13/2012	92	1,160	76
		12/22/2011	92	963	39.39
		9/7/2011	69	1,100	51
		6/15/2011	90	1,100	25
		3/10/2011	38	632	26
		12/9/2010	28	570	23
		9/9/2010	28	504	14
		6/18/2010	45	687	21
		3/11/2010	48	653	27
		12/17/2009	76	1,200	96
		9/16/2009	40	686	29
		6/23/2009	71	1,000	59
		3/20/2009	150	1,800	160
		3/20/2009	148	2,350	170
		6/26/2008	220	2,200	110
		3/18/2008	82	1,900	190

TABLE 3. SUMMARY OF ANALYTICAL DATA
FORMER PRICE'S VALLEY GOLD DAIRY, BERNALILLO, NEW MEXICO

Well Identification	Aquifer	Sample Date	Chloride (mg/L)	TDS (mg/L)	Nitrate (mg/L)
MW-21	VF	7/10/2013	94	768	<0.10
		3/12/2012	68	724	ND
		12/26/2011	65	686	ND
		9/7/2011	60	678	ND
		6/15/2011	61	673	ND
		3/10/2011	66	683	ND
		12/9/2010	66	667	ND
		9/9/2010	68	662	ND
		6/18/2010	54	565	ND
		3/11/2010	70	0	ND
		12/17/2009	69	663	ND
		9/16/2009	61	612	ND
		6/23/2009	52	490	ND
		3/20/2009	65	390	ND
		3/20/2009	56	632	ND
		3/20/2008	42	480	0.29
		10/26/2006	38	490	ND
		5/19/2006	25	450	ND
MW-23	VF	7/23/2015	130	1,230	5.7
		4/24/2015	150	1,200	9.5
		1/23/2015	160	1,290	2.3
		10/16/2014	170	1,640	4.8
		7/9/2014	190	1,380	5.6
		4/10/2014	220	1,480	0.13
		1/14/2014	250	1,580	0.22
		10/15/2013	240	1,640	9.7
		7/10/2013	320	1,770	4.2
		3/13/12	270	1,610	17
		12/22/11	240	1,560	23
		9/7/11	250	2,100	45
		6/15/11	270	1,600	15
		3/10/11	220	2,060	110
		12/9/10	270	2,180	94
		9/9/10	300	2,520	94
		6/18/10	230	1,370	4.0
		3/11/10	220	2,400	190
		12/17/09	240	2,390	130
		9/16/09	260	2,140	98
		6/23/09	260	1,400	1.7
		3/20/09	220	2,200	190
		3/20/09	159	2,480	171
NMWQCC Standard			**250**	**1,000**	**10**

NOTES:
ate data are by EPA Method 300.0
EPA Method SM 2540 C
above NMWQCC standard if shaded
, = milligrams per liter
= Total dissolved solids
ND = Non detect
Mexico Environment Department
ew Mexico Water Quality Control
F = Upper Santa Fe
VF = Valley Fill

TABLE 4. SUMMARY OF GROUNDWATER FIELD PARAMETERS
FORMER PRICE'S VALLEY GOLD DAIRY, BERNALILLO, NEW MEXICO

Well Identification	Date	Flow Meter Reading (gallons)	Depth to Water (feet)	Field Nitrate (ppm)
EW-1	7/10/2015	1,034,630	NM	10
	6/24/2015	957,923	NM	10
	6/12/2015	909,752	NM	10
	5/28/2015	856,802	NM	10
	4/24/2015	744,980	37.48	5-10
	3/21/2015	638,716	NM	10-20
	3/6/2015	592,430	NM	10
	2/19/2015	550,503	NM	10
	2/6/2015	509,458	NM	10
	1/23/2015	462,735	T.O.P.	10
	1/2/2015	393,482	NM	10
	12/19/2014	345,000	NM	10
	12/5/2014	301,755	NM	10
	11/21/2014	252,718	NM	NM
	11/14/2014	233,024	46.1	5-10
	10/30/2014	180,239	NM	50
	10/16/2014	180,132	36.93	NM
	10/9/2014	175,992	NM	NM
	10/9/2014	9,734,391	NM	NM
	10/2/2014	9,719,793	T.O.P.	5
	9/22/2014	9,680,031	T.O.P.	10
	9/8/2014	9,627,612	T.O.P.	10
	8/21/2014	9,552,453	47.75	10
	8/11/2014	9,512,921	T.O.P.	10
	7/25/2014	9,438,001	NM	5
	7/9/2014	9,374,875	T.O.P.	10-20
	6/27/2014	9,327,907	T.O.P.	10-20
	6/13/2014	9,279,991	T.O.P.	10-20
	5/30/2014	9,241,233	NM	10-20
	5/27/2014	9,236,547	NM	NM
	5/11/2014	9,216,882	NM	10-20
	4/24/2014	9,196,238	47.14	20
	4/10/2014	9,156,017	39.95	20
	3/25/2014	9,125,066	40.32	20
	3/21/2014	9,117,242	NM	NM
	3/10/2014	9,095,016	NM	NM
	3/10/2014	175,992	T.O.P.	35
	2/27/2014	159,528	NM	20
	2/26/2014	157,970	NM	NM
	2/12/2014	138,240	NM	35
	1/30/2014	127,210	NM	NM
	1/29/2014	127,180	38.7	35
	1/28/2014	127,180	NM	NM
	1/14/2014	127,133	39.74	20
	1/10/2014	121,034	NM	NM
	1/8/2014	118,810	39.75	35
	12/27/2013	101,731	41.63	20
	12/12/2013	73,509	NM	NM
	11/25/2013	52,687	41.5	35
	11/11/2013	27,220	T.O.P.	35
	11/5/2013	18,808	NM	NM
	10/28/2013	7,831	37.42	35
	10/18/2013	5,740		
	10/15/2013	155		

TABLE 4. SUMMARY OF GROUNDWATER FIELD PARAMETERS
FORMER PRICE'S VALLEY GOLD DAIRY, BERNALILLO, NEW MEXICO

Well Identification	Date	Flow Meter Reading (gallons)	Depth to Water (feet)	Field Nitrate (ppm)
EW-2	7/10/2015	6,768,068	NM	0
	6/24/2015	6,623,404	NM	0
	6/12/2015	6,517,850	NM	0-5
	5/28/2015	6,376,551	NM	0-5
	4/24/2015	6,060,000	38.77	0-5
	3/21/2015	5,754,530	NM	0
	3/6/2015	5,616,735	NM	0-5
	2/19/2015	5,493,835	NM	0-5
	2/6/2015	5,393,955	NM	0-5
	1/23/2015	5,285,127	39.15	0-5
	1/2/2015	5,125,385	NM	0-5
	12/19/2014	5,015,095	NM	0-5
	12/5/2014	4,922,323	NM	0-5
	11/21/2014	4,829,370	NM	NM
	11/14/2014	4,784,360	38.56	0-5
	10/30/2014	4,694,213	NM	0-5
	10/16/2014	4,624,453	37.30	0-5
	10/2/2014	4,623,137	40.61	0
	9/22/2014	4,551,766	NM	0
	9/8/2014	4,463,785	41.05	0
	8/21/2014	4,342,513	40.41	0-5
	8/11/2014	4,281,637	NM	0-5
	7/25/2014	4,172,899	NM	0-5
	7/9/2014	4,085,286	42.5	0-5
	6/27/2014	4,004,441	42.09	5
	6/13/2014	3,908,572	41.34	0-5
	5/30/2014	3,829,979	NM	5-10
	5/27/2014	3,813,392	NM	NM
	5/11/2014	3,732,025	NM	5
	4/24/2014	3,666,252	T.O.P.	5-10
	4/10/2014	3,613,758	T.O.P.	10
	3/25/2014	3,539,885	T.O.P.	5-10
	3/21/2014	3,528,092	NM	NM
	3/10/2014	3,491,362	NM	NM
	3/10/2014	402,917	46.95	10
	2/27/2014	371,628	NM	10
	2/26/2014	368,940	NM	NM
	2/12/2014	331,010	50.15	<5
	1/30/2014	291,157	NM	NM
	1/29/2014	289,231	T.O.P.	20
	1/28/2014	286,464	NM	NM
	1/14/2014	243,439	50.55	10
	1/10/2014	229,870	NM	NM
	1/8/2014	223,111	46	15
	12/27/2013	182,942	50.4	20
	12/12/2013	127,633	NM	NM
	11/25/2013	96,506	44.5	10-15
	11/11/2013	55,497	T.O.P.	20
	11/5/2013	41,237	NM	NM
	10/28/2013	19,430	36.05	20
	10/18/2013	5,444		
	10/15/2013	559		

TABLE 4. SUMMARY OF GROUNDWATER FIELD PARAMETERS
FORMER PRICE'S VALLEY GOLD DAIRY, BERNALILLO, NEW MEXICO

Well Identification	Date	Flow Meter Reading (gallons)	Depth to Water (feet)	Field Nitrate (ppm)
EW-3	7/10/2015	OFF	OFF	OFF
	6/24/2015	OFF	OFF	OFF
	6/12/2015	OFF	OFF	OFF
	5/28/2015	OFF	OFF	OFF
	4/24/2015	5,183,510	37.69	0-5
	3/21/2015	5,181,222	NM	NM
	3/6/2015	5,181,222	NM	NM
	2/19/2015	5,181,222	NM	NM
	2/6/2015	5,181,222	NM	0-5
	1/23/2015	5,028,453	37.25	0-5
	1/2/2015	4,811,566	NM	0-5
	12/19/2014	4,662,754	NM	0-5
	12/5/2014	4,533,018	NM	0-5
	11/21/2014	4,304,274	NM	NM
	11/14/2014	4,086,362	37.85	0-5
	10/30/2014	3,948,289	NM	0-5
	10/16/2014	3,820,033	36.52	0-5
	10/2/2014	3,697,780	36.35	0
	9/22/2014	3,603,848	NM	0-5
	9/8/2014	3,489,198	35.85	0
	8/21/2014	3,479,893	NM	NM
	8/11/2014	3,466,373	NM	0
	7/25/2014	3,268,676	NM	0-5
	7/9/2014	3,101,476	36.76	0-5
	6/27/2014	2,970,535	37.02	0-5
	6/13/2014	2,813,719	37.39	0-5
	5/30/2014	2,669,227	NM	0-5
	5/27/2014	2,637,622	NM	NM
	5/11/2014	2,478,924	NM	0
	4/24/2014	2,334,732	48.08	0-5
	4/10/2014	2,184,326	~48	0-5
	3/25/2014	2,037,160	~52	0-5
	3/21/2014	2,002,039	NM	NM
	3/10/2014	1,917,233	NM	NM
	3/10/2014	889,366	42.95	5-10
	2/27/2014	889,366	NM	0-5
	2/26/2014	883,121	NM	NM
	2/12/2014	794,940	42.5	5-10
	1/30/2014	713,372	NM	NM
	1/29/2014	713,343	T.O.P.	5
	1/28/2014	713,343	NM	NM
	1/14/2014	705,442	47.8	5-10
	1/10/2014	680,389	NM	NM
	1/8/2014	671,023	49.95	5
	12/27/2013	587,312	45.4	5
	12/12/2013	452,351	NM	NM
	11/25/2013	378,479	44.78	5
	11/11/2013	253,730	40.35	10
	11/5/2013	199,810	NM	NM
	10/28/2013	126,182	37.36	5-10
	10/18/2013	27,640		
	10/15/2013	310		

TABLE 4. SUMMARY OF GROUNDWATER FIELD PARAMETERS
FORMER PRICE'S VALLEY GOLD DAIRY, BERNALILLO, NEW MEXICO

Well Identification	Date	Flow Meter Reading (gallons)	Depth to Water (feet)	Field Nitrate (ppm)
EW-4	7/10/2015	12,052,981	NM	0
	6/24/2015	12,024,187	NM	0
	6/12/2015	11,983,510	NM	0
	5/28/2015	11,850,263	NM	0
	4/24/2015	11,536,200	45.72	0-5
	3/21/2015	11,437,084	NM	0
	3/6/2015	11,239,867	NM	0-5
	2/19/2015	11,063,782	NM	0-5
	2/6/2015	10,902,545	NM	0-5
	1/23/2015	10,751,475	45.61	0-5
	1/2/2015	10,533,332	NM	0-5
	12/19/2014	10,382,760	NM	0-5
	12/5/2014	10,250,684	NM	0-5
	11/21/2014	10,110,920	NM	NM
	11/14/2014	10,035,777	45.95	0-5
	10/30/2014	9,938,628	NM	0-5
	10/16/2014	9,794,192	44.30	0-5
	10/9/2014	9,734,391	NM	NM
	10/9/2014	1,787,212	NM	NM
	10/2/2014	1,787,212	NM	NM
	9/22/2014	1,787,212	NM	NM
	9/8/2014	1,726,004	36.72	0
	8/21/2014	1,554,070	36.55	0
	8/11/2014	1,467,745	NM	0
	7/25/2014	1,339,434	NM	0
	7/9/2014	1,232,341	40.84	0
	6/27/2014	1,125,421	42.48	0
	6/13/2014	995,618	42.27	0
	5/30/2014	875,379	NM	0
	5/27/2014	844,121	NM	NM
	5/11/2014	684,382	NM	0
	4/24/2014	535,613	46.97	0
	4/10/2014	357,484	48.11	0
	3/25/2014	192,449	47.76	0
	3/21/2014	155,133	NM	NM
	3/10/2014	59,837	NM	NM
	3/10/2014	919,953	43.7	0
	2/27/2014	919,942	NM	0-5
	2/26/2014	912,735	NM	NM
	2/12/2014	819,150	NM	5
	1/30/2014	736,045	NM	NM
	1/29/2014	731,561	T.O.P.	0
	1/28/2014	725,525	NM	NM
	1/14/2014	631,711	T.O.P.	0
	1/10/2014	600,440	NM	NM
	1/8/2014	600,412	T.O.P.	0
	12/27/2013	522,436	18.1	0
	12/12/2013	469,465	NM	NM
	11/25/2013	404,730	50.1	0-5
	11/11/2013	278,248	48.3	5
	11/5/2013	219,244	NM	NM
	10/28/2013	138,465	47.25	5
	10/18/2013	31,210		
	10/15/2013	393		

TABLE 4. SUMMARY OF GROUNDWATER FIELD PARAMETERS
FORMER PRICE'S VALLEY GOLD DAIRY, BERNALILLO, NEW MEXICO

Well Identification	Date	Flow Meter Reading (gallons)	Depth to Water (feet)	Field Nitrate (ppm)
NOTES: ppm = parts per million NM - Not Measured T.O.P. - Top of Pump Changed flow meters on 3/10/14				

TABLE 5. CALCULATION OF SYSTEM FLOW RATES
FORMER PRICE'S VALLEY GOLD DAIRY, BERNALILLO, NEW MEXICO

Well Identification	Date and Time	Elapsed Time (HH:MM:SS)	Elapsed Time (min)	Total elapsed Time (min)	Flow Meter Reading (gallons)	Extracted Volume Between Events (gallons)	Total Extracted Volume (gallons)	Average Flow Rate Between Events (gpm)	Average Flow Rate Since Start-up (gpm)	Quarterly Average Flow Rate (gpm)
EW-1	7/23/15 14:36	310:36:00	18636	930601	1,096,265	61,635	1,735,640	3.31	1.86	
	7/10/15 16:00	392:15:00	23535	911965	1,034,630	76,707	1,674,005	3.26	1.84	
	6/24/15 7:45	279:05:00	16745	888430	957,923	48,171	1,597,298	2.88	1.80	2.71
	6/12/15 16:40	364:14:00	21854	871685	909,752	52,950	1,549,127	2.42	1.78	
	5/28/15 12:26	290:26:00	17426	849831	856,802	40,163	1,496,177	2.30	1.76	
	5/16/15 10:00	527:18:00	31638	832405	816,639	71,659	1,456,014	2.26	1.75	
	4/24/15 10:42	811:48:00	48708	800767	744,980	106,264	1,384,355	2.18	1.73	
	3/21/15 14:54	358:17:00	21497	752059	638,716	46,286	1,278,091	2.15	1.70	
	3/6/15 16:37	362:22:00	21742	730562	592,430	41,927	1,231,805	1.93	1.69	2.15
	2/19/15 14:15	310:42:00	18642	708820	550,503	41,045	1,189,878	2.20	1.68	
	2/6/15 15:33	342:03:00	20523	690178	509,458	46,723	1,148,833	2.28	1.66	
	1/23/15 9:30	497:54:00	29874	669655	462,735	69,253	1,102,110	2.32	1.65	
	1/2/15 15:36	344:01:00	20641	639781	393,482	48,482	1,032,857	2.35	1.61	
	12/19/14 7:35	335:02:00	20102	619140	345,000	43,245	984,375	2.15	1.59	
	12/5/14 8:33	328:52:00	19732	599038	301,755	49,037	941,130	2.49	1.57	1.99
	11/21/14 15:41	176:20:00	10580	579306	252,718	19,694	892,093	1.86	1.54	
	11/14/14 7:21	355:48:00	21348	568726	233,024	52,785	872,399	2.47	1.53	
	10/30/14 11:33	331:45:00	19905	547378	180,239	107	819,614	0.01	1.50	
	10/16/14 15:48	175:48:00	10548	527473	180,132	4,140	819,507	0.39	1.55	
	10/9/14 8:00	0:00:00	0	516925	175,992	0	815,367	0.00	1.58	
	10/9/14 8:00	160:22:00	9622	516925	9,734,391	14,598	815,367	1.52	1.58	
	10/2/14 15:38	239:38:00	14378	507303	9,719,793	39,762	800,769	2.77	1.58	
	9/22/14 16:00	335:22:00	20122	492925	9,680,031	52,419	761,007	2.61	1.54	2.54
	9/8/14 16:38	432:48:00	25968	472803	9,627,612	75,159	708,588	2.89	1.50	
	8/21/14 15:50	239:54:00	14394	446835	9,552,453	39,532	633,429	2.75	1.42	
	8/11/14 15:56	411:32:00	24692	432441	9,512,921	74,920	593,897	3.03	1.37	
	7/25/14 12:24	387:03:00	23223	407749	9,438,001	63,126	518,977	2.72	1.27	
	7/9/14 9:21	285:39:00	17139	384526	9,374,875	46,968	455,851	2.74	1.19	
	6/27/14 11:42	339:25:00	20365	367387	9,327,907	47,916	408,883	2.35	1.11	
	6/13/14 8:17	336:52:00	20212	347022	9,279,991	38,758	360,967	1.92	1.04	
	5/30/14 7:25	72:00:00	4320	326810	9,241,233	4,686	322,209	1.08	0.99	1.69
	5/27/14 7:25	383:55:00	23035	322490	9,236,547	19,665	317,523	0.85	0.98	
	5/11/14 7:30	398:45:00	23925	299455	9,216,882	20,644	297,858	0.86	0.99	
	4/24/14 16:45	343:05:00	20585	275530	9,196,238	40,221	277,214	1.95	1.01	

TABLE 5. CALCULATION OF SYSTEM FLOW RATES
FORMER PRICE'S VALLEY GOLD DAIRY, BERNALILLO, NEW MEXICO

Well Identification	Date and Time	Elapsed Time (HH:MM:SS)	Elapsed Time (min)	Total elapsed Time (min)	Flow Meter Reading (gallons)	Extracted Volume Between Events (gallons)	Total Extracted Volume (gallons)	Average Flow Rate Between Events (gpm)	Average Flow Rate Since Start-up (gpm)	Quarterly Average Flow Rate (gpm)
EW-1 (Con't.)	4/10/14 9:40	385:50:00	23150	254945	9,156,017	30,951	236,993	1.34	0.93	
	3/25/14 7:50	92:35:00	5555	231795	9,125,066	7,824	206,042	1.41	0.89	
	3/21/14 11:15	260:45:00	15645	226240	9,117,242	22,226	198,218	1.42	0.88	
	3/10/14 14:30	3:30:00	210	210595	9,095,016	0	175,992	0.00	0.83	
	3/10/14 11:00	257:25:00	15445	210385	175,992	16,464	175,992	1.07	0.84	
	2/27/14 17:35	24:22:00	1462	194940	159,528	1,558	159,528	1.07	0.82	0.89
	2/26/14 17:13	338:08:00	20288	193478	157,970	19,730	157,970	0.97	0.82	
	2/12/14 15:05	318:45:00	19125	173190	138,240	11,030	138,240	0.58	0.80	
	1/30/14 8:20	16:25:00	985	154065	127210	30	127210	0.03	0.82	
	1/29/14 15:55	23:05:00	1385	153080	127180	0	127180	0.00	0.83	
	1/28/14 16:50	336:20:00	20180	151695	127180	47	127180	0.00	0.84	
	1/14/14 16:30	102:45:00	6,165	131,515	127,133	6099	127,133	0.99	0.97	
	1/10/14 9:45	40:40:00	2,440	125,350	121,034	2224	121,034	0.91	0.96	
	1/8/14 17:05	297:40:00	17,860	122,910	118,810	17079	118,810	0.96	0.97	
	12/27/13 7:25	350:25:00	21,025	105,050	101,731	28222	101,731	1.34	0.97	
	12/12/13 17:00	407:46:00	24,466	84,025	73,509	20822	73,509	0.85	0.87	
	11/25/13 17:14	338:41:00	20,321	59,559	52,687	25467	52,687	1.25	0.88	
	11/11/13 14:33	142:28:00	8,548	39,238	27,220	8412	27,220	0.98	0.69	
	11/5/13 16:05	190:39:00	11,439	30,690	18,808	10977	18,808	0.96	0.61	0.97
	10/28/13 17:26	4:26:00	266	19,251	7,831	352	7,831	1.32	0.40	
	10/28/13 13:00	245:28:00	14,728	18,985	7,479	1739	7,479	0.12	0.39	
	10/18/13 7:32	65:16:00	3,916	4,257	5,740	5080	5,740	1.30	1.31	
	10/15/13 14:16	4:55:00	295	341	660	434	660	1.47	1.48	
	10/15/13 9:21	0:46:00	46	46	226	71	226	1.54	1.54	
	10/15/13 8:35	---	---	---	155	155	155	---	---	

TABLE 5. CALCULATION OF SYSTEM FLOW RATES
FORMER PRICE'S VALLEY GOLD DAIRY, BERNALILLO, NEW MEXICO

Well Identification	Date and Time	Elapsed Time (HH:MM:SS)	Elapsed Time (min)	Total elapsed Time (min)	Flow Meter Reading (gallons)	Extracted Volume Between Events (gallons)	Total Extracted Volume (gallons)	Average Flow Rate Between Events (gpm)	Average Flow Rate Since Start-up (gpm)	Quarterly Average Flow Rate (gpm)
EW-2	7/23/15 14:16	310:16:00	18616	930582	6,813,225	45,157	3,724,780	2.43	4.00	
	7/10/15 16:00	392:07:00	23527	911966	6,768,068	144,664	3,679,623	6.15	4.03	
	6/24/15 7:53	279:04:00	16744	888439	6,623,404	105,554	3,534,959	6.30	3.98	5.80
	6/12/15 16:49	364:18:00	21858	871695	6,517,850	141,299	3,429,405	6.46	3.93	
	5/28/15 12:31	290:26:00	17426	849837	6,376,551	112,335	3,288,106	6.45	3.87	
	5/16/15 10:05	527:28:00	31648	832411	6,264,216	204,216	3,175,771	6.45	3.81	
	4/24/15 10:37	811:37:00	48697	800763	6,060,000	305,470	2,971,555	6.27	3.71	
	3/21/15 15:00	358:17:00	21497	752066	5,754,530	137,795	2,666,085	6.41	3.54	
	3/6/15 16:43	362:22:00	21742	730569	5,616,735	122,900	2,528,290	5.65	3.46	5.91
	2/19/15 14:21	310:41:00	18641	708827	5,493,835	99,880	2,405,390	5.36	3.39	
	2/6/15 15:40	342:28:00	20548	690186	5,393,955	108,828	2,305,510	5.30	3.34	
	1/23/15 9:12	497:30:00	29850	669638	5,285,127	159,742	2,196,682	5.35	3.28	
	1/2/15 15:42	344:02:00	20642	639788	5,125,385	110,290	2,036,940	5.34	3.18	
	12/19/14 7:40	335:15:00	20115	619146	5,015,095	92,772	1,926,650	4.61	3.11	
	12/5/14 8:25	328:43:00	19723	599031	4,922,323	92,953	1,833,878	4.71	3.06	4.65
	11/21/14 15:42	176:07:00	10567	579308	4,829,370	45,010	1,740,925	4.26	3.00	
	11/14/14 7:35	359:03:00	21543	568741	4,784,360	90,147	1,695,915	4.18	2.98	
	10/30/14 8:32	328:55:00	19735	547198	4,694,213	69,760	1,605,768	3.53	2.93	
	10/16/14 15:37	335:51:00	20151	527463	4,624,453	1,316	1,536,008	0.07	2.91	
	10/2/14 15:46	239:39:00	14379	507312	4,623,137	71,371	1,534,692	4.96	3.02	
	9/22/14 16:07	335:20:00	20120	492933	4,551,766	87,981	1,463,321	4.37	2.97	
	9/8/14 16:47	432:50:00	25970	472813	4,463,785	121,272	1,375,340	4.67	2.91	3.77
	8/21/14 15:57	239:53:00	14393	446843	4,342,513	60,876	1,254,068	4.23	2.81	
	8/11/14 16:04	411:34:00	24694	432450	4,281,637	108,738	1,193,192	4.40	2.76	
	7/25/14 12:30	387:33:00	23253	407756	4,172,899	87,613	1,084,454	3.77	2.66	
	7/9/14 8:57	285:07:00	17107	384503	4,085,286	80,845	996,841	4.73	2.59	
	6/27/14 11:50	339:28:00	20368	367396	4,004,441	95,869	915,996	4.71	2.49	
	6/13/14 8:22	336:51:00	20211	347028	3,908,572	78,593	820,127	3.89	2.36	
	5/30/14 7:31	72:04:00	4324	326817	3,829,979	16,587	741,534	3.84	2.27	3.64
	5/27/14 7:27	383:52:00	23032	322493	3,813,392	81,367	724,947	3.53	2.25	
	5/11/14 7:35	398:40:00	23920	299461	3,732,025	65,773	643,580	2.75	2.15	
	4/24/14 16:55	343:35:00	20615	275541	3,666,252	52,494	577,807	2.55	2.09	

TABLE 5. CALCULATION OF SYSTEM FLOW RATES
FORMER PRICE'S VALLEY GOLD DAIRY, BERNALILLO, NEW MEXICO

Well Identification	Date and Time	Elapsed Time (HH:MM:SS)	Elapsed Time (min)	Total elapsed Time (min)	Flow Meter Reading (gallons)	Extracted Volume Between Events (gallons)	Total Extracted Volume (gallons)	Average Flow Rate Between Events (gpm)	Average Flow Rate Since Start-up (gpm)	Quarterly Average Flow Rate (gpm)
EW-2 (Con't.)	4/10/14 9:20	385:25:00	23125	254926	3,613,758	73,873	525,313	3.19	2.06	
	3/25/14 7:55	92:39:00	5559	231801	3,539,885	11,793	451,440	2.12	1.95	
	3/21/14 11:16	260:46:00	15646	226242	3,528,092	36,730	439,647	2.35	1.94	
	3/10/14 14:30	3:23:00	203	210596	3,491,362	0	402,917	0.00	1.91	
	3/10/14 11:07	257:27:00	15447	210393	402,917	31,289	402,917	2.03	1.91	
	2/27/14 17:40	24:26:00	1466	194946	371,628	2,688	371,628	1.83	1.90	2.28
	2/26/14 17:14	338:21:00	20301	193480	368,940	37,930	368,940	1.87	1.90	
	2/12/14 14:53	318:10:00	19090	173179	331,010	39,853	331,010	2.09	1.91	
	1/30/14 8:43	16:36:00	996	154,089	291,157	1,926	291,157	1.93	1.89	
	1/29/14 16:07	23:02:00	1,382	153,093	289,231	2,767	289,231	2.00	1.89	
	1/28/14 17:05	336:20:00	20,180	151,711	286,464	43,025	286,464	2.13	1.88	
	1/14/14 16:45	103:02:00	6,182	131,531	243,439	13,569	243,439	2.19	1.85	
	1/10/14 9:43	40:28:00	2,428	125,349	229,870	6,759	229,870	2.78	1.83	
	1/8/14 17:15	297:12:00	17,832	122,921	223,111	40,169	223,111	2.25	1.81	
	12/27/13 8:03	350:50:00	21,050	105,089	182,942	55,309	182,942	2.63	1.74	
	12/12/13 17:13	408:10:00	24,490	84,039	127,633	31,127	127,633	1.27	1.51	
	11/25/13 17:03	338:19:00	20,299	59,549	96,506	41,009	96,506	2.02	1.61	
	11/11/13 14:44	142:37:00	8,557	39,250	55,497	14,260	55,497	1.67	1.40	
	11/5/13 16:07	190:35:00	11,435	30,693	41,237	21,807	41,237	1.91	1.33	1.85
	10/28/13 17:32	5:40:00	340	19,258	19,430	1,369	19,430	4.03	0.98	
	10/28/13 11:52	244:27:00	14,667	18,918	18,061	12,617	18,061	0.86	0.93	
	10/18/13 7:25	65:20:00	3,920	4,251	5,444	3,519	5,444	0.90	1.15	
	10/15/13 14:05	4:45:00	285	331	1,925	1,020	1,925	3.58	4.13	
	10/15/13 9:20	0:46:00	46	46	905	346	905	7.52	7.52	
	10/15/13 8:34	---	---	---	559	559	559	---	---	

TABLE 5. CALCULATION OF SYSTEM FLOW RATES
FORMER PRICE'S VALLEY GOLD DAIRY, BERNALILLO, NEW MEXICO

Well Identification	Date and Time	Elapsed Time (HH:MM:SS)	Elapsed Time (min)	Total elapsed Time (min)	Flow Meter Reading (gallons)	Extracted Volume Between Events (gallons)	Total Extracted Volume (gallons)	Average Flow Rate Between Events (gpm)	Average Flow Rate Since Start-up (gpm)	Quarterly Average Flow Rate (gpm)
EW-3	7/23/15 13:54	309:54:00	18594	930561	5,190,307	6,797	4,162,440	0.37	6.03	
	7/10/15 16:00	391:57:00	23517	911967	5,183,510	0	4,155,643	0.00	6.02	
	6/24/15 8:03	279:14:00	16754	888450	5,183,510	0	4,155,643	0.00	6.02	0.05
	6/12/15 16:49	364:15:00	21855	871696	5,183,510	0	4,155,643	0.00	6.02	
	5/28/15 12:34	290:24:00	17424	849841	5,183,510	0	4,155,643	0.00	6.02	
	5/16/15 10:10	527:43:00	31663	832417	5,183,510	0	4,155,643	0.00	6.02	
	4/24/15 10:27	811:25:00	48685	800754	5,183,510	2,288	4,155,643	0.05	6.02	
	3/21/15 15:02	358:19:00	21499	752069	5,181,222	0	4,153,355	0.00	6.02	
	3/6/15 16:43	362:15:00	21735	730570	5,181,222	0	4,153,355	0.00	6.02	1.18
	2/19/15 14:28	310:43:00	18643	708835	5,181,222	0	4,153,355	0.00	6.02	
	2/6/15 15:45	342:49:00	20569	690192	5,181,222	152,769	4,153,355	7.43	6.02	
	1/23/15 8:56	497:09:00	29829	669623	5,028,453	216,887	4,000,586	7.27	5.97	
	1/2/15 15:47	344:01:00	20641	639794	4,811,566	148,812	3,783,699	7.21	5.91	
	12/19/14 7:46	335:25:00	20125	619153	4,662,754	129,736	3,634,887	6.45	5.87	
	12/5/14 8:21	328:38:00	19718	599028	4,533,018	228,744	3,505,151	11.60	5.85	8.50
	11/21/14 15:43	175:59:00	10559	579310	4,304,274	217,912	3,276,407	20.64	5.66	
	11/14/14 7:44	359:18:00	21558	568751	4,086,362	138,073	3,058,495	6.40	5.38	
	10/30/14 8:26	329:01:00	19741	547193	3,948,289	128,256	2,920,422	6.50	5.34	
	10/16/14 15:25	335:33:00	20133	527452	3,820,033	122,253	2,792,166	6.07	5.29	
	10/2/14 15:52	239:38:00	14378	507319	3,697,780	93,932	2,669,913	6.53	5.26	
	9/22/14 16:14	335:18:00	20118	492941	3,603,848	114,650	2,575,981	5.70	5.23	
	9/8/14 16:56	432:56:00	25976	472823	3,489,198	9,305	2,461,331	0.36	5.20	5.03
	8/21/14 16:00	239:51:00	14391	446847	3,479,893	13,520	2,452,026	0.94	5.49	
	8/11/14 16:09	411:34:00	24694	432456	3,466,373	197,697	2,438,506	8.01	5.64	
	7/25/14 12:35	387:50:00	23270	407762	3,268,676	167,200	2,240,809	7.19	5.49	
	7/9/14 8:45	284:49:00	17089	384492	3,101,476	130,941	2,073,609	7.66	5.39	
	6/27/14 11:56	339:28:00	20368	367403	2,970,535	156,816	1,942,668	7.70	5.29	
	6/13/14 8:28	336:53:00	20213	347035	2,813,719	144,492	1,785,852	7.15	5.15	
	5/30/14 7:35	72:06:00	4326	326822	2,669,227	31,605	1,641,360	7.31	5.02	7.08
	5/27/14 7:29	383:48:00	23028	322496	2,637,622	158,698	1,609,755	6.89	4.99	
	5/11/14 7:41	398:41:00	23921	299468	2,478,924	144,192	1,451,057	6.03	4.84	
	4/24/14 17:00	344:00:00	20640	275547	2,334,732	150,406	1,306,865	7.29	4.74	

TABLE 5. CALCULATION OF SYSTEM FLOW RATES
FORMER PRICE'S VALLEY GOLD DAIRY, BERNALILLO, NEW MEXICO

Well Identification	Date and Time	Elapsed Time (HH:MM:SS)	Elapsed Time (min)	Total elapsed Time (min)	Flow Meter Reading (gallons)	Extracted Volume Between Events (gallons)	Total Extracted Volume (gallons)	Average Flow Rate Between Events (gpm)	Average Flow Rate Since Start-up (gpm)	Quarterly Average Flow Rate (gpm)
EW-3 (Con't.)	4/10/14 9:00	384:58:00	23098	254907	2,184,326	147,166	1,156,459	6.37	4.54	
	3/25/14 8:02	92:44:00	5564	231809	2,037,160	35,121	1,009,293	6.31	4.35	
	3/21/14 11:18	260:53:00	15653	226245	2,002,039	84,806	974,172	5.42	4.30	
	3/10/14 14:25	14:25:00	865	210592	1,917,233	0	889,366	0.00	4.22	
	3/10/14 0:00	246:13:00	14773	209727	889,366	0	889,366	0.00	4.24	
	2/27/14 17:47	24:31:00	1471	194954	889,366	6,245	889,366	4.25	4.56	3.66
	2/26/14 17:16	338:31:00	20311	193483	883,121	88,181	883,121	4.34	4.56	
	2/12/14 14:45	316:20:00	18980	173172	794,940	81,568	794,940	4.30	4.59	
	1/30/14 10:25	18:05:00	1,085	154,192	713,372	29	713,372	0.03	4.62	
	1/29/14 16:20	23:14:00	1,394	153,107	713,343	0	713,343	0.00	4.66	
	1/28/14 17:06	335:56:00	20,156	151,713	713,343	7,901	713,343	0.39	4.70	
	1/14/14 17:10	103:28:00	6,208	131,557	705,442	25,053	705,442	4.04	5.36	
	1/10/14 9:42	40:20:00	2,420	125,349	680,389	9,366	680,389	3.87	5.43	
	1/8/14 17:22	297:49:00	17,869	122,929	671,023	83,711	671,023	4.68	5.46	
	12/27/13 7:33	350:30:00	21,030	105,060	587,312	134,961	587,312	6.42	5.59	
	12/12/13 17:03	408:07:00	24,487	84,030	452,351	73,872	452,351	3.02	5.38	
	11/25/13 16:56	337:58:00	20,278	59,543	378,479	124,749	378,479	6.15	6.35	
	11/11/13 14:58	142:50:00	8,570	39,265	253,730	53,920	253,730	6.29	6.45	
	11/5/13 16:08	190:26:00	11,426	30,695	199,810	73,628	199,810	6.44	6.50	5.36
	10/28/13 17:42	6:11:00	371	19,269	126,182	2,168	126,182	5.84	6.53	
	10/28/13 11:31	244:12:00	14,652	18,898	124,014	96,374	124,014	6.58	6.55	
	10/18/13 7:19	65:35:00	3,935	4,246	27,640	26,004	27,640	6.61	6.44	
	10/15/13 13:44	4:25:00	265	311	1,636	731	1,636	2.76	4.26	
	10/15/13 9:19	0:46:00	46	46	905	595	905	12.93	12.93	
	10/15/13 8:33	---	---	---	310	310	310	---	---	

TABLE 5. CALCULATION OF SYSTEM FLOW RATES
FORMER PRICE'S VALLEY GOLD DAIRY, BERNALILLO, NEW MEXICO

Well Identification	Date and Time	Elapsed Time (HH:MM:SS)	Elapsed Time (min)	Total elapsed Time (min)	Flow Meter Reading (gallons)	Extracted Volume Between Events (gallons)	Total Extracted Volume (gallons)	Average Flow Rate Between Events (gpm)	Average Flow Rate Since Start-up (gpm)	Quarterly Average Flow Rate (gpm)
EW-4	7/23/15 14:46	310:46:00	18646	930614	12,117,304	64,323	5,030,240	3.45	5.40	
	7/10/15 16:00	391:57:00	23517	911968	12,052,981	28,794	4,965,917	1.22	5.44	
	6/24/15 8:03	279:09:00	16749	888451	12,024,187	40,677	4,937,123	2.43	5.56	4.47
	6/12/15 16:54	364:14:00	21854	871702	11,983,510	133,247	4,896,446	6.10	5.62	
	5/28/15 12:40	290:25:00	17425	849848	11,850,263	112,626	4,763,199	6.46	5.60	
	5/16/15 10:15	528:02:00	31682	832423	11,737,637	201,437	4,650,573	6.36	5.59	
	4/24/15 10:13	811:06:00	48666	800741	11,536,200	99,116	4,449,136	2.04	5.56	
	3/21/15 15:07	358:19:00	21499	752075	11,437,084	197,217	4,350,020	9.17	5.78	
	3/6/15 16:48	362:20:00	21740	730576	11,239,867	176,085	4,152,803	8.10	5.68	5.98
	2/19/15 14:28	310:37:00	18637	708836	11,063,782	161,237	3,976,718	8.65	5.61	
	2/6/15 15:51	343:10:00	20590	690199	10,902,545	151,070	3,815,481	7.34	5.53	
	1/23/15 8:41	496:49:00	29809	669609	10,751,475	218,143	3,664,411	7.32	5.47	
	1/2/15 15:52	344:01:00	20641	639800	10,533,332	150,572	3,446,268	7.29	5.39	
	12/19/14 7:51	335:36:00	20136	619159	10,382,760	132,076	3,295,696	6.56	5.32	
	12/5/14 8:15	328:30:00	19710	599023	10,250,684	139,764	3,163,620	7.09	5.28	6.73
	11/21/14 15:45	175:54:00	10554	579313	10,110,920	75,143	3,023,856	7.12	5.22	
	11/14/14 7:51	359:34:00	21574	568759	10,035,777	97,149	2,948,713	4.50	5.18	
	10/30/14 8:17	329:05:00	19745	547185	9,938,628	144,436	2,851,564	7.32	5.21	
	10/16/14 15:12	175:12:00	10512	527440	9,794,192	59,801	2,707,128	5.69	5.13	
	10/9/14 8:00	0:00:00	0	516928	9,734,391	0	2,647,327	0.00	5.12	
	10/9/14 8:00	160:00:00	9600	516928	1,787,211	0	2,647,327	0.00	5.12	
	10/2/14 16:00	239:20:00	14360	507328	1,787,211	0	2,647,327	0.00	5.22	
	9/22/14 16:40	335:37:00	20137	492968	1,787,211	61,207	2,647,327	3.04	5.37	4.30
	9/8/14 17:03	432:49:00	25969	472831	1,726,004	171,934	2,586,120	6.62	5.47	
	8/21/14 16:14	239:59:00	14399	446862	1,554,070	86,325	2,414,186	6.00	5.40	
	8/11/14 16:15	411:34:00	24694	432463	1,467,745	128,311	2,327,861	5.20	5.38	
	7/25/14 12:41	388:21:00	23301	407769	1,339,434	107,093	2,199,550	4.60	5.39	

TABLE 5. CALCULATION OF SYSTEM FLOW RATES
FORMER PRICE'S VALLEY GOLD DAIRY, BERNALILLO, NEW MEXICO

Well Identification	Date and Time	Elapsed Time (HH:MM:SS)	Elapsed Time (min)	Total elapsed Time (min)	Flow Meter Reading (gallons)	Extracted Volume Between Events (gallons)	Total Extracted Volume (gallons)	Average Flow Rate Between Events (gpm)	Average Flow Rate Since Start-up (gpm)	Quarterly Average Flow Rate (gpm)
EW-4 (Con't.)	7/9/14 8:20	284:18:00	17058	384468	1,232,341	106,920	2,092,457	6.27	5.44	
	6/27/14 12:02	339:29:00	20369	367410	1,125,421	129,803	1,985,537	6.37	5.40	
	6/13/14 8:33	336:53:00	20213	347041	995,618	120,239	1,855,734	5.95	5.35	
	5/30/14 7:40	72:09:00	4329	326828	875,379	31,258	1,735,495	7.22	5.31	15.23
	5/27/14 7:31	383:43:00	23023	322499	844,121	159,739	1,704,237	6.94	5.28	
	5/11/14 7:48	398:41:00	23921	299476	684,382	148,769	1,544,498	6.22	5.16	
	4/24/14 17:07	344:35:00	20675	275555	535,613	178,129	1,395,729	8.62	5.06	
	4/10/14 8:32	384:20:00	23060	254880	357,484	165,035	1,217,600	7.16	4.78	
	3/25/14 8:12	92:53:00	5573	231820	192,449	37,316	1,052,565	6.70	4.54	
	3/21/14 11:19	261:39:00	15699	226247	155,133	95,296	1,015,249	6.07	4.49	
	3/10/14 13:40	2:25:00	145	210548	59,837	0	919,953	0.00	4.37	
	3/10/14 11:15	257:20:00	15440	210403	919,953	11	919,953	0.00	4.37	
	2/27/14 17:55	24:37:00	1477	194963	919,942	7,207	919,942	4.88	4.72	4.75
	2/26/14 17:18	338:48:00	20328	193486	912,735	93,585	912,735	4.60	4.72	
	2/12/14 14:30	315:10:00	18910	173158	819,150	83,105	819,150	4.39	4.73	
	1/30/14 11:20	18:49:00	1129	154248	736,045	4,484	736,045	3.97	4.77	
	1/29/14 16:31	23:23:00	1403	153119	731,561	6,036	731,561	4.30	4.78	
	1/28/14 17:08	336:09:00	20169	151716	725,525	93,814	725,525	4.65	4.78	
	1/14/14 16:59	103:22:00	6202	131547	631,711	31,271	631,711	5.04	4.80	
	1/10/14 9:37	40:09:00	2409	125345	600,440	28	600,440	0.01	4.79	
	1/8/14 17:28	297:38:00	17858	122936	600,412	77,976	600,412	4.37	4.88	
	12/27/13 7:50	350:44:00	21044	105078	522,436	52,971	522,436	2.52	4.97	
	12/12/13 17:06	408:19:00	24499	84034	469,465	64,735	469,465	2.64	5.58	
	11/25/13 16:47	337:48:00	20268	59535	404,730	126,482	404,730	6.24	6.79	
	11/11/13 14:59	142:50:00	8570	39267	278,248	59,004	278,248	6.88	7.08	4.80
	11/5/13 16:09	190:24:00	11424	30697	219,244	80,779	219,244	7.07	7.13	
	10/28/13 17:45	6:29:00	389	19273	138,465	2,504	138,465	6.44	7.16	
	10/28/13 11:16	244:03:00	14643	18884	135,961	104,751	135,961	7.15	7.18	
	10/18/13 7:13	65:39:00	3939	4241	31,210	28,570	31,210	7.25	7.27	
	10/15/13 13:34	4:17:00	257	302	2,640	1,735	2,640	6.75	7.44	
	10/15/13 9:17	0:45:00	45	45	905	512	905	11.38	11.38	
	10/15/13 8:32	---	---	---	393	393	393	---	---	

TABLE 5. CALCULATION OF SYSTEM FLOW RATES
FORMER PRICE'S VALLEY GOLD DAIRY, BERNALILLO, NEW MEXICO

Well Identification	Date and Time	Elapsed Time (HH:MM:SS)	Elapsed Time (min)	Total elapsed Time (min)	Flow Meter Reading (gallons)	Extracted Volume Between Events (gallons)	Total Extracted Volume (gallons)	Average Flow Rate Between Events (gpm)	Average Flow Rate Since Start-up (gpm)	Quarterly Average Flow Rate (gpm)
Totalized	7/23/15 14:46	310:46:00	18646	930614	25,217,101	177,912	14,653,100	9.54	15.74	
	7/10/15 16:00	391:57:00	23517	911968	25,039,189	250,165	14,475,188	10.64	15.87	
	6/24/15 8:03	279:09:00	16749	888451	24,789,024	194,402	14,225,023	11.61	16.01	13.03
	6/12/15 16:54	364:14:00	21854	871702	24,594,622	327,496	14,030,621	14.99	16.09	
	5/28/15 12:40	290:25:00	17425	849848	24,267,126	265,124	13,703,125	15.22	16.12	
	5/16/15 10:15	528:02:00	31682	832423	24,002,002	477,312	13,438,001	15.07	16.14	
	4/24/15 10:13	811:06:00	48666	800741	23,524,690	513,138	12,960,689	10.54	16.18	
	3/21/15 15:07	358:19:00	21499	752075	23,011,552	381,298	12,447,551	17.74	16.55	
	3/6/15 16:48	362:20:00	21740	730576	22,630,254	340,912	12,066,253	15.68	16.51	15.23
	2/19/15 14:28	310:37:00	18637	708836	22,289,342	302,162	11,725,341	16.21	16.54	
	2/6/15 15:51	343:10:00	20590	690199	21,987,180	459,390	11,423,179	22.31	16.55	
	1/23/15 8:41	496:49:00	29809	669609	21,527,790	664,025	10,963,789	22.28	16.37	
	1/2/15 15:52	344:01:00	20641	639800	20,863,765	458,156	10,299,764	22.20	16.10	
	12/19/14 7:51	335:36:00	20136	619159	20,405,609	397,829	9,841,608	19.76	15.89	
	12/5/14 8:15	328:30:00	19710	599023	20,007,780	510,498	9,443,779	25.90	15.76	21.87
	11/21/14 15:45	175:54:00	10554	579313	19,497,282	357,759	8,933,281	33.90	15.42	
	11/14/14 7:51	359:34:00	21574	568759	19,139,523	378,154	8,575,522	17.53	15.08	
	10/30/14 8:17	329:05:00	19745	547185	18,761,369	342,559	8,197,368	17.35	14.98	
	10/16/14 15:12	335:12:00	20112	527440	18,418,810	202,108	7,854,809	10.05	14.89	
	10/2/14 16:00	239:20:00	14360	507328	19,827,921	205,065	7,652,701	14.28	15.08	
	9/22/14 16:40	335:37:00	20137	492968	19,622,856	316,257	7,447,636	15.71	15.10	
	9/8/14 17:03	432:49:00	25969	472831	19,306,599	377,670	7,131,379	14.54	15.08	15.64
	8/21/14 16:14	239:59:00	14399	446862	18,928,929	200,253	6,753,709	13.91	15.11	
	8/11/14 16:15	411:34:00	24694	432463	18,728,676	509,666	6,553,456	20.64	15.15	
	7/25/14 12:41	388:21:00	23301	407769	18,219,010	425,032	6,043,790	18.24	14.82	
	7/9/14 8:20	284:18:00	17058	384468	17,793,978	365,674	5,618,758	21.44	14.61	
	6/27/14 12:02	339:29:00	20369	367410	17,428,304	430,404	5,253,084	21.13	14.29	
	6/13/14 8:33	336:53:00	20213	347041	16,997,900	382,082	4,822,680	18.90	13.89	
	5/30/14 7:40	72:09:00	4329	326828	16,615,818	84,136	4,440,598	19.44	13.58	19.16
	5/27/14 7:31	383:43:00	23023	322499	16,531,682	419,469	4,356,462	18.22	13.50	
	5/11/14 7:48	398:41:00	23921	299476	16,112,213	379,378	3,936,993	15.86	13.14	
	4/24/14 17:07	344:35:00	20675	275555	15,732,835	421,250	3,557,615	20.37	12.91	

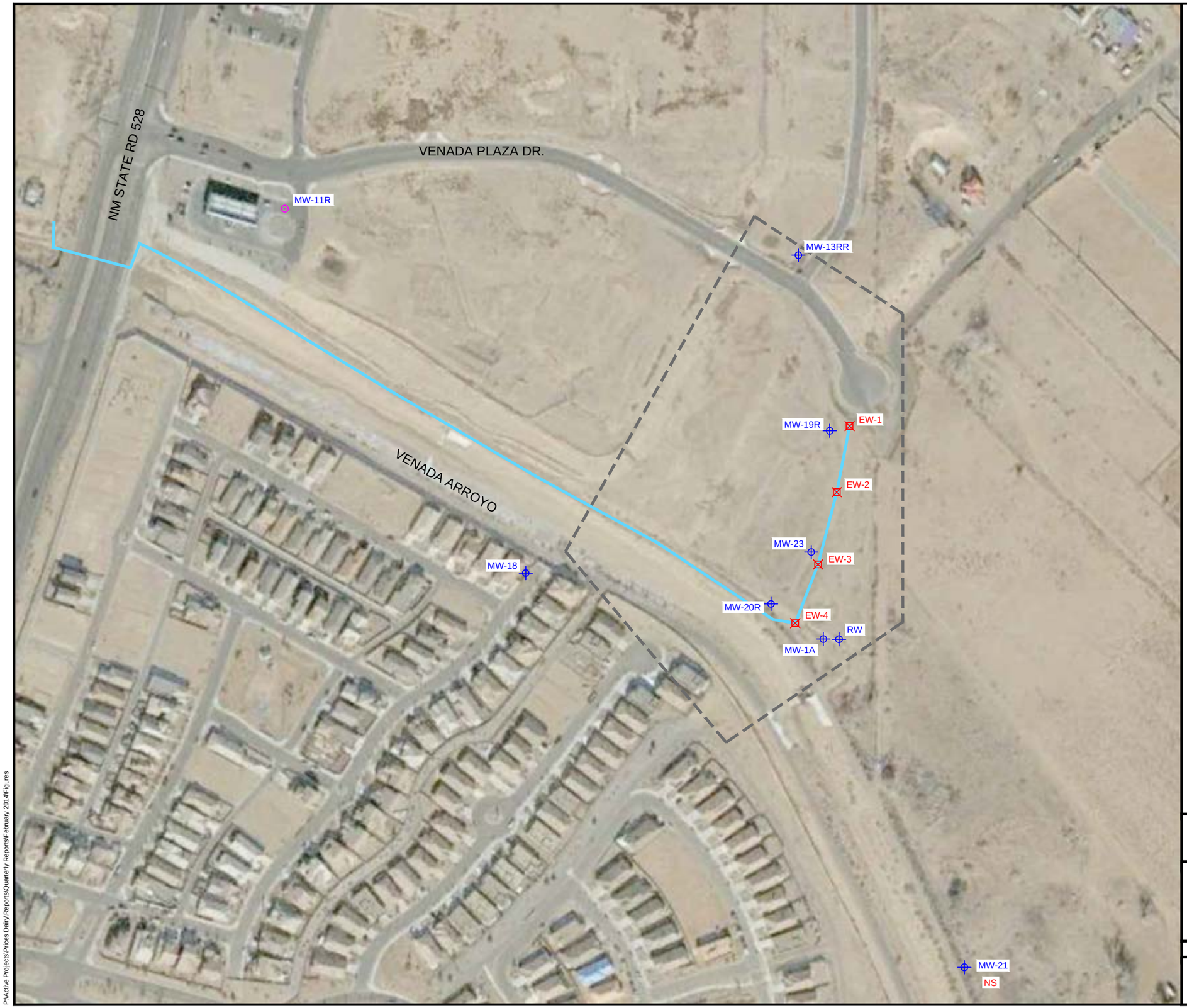
TABLE 5. CALCULATION OF SYSTEM FLOW RATES
FORMER PRICE'S VALLEY GOLD DAIRY, BERNALILLO, NEW MEXICO

Well Identification	Date and Time	Elapsed Time (HH:MM:SS)	Elapsed Time (min)	Total elapsed Time (min)	Flow Meter Reading (gallons)	Extracted Volume Between Events (gallons)	Total Extracted Volume (gallons)	Average Flow Rate Between Events (gpm)	Average Flow Rate Since Start-up (gpm)	Quarterly Average Flow Rate (gpm)
Totalized (Con't.)	4/10/14 8:32	384:20:00	23060	254880	15,311,585	417,025	3,136,365	18.08	12.30	
	3/25/14 8:12	92:53:00	5573	231820	14,894,560	92,054	2,719,340	16.52	11.72	
	3/21/14 11:19	261:39:00	15699	226247	14,802,506	239,058	2,627,286	15.23	11.61	
	3/10/14 13:40	13:40:00	820	210548	14,563,448	0	2,388,228	0.00	11.34	
	3/10/14 0:00	246:05:00	14765	209728	2,388,228	47,764	2,388,228	3.23	11.38	
	2/27/14 17:55	24:37:00	1477	194963	2,340,464	17,698	2,340,464	11.98	12.00	11.58
	2/26/14 17:18	338:48:00	20328	193486	2,322,766	239,426	2,322,766	11.78	12.00	
	2/12/14 14:30	315:10:00	18910	173158	2,083,340	215,556	2,083,340	11.40	12.02	
	1/30/14 11:20	18:49:00	1129	154248	1,867,784	6,469	1,867,784	5.73	12.10	
	1/29/14 16:31	23:23:00	1403	153119	1,861,315	8,803	1,861,315	6.27	12.15	
	1/28/14 17:08	336:09:00	20169	151716	1,852,512	144,787	1,852,512	7.18	12.20	
	1/14/14 16:59	103:22:00	6202	131547	1,707,725	75,992	1,707,725	12.25	12.97	
	1/10/14 9:37	40:09:00	2409	125345	1,631,733	18,377	1,631,733	7.63	13.01	
	1/8/14 17:28	297:38:00	17858	122936	1,613,356	218,935	1,613,356	12.26	13.11	
	12/27/13 7:50	350:44:00	21044	105078	1,394,421	271,463	1,394,421	12.90	13.26	
	12/12/13 17:06	408:19:00	24499	84034	1,122,958	190,556	1,122,958	7.78	13.35	
	11/25/13 16:47	337:48:00	20268	59535	932,402	317,707	932,402	15.68	15.64	
	11/11/13 14:59	142:50:00	8570	39267	614,695	135,596	614,695	15.82	15.62	12.97
	11/5/13 16:09	190:24:00	11424	30697	479,099	187,191	479,099	16.39	15.56	
	10/28/13 17:45	6:29:00	389	19273	291,908	6,393	291,908	16.43	15.07	
	10/28/13 11:16	244:03:00	14643	18884	285,515	215,481	285,515	14.72	15.04	
	10/18/13 7:13	65:39:00	3939	4241	70,034	63,173	70,034	16.04	16.18	
	10/15/13 13:34	4:17:00	257	302	6,861	3,920	6,861	15.25	18.03	
	10/15/13 9:17	0:45:00	45	45	2,941	1,524	2,941	33.87	33.87	
	10/15/13 8:32	---	---	---	1,417	1,417	1,417	---	---	

TABLE 5. CALCULATION OF SYSTEM FLOW RATES
FORMER PRICE'S VALLEY GOLD DAIRY, BERNALILLO, NEW MEXICO

Well Identification	Date and Time	Elapsed Time (HH:MM:SS)	Elapsed Time (min)	Total elapsed Time (min)	Flow Meter Reading (gallons)	Extracted Volume Between Events (gallons)	Total Extracted Volume (gallons)	Average Flow Rate Between Events (gpm)	Average Flow Rate Since Start-up (gpm)	Quarterly Average Flow Rate (gpm)
NOTES: gpm = Gallons per minute HH:MM:SS = Hours: Minutes: Seconds min = minutes Changed flow meter on 3/10/14										

FIGURES



LEGEND:

- EW-1 — EXTRACTION WELLS
- MW-23 — VALLEY FILL AQUIFER MONITORING WELL
- MW-11R — UPPER SANTA FE AQUIFER MONITORING WELL
- BOUNDARY OF AFFECTED GROUNDWATER
- DISCHARGE LINE

N

200 100 0 200

SCALE IN FEET

IMAGE SOURCE: GOOGLE 01/17/2013

FORMER PRICE'S VALLEY GOLD DAIRY
BERNALILLO, SANDOVAL COUNTY

FIGURE 1
SITE LAYOUT

PROJECT #:	1506901	PROJECT PHASE:	04	PROJECT MANAGER:	JS

EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC.
320 Gold Avenue, SW Suite 1210
Albuquerque, NM 87102
Phone: (505) 224-9013
Fax: (505) 224-9016

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LEGEND:

- EW-1 — EXTRACTION WELLS
- MW-23 — VALLEY FILL AQUIFER MONITORING WELL
- MW-11R — UPPER SANTA FE AQUIFER MONITORING WELL
- BOUNDARY OF AFFECTED GROUNDWATER
- DISCHARGE LINE
- GROUNDWATER FLOW DIRECTION

NOTE:

GROUNDWATER LEVELS IN THE EXTRACTION WELLS EXPERIENCES FREQUENT CHANGES DUE TO THE CYCLING OF THE PUMPS. THEREFORE, THESE ELEVATIONS WERE NOT USED TO FOR CONTOURING.

N

200 100 0 200

SCALE IN FEET

IMAGE SOURCE: GOOGLE 01/17/2013

FORMER PRICE'S VALLEY GOLD DAIRY
BERNALILLO, SANDOVAL COUNTY

FIGURE 2
GROUNDWATER ELEVATIONS
JULY 2015

PROJECT #:	1506901	PROJECT PHASE:	04	PROJECT MANAGER:	JS

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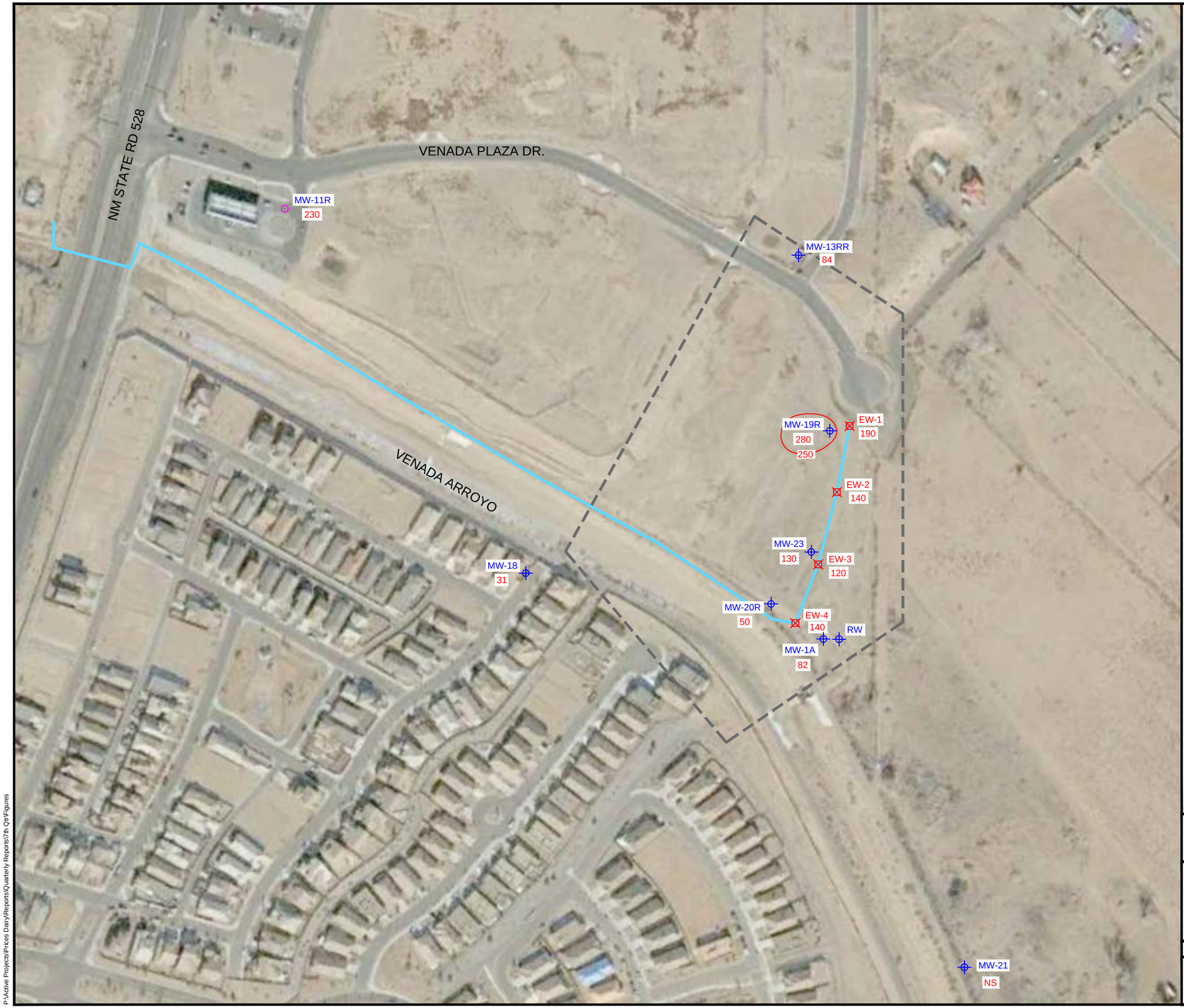

LEGEND:

EW-1	EXTRACTION WELLS
MW-23	VALLEY FILL AQUIFER MONITORING WELL
MW-11R	UPPER SANTA FE AQUIFER MONITORING WELL
	BOUNDARY OF AFFECTED GROUNDWATER
	DISCHARGE LINE
250	CHLORIDE CONCENTRATION CONTOUR
NS	NOT SAMPLED

NOTE:

VALUES NEXT TO WELLS INDICATE CHLORIDE CONCENTRATIONS IN GROUNDWATER SAMPLES (mg/L).

200 100 0 200

SCALE IN FEET

IMAGE SOURCE: GOOGLE 01/17/2013

FORMER PRICE'S VALLEY GOLD DAIRY
BERNALILLO, SANDOVAL COUNTY

FIGURE 3
CHLORIDE CONCENTRATIONS IN GROUNDWATER, JULY 2015

PROJECT #:	1506901	PROJECT PHASE:	04	PROJECT MANAGER:	JS

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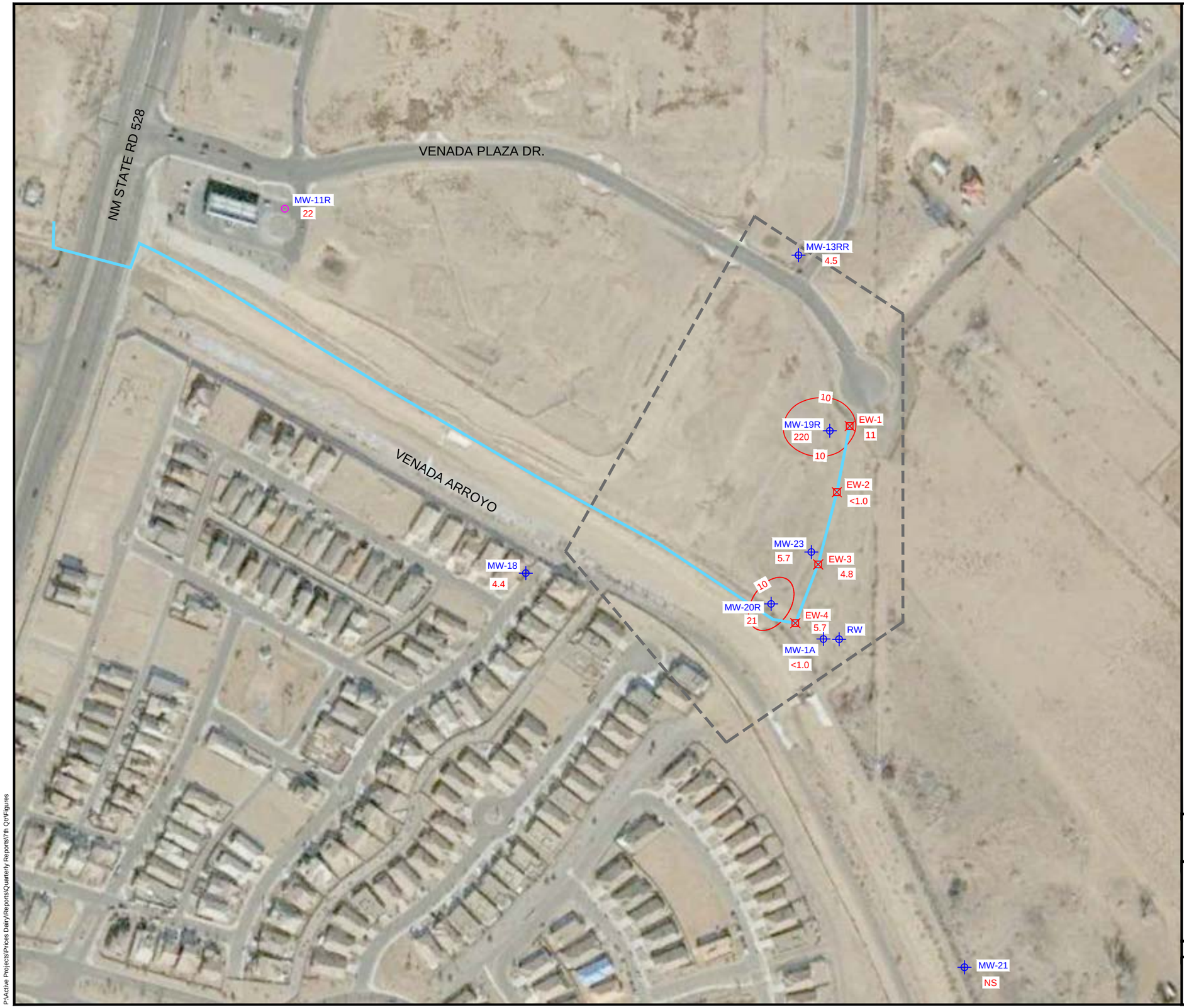

LEGEND:

EW-1	EXTRACTION WELLS
MW-23	VALLEY FILL AQUIFER MONITORING WELL
MW-11R	UPPER SANTA FE AQUIFER MONITORING WELL
	BOUNDARY OF AFFECTED GROUNDWATER
	DISCHARGE LINE
10	NITRATE CONCENTRATION CONTOUR MILLIGRAMS PER LITER (mg/L)
NS	NOT SAMPLED

NOTE:

VALUES NEXT TO WELLS INDICATE NITRATE CONCENTRATIONS IN GROUNDWATER SAMPLES (mg/L).

N

200 100 0 200

SCALE IN FEET

IMAGE SOURCE: GOOGLE 01/17/2013

FORMER PRICE'S VALLEY GOLD DAIRY
BERNALILLO, SANDOVAL COUNTY

FIGURE 4
NITRATE CONCENTRATIONS IN GROUNDWATER, JULY 2015

PROJECT #:	1506901	PROJECT PHASE:	04	PROJECT MANAGER:	JS

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LEGEND:

EW-1	EXTRACTION WELLS
MW-23	VALLEY FILL AQUIFER MONITORING WELL
MW-11R	UPPER SANTA FE AQUIFER MONITORING WELL
	BOUNDARY OF AFFECTED GROUNDWATER
	DISCHARGE LINE
1000	TOTAL DISSOLVED SOLIDS CONCENTRATION CONTOUR IN MILLIGRAMS PER LITER (mg/L)
NS	NOT SAMPLED

NOTE:

VALUES NEXT TO WELLS INDICATE TOTAL DISSOLVED SOLIDS (TDS) CONCENTRATIONS IN GROUNDWATER SAMPLES (mg/L).

N

200 100 0 200

SCALE IN FEET

IMAGE SOURCE: GOOGLE 01/17/2013

FORMER PRICE'S VALLEY GOLD DAIRY
BERNALILLO, SANDOVAL COUNTY

FIGURE 5
TDS IN GROUNDWATER
JULY 2015

PROJECT #:	1506901	PROJECT PHASE:	04	PROJECT MANAGER:	JS

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Albuquerque, NM 87102
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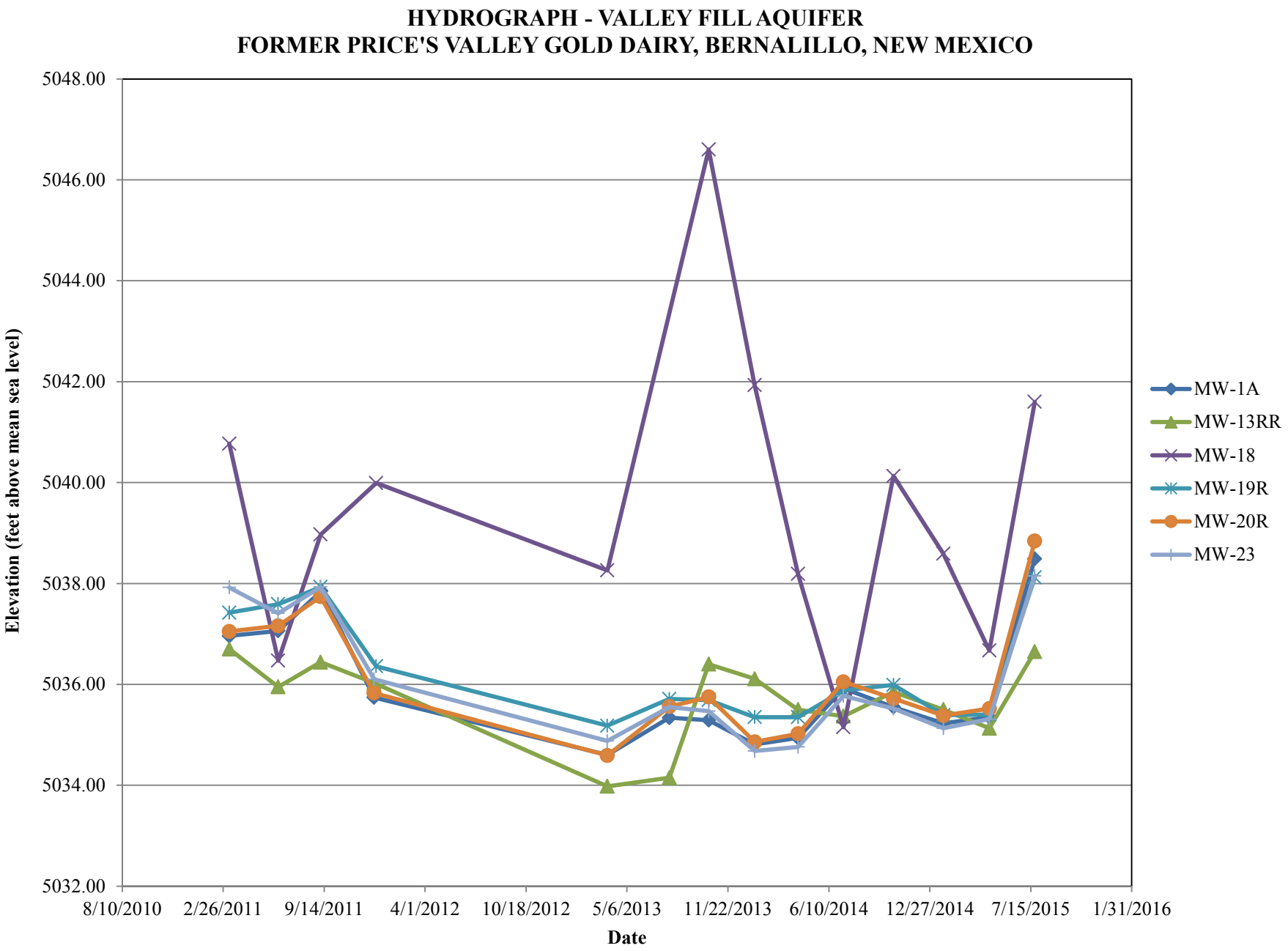
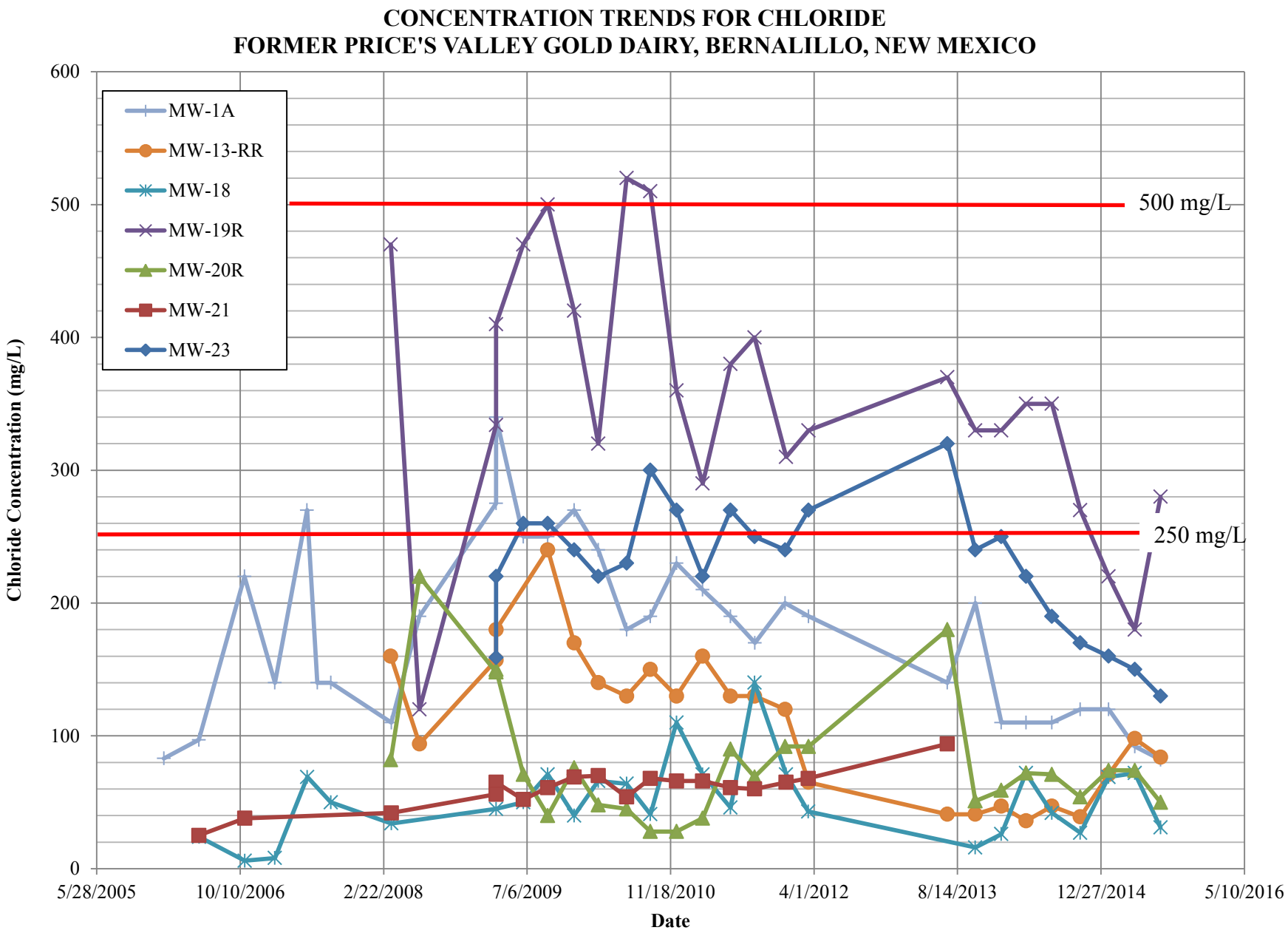
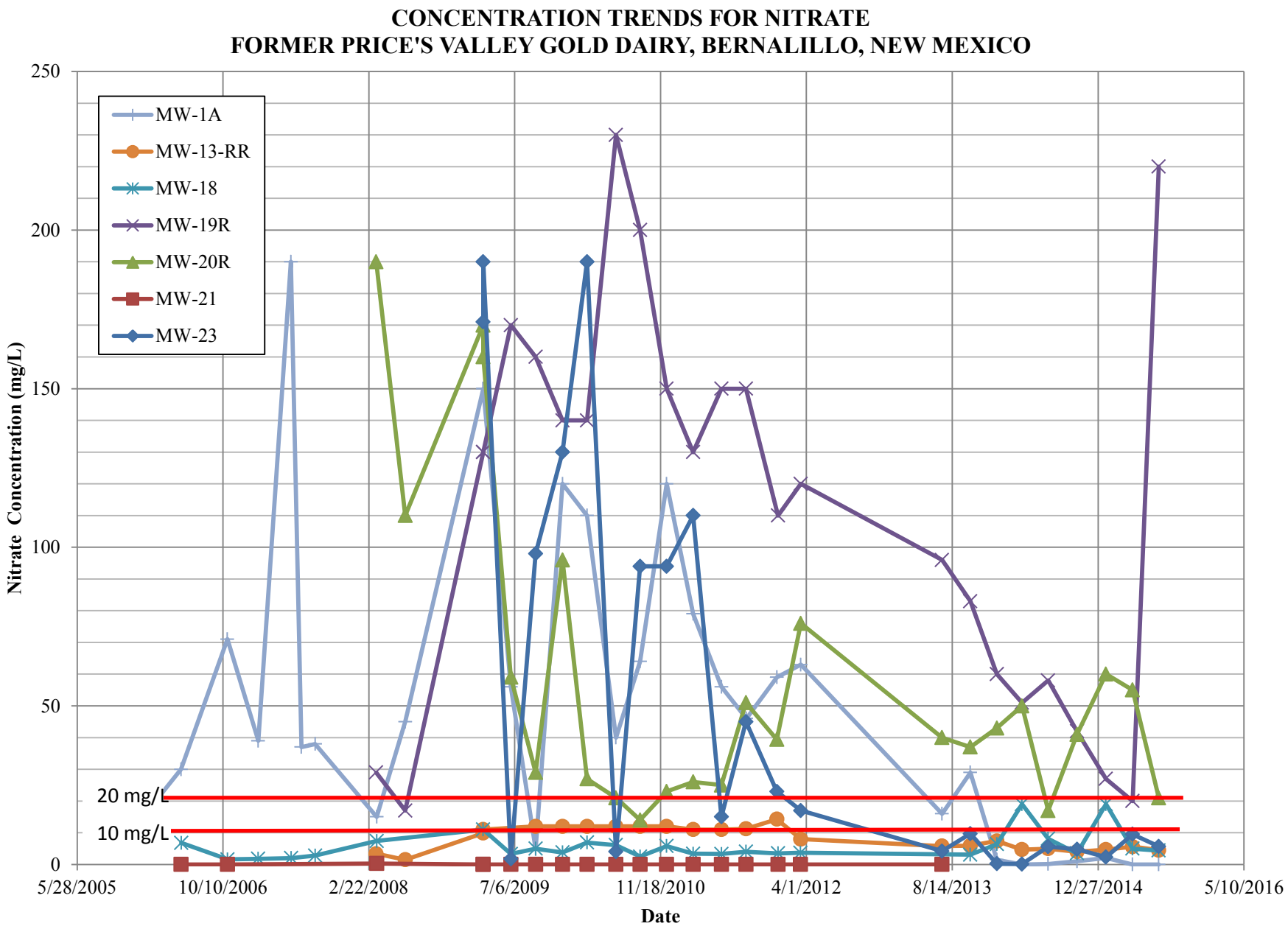
APPENDIX A
FIELD FORMS

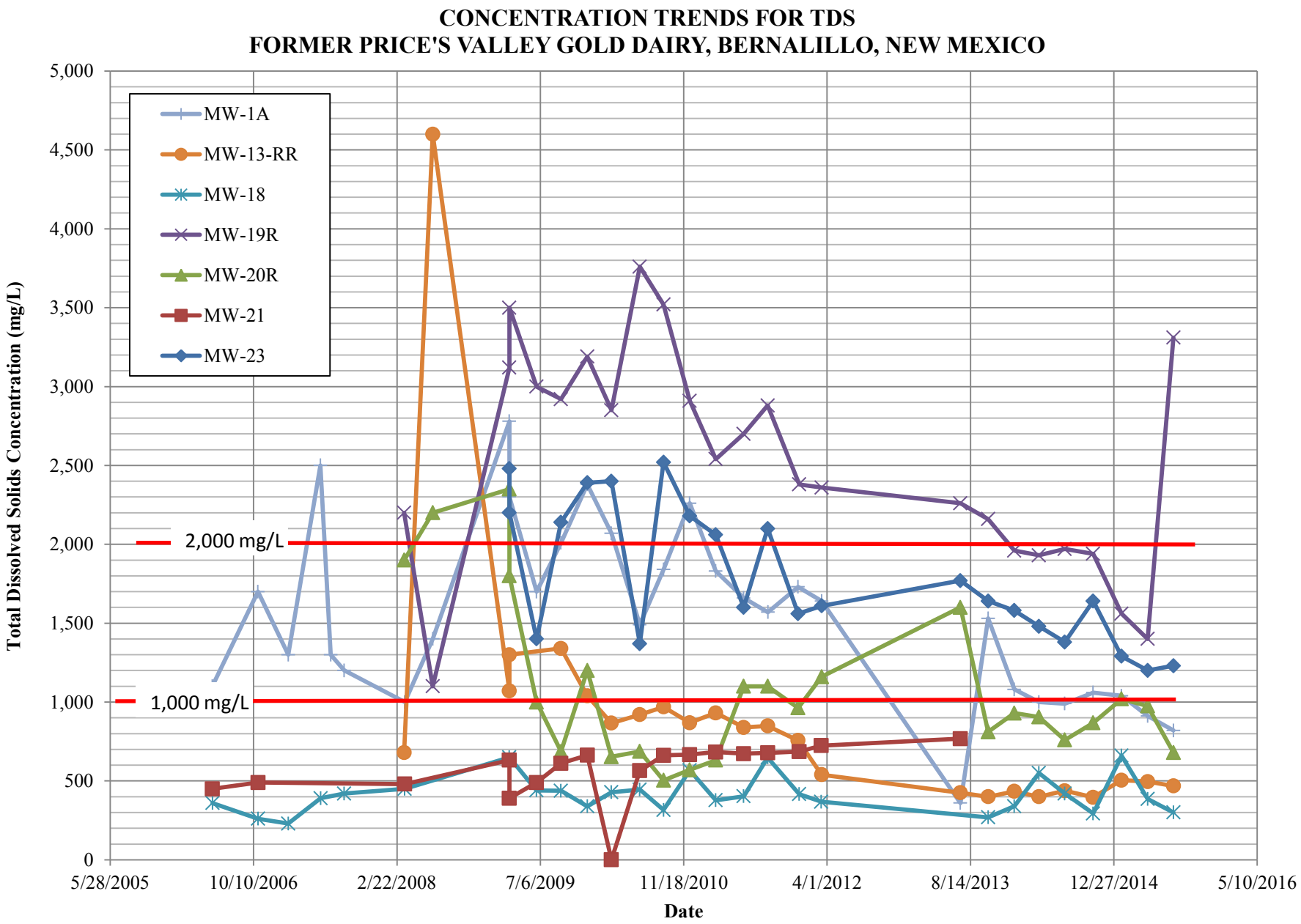
APPENDIX C
HYDROGRAPHS VALLEY FILL AQUIFER


HYDROGRAPH - VALLEY FILL AQUIFER
FORMER PRICE'S VALLEY GOLD DAIRY, BERNALILLO, NEW MEXICO
Elevation (feet above mean sea level)
5048.00
5046.00
5044.00
5042.00
5040.00
5038.00
5036.00
5034.00
5032.00
8/10/2010
2/26/2011
9/14/2011
4/1/2012
10/18/2012
5/6/2013
11/22/2013
6/10/2014
12/27/2014
7/15/2015
1/31/2016
Date
MW-1A
MW-13RR
MW-18
MW-19R
MW-20R
MW-23

APPENDIX D
CONCENTRATION TRENDS


CONCENTRATION TRENDS FOR CHLORIDE
FORMER PRICE'S VALLEY GOLD DAIRY, BERNALILLO, NEW MEXICO
Chloride Concentration (mg/L)
600
500
400
300
200
100
0
MW-1A
MW-13-RR
MW-18
MW-19R
MW-20R
MW-21
MW-23
500 mg/L
250 mg/L
5/28/2005
10/10/2006
2/22/2008
7/6/2009
11/18/2010
4/1/2012
8/14/2013
12/27/2014
5/10/2016
Date


CONCENTRATION TRENDS FOR NITRATE
FORMER PRICE'S VALLEY GOLD DAIRY, BERNALILLO, NEW MEXICO
Nitrate Concentration (mg/L)
250
200
150
100
50
0
MW-1A
MW-13-RR
MW-18
MW-19R
MW-20R
MW-21
MW-23
20 mg/L
10 mg/L
5/28/2005
10/10/2006
2/22/2008
7/6/2009
11/18/2010
4/1/2012
8/14/2013
12/27/2014
5/10/2016
Date


CONCENTRATION TRENDS FOR TDS
FORMER PRICE'S VALLEY GOLD DAIRY, BERNALILLO, NEW MEXICO
Total Dissolved Solids Concentration (mg/L)
5,000
4,500
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
0
MW-1A
MW-13-RR
MW-18
MW-19R
MW-20R
MW-21
MW-23
2,000 mg/L
1,000 mg/L
5/28/2005
10/10/2006
2/22/2008
7/6/2009
11/18/2010
4/1/2012
8/14/2013
12/27/2014
5/10/2016
Date

APPENDIX C

DECEMBER 2015
QUARTERLY GROUNDWATER MONITORING REPORT

EA Engineering, Science, & Technology, Inc., PBC
320 Gold Avenue SW, Suite 1300
Albuquerque, New Mexico 87102
Phone: (505) 224-9013

January 22, 2016

Justin Ball
New Mexico Environment Department
Ground Water Quality Bureau
Remediation Oversight Section
121 Tijeras Ave. NE, Suite 1000
Albuquerque, New Mexico 87102

Dear Mr. Ball:

On behalf of D&G Price Limited Partnership, EA Engineering, Science, and Technology, Inc., PBC is submitting the Quarterly Groundwater Monitoring Report for the Former Price's Valley Gold Dairy located in Sandoval County, New Mexico. The report discusses the 9th quarterly groundwater sampling event since approval of the *Work Plan for Groundwater Extraction* dated May 24, 2013.

Please let me know if you have any questions regarding the information provided in this report.

Sincerely,

Jay Snyder
Senior Hydrogeologist

Enclosure

Cc: John Price
Dudley Price
File

QUARTERLY GROUNDWATER MONITORING REPORT
FORMER PRICE'S VALLEY GOLD DAIRY
BERNALILLO, SANDOVAL COUNTY, NEW MEXICO

Prepared for:

Former Price's Valley Gold Dairy
Bernalillo, Sandoval County, New Mexico

Prepared by:

EA Engineering, Science,
and Technology, Inc., PBC
320 Gold Avenue SW, Suite 1210
Albuquerque, New Mexico 87102

January 2016

EA Project No. 1505701.02

EA Engineering, Science, & Technology, Inc., PBC
320 Gold Avenue SW, Suite 1300
Albuquerque, New Mexico 87102
Phone: (505) 224-9013

QUARTERLY GROUNDWATER MONITORING REPORT
FORMER PRICE'S VALLEY GOLD DAIRY
BERNALILLO, SANDOVAL COUNTY, NEW MEXICO

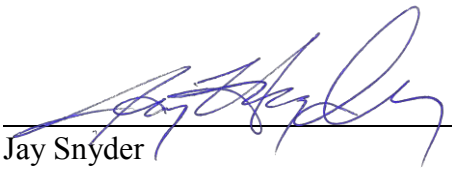
Prepared for:

Former Price's Valley Gold Dairy
Bernalillo, Sandoval County, New Mexico

Prepared by:

EA Engineering, Science,
and Technology, Inc., PBC
320 Gold Avenue SW, Suite 1210
Albuquerque, New Mexico

January 2016



1/22/16

Jay Snyder
Senior Hydrogeologist

Date

EA Project No. 1505701.02

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2.2 Groundwater Sampling 2

3.0 GROUNDWATER MONITORING RESULTS 3

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3.2 Groundwater Analytical Results and Trend Analysis 3

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Appendix D Concentration Trends

1.0 INTRODUCTION

On behalf of Former Price's Valley Gold Dairy (Price's Dairy), EA Engineering, Science, and Technology, Inc., PBC (EA) has prepared this 9th Quarterly Groundwater Monitoring Report for Price's Dairy located in Sandoval County, New Mexico. This report was completed in accordance with the *Groundwater Extraction Work Plan* dated May 24, 2013. The Work Plan (WP) was prepared to satisfy requirements stated in the New Mexico Administrative Code (NMAC), Title 20, 6.2 §4106 through §4110.

Price's Dairy is located on the east side of New Mexico Highway 528 in Bernalillo, New Mexico. Originally Ridge Dairy, a 200-cow dairy, was operated on the site from 1960 to 1973 and was owned by Stanley and Ron Ridge. In June 1973, Mr. Dudley Price purchased the Dairy and renamed it Price's Valley Gold Dairy. Mr. Price increased the size of the dairy to 1,000 to 1,200 cows and subsequently purchased 183 acres to the south to accommodate the increased discharge from the enlarged facility. Mr. Price closed the dairy in June 1998. The property was cleared of all structures by 2006. The property, except for Lot 5-B, has been sold and redeveloped into various lots that contain commercial businesses, including Wal-Mart, Firestone Tires, a gasoline station, a strip mall and several fast food restaurants. There are undeveloped lots within the southeastern portion of the Property.

The following scope of work was performed during this monitoring period:

- Gauged 7 monitoring wells;
- Collected groundwater samples from 7 monitoring wells, and analyzed samples for nitrate, chloride, and total dissolved solids (TDS) using EPA Method 300 and SM 2540 C, respectively;
- Prepared this Quarterly Groundwater Monitoring Report.

2.0 GROUNDWATER MONITORING ACTIVITIES

Groundwater monitoring activities included gauging and sampling 7 monitoring wells (MW-1A, MW-11R, MW-13RR, MW-18, MW-19R, MW-20R, and MW- 23). All wells are completed in Valley Fill Aquifer except MW-11R, which is in the Upper Santa Fe Aquifer.

2.1 Well Gauging

On December 4, 2015, 7 wells were gauged with an electronic water level indicator. Table 1 provides a summary of the groundwater gauging data collected from the monitoring network including historical data. A potentiometric surface map (Figure 2) was constructed based on the most recent data.

2.2 Groundwater Sampling

On December 4, 2015, 7 monitoring wells were sampled. Prior to sampling, the monitoring wells were purged using disposable bailers and new disposable rope or twine. Monitoring wells were purged three well volumes to the extent possible without bailing dry prior to sample collection. During purging, EA measured and recorded on sampling field forms field parameters (specific conductance, pH, dissolved oxygen, and temperature) with an Oakton or YSI water quality meter and an YSI dissolved oxygen meter. The meters were calibrated and/or checked against a standard in accordance with manufacturers' specifications prior to use. Purge water from the wells was ground discharged.

Groundwater samples were collected in the sample containers provided by Hall Environmental Analysis Laboratory (HEAL). Sample containers, preservatives, analytical methods, and holding times are specified in Table 2. All samples were preserved in accordance with method requirements, labeled, then immediately cooled to <6°C with ice and delivered under chain-of-custody to HEAL in Albuquerque, New Mexico. Wells were sampled from clean to dirty to the extent possible to minimize cross-contamination. All equipment was decontaminated between wells with an Alconox™ solution to further ensure sample quality. Copies of field forms are included in Appendix A. The analytical laboratory reports are provided in Appendix B.

3.0 GROUNDWATER MONITORING RESULTS

3.1 Hydraulic Gradient and Direction of Groundwater Flow

During this quarter groundwater elevations have increased in three wells (MW-1A, MW-11R, MW-20R) ranging between 0.11 ft. and 0.02 ft. Groundwater elevations have decreased in 4 wells (MW-13RR, MW-18, MW-19R, and MW-23) ranging between 1.39 ft. and 0.21 ft. Hydrographs for the Valley Fill Aquifer monitoring wells are included in Appendix C. Figure 2 provides the potentiometric surface map, as indicated by the contours the groundwater flow direction is towards the northeast. This reflects a reversion to the natural variable gradients that reverse from east to west, then west to east, based on water levels and hydraulic interaction with the river bed aquifer to the south east.

3.2 Groundwater Analytical Results and Trend Analysis

During this quarter concentrations of chloride, nitrate and total dissolved solids (TDS) were found above the New Mexico Water Quality Control Commission (NMWQCC) standards. Current and historical contaminant concentrations can be found in Table 3. Concentration trends can be found in Appendix D.

Chloride was below the NMWQCC standard of 250 milligrams per liter (mg/L) in all monitoring wells except for MW-19R. A map of the chloride distribution can be found in Figure 3.

Nitrate was above the NMWQCC standard of 10 mg/L in wells MW-11R (27 mg/L), MW-19R (50 mg/L), and MW-20R (27 mg/L). Concentrations in wells MW-19R decreased by 120 mg/L, while the concentrations in wells MW-11R and MW-20R increased by 5 and 6 mg/L respectively. Nitrate concentrations in wells MW-1A, MW-13RR, and MW-18 are below the standard of 10 mg/L. A map of the nitrate distribution can be found in Figure 4. Trend plots of nitrate concentrations are provided in Appendix D.

TDS concentrations were above the NMWQCC standard of 1,000 mg/L in wells MW-11R (1,080 mg/L), MW-1A (1,030 mg/L), MW-19R (1,880 mg/L), and MW-23 (2,760 mg/L). TDS concentrations in wells MW-1A, and MW-23 have been generally decreased since the 1st quarter sampling event. During this quarter TDS in wells, MW-1A and MW-23 increased by 210 mg/L, and 1530 mg/L, respectively. All other well TDS concentrations either decreased or remained below the standard. A map of the TDS distribution can be found in Figure 5. TDS concentration trends are provided in Appendix D.

4.0 CONCLUSIONS AND RECOMMENDATIONS

This groundwater monitoring event included gauging and sampling 7 monitoring wells. Based on the data collected the following conclusions and recommendations are presented:

- The hydraulic gradient appears to have reverted to its variable pattern of east to west and west to east depending of water levels in the river bed aquifer, and is currently to the northeast;

- Nitrate and TDS concentrations within the Valley Fill Aquifer exceed the NMWQCC standards; however, TDS concentrations are below the standard in all wells except MW-13RR, MW-18, and MW-20R;

- Except for well MW-19R, Chloride concentrations with in the Valley Fill Aquifer do not exceed the NMWQCC standards;

- MW-11R, completed in Upper Santa Fe Aquifer, had a concentration of 27 mg/L nitrate this event.

TABLES

TABLE 1. VALLEY FILL AQUIFER GROUNDWATER ELEVATION
FORMER PRICE'S VALLEY GOLD DAIRY, BERNALILLO, NEW MEXICO

Well Identification	Date Gauged	Casing Elevation (amsl)	Depth to Water (feet)	Groundwater Elevation (amsl)
MW-1A	12/4/2015	5072.26	33.88	5038.38
	7/23/2015		33.77	5038.49
	4/24/2015		36.91	5035.35
	1/23/2015		37.03	5035.23
	10/16/2014		36.71	5035.55
	7/9/2014		36.34	5035.92
	4/10/2014		37.32	5034.94
	1/14/2014		37.45	5034.81
	10/15/2013		36.97	5035.29
	7/29/2013		36.92	5035.34
	3/28/2013		37.66	5034.60
	12/22/2011		36.52	5035.74
	9/8/2011		34.41	5037.85
	6/15/2011		35.20	5037.06
	3/10/2011		35.30	5036.96
MW-11R	12/4/2015	5110.54	83.97	5026.57
	7/23/2015		83.95	5026.59
	4/24/2015		84.42	5026.12
	1/23/2015		84.69	5025.85
	10/16/2014		84.33	5026.21
	7/9/2014		84.52	5026.02
	4/10/2014		84.35	5026.19
	1/14/2014		84.72	5025.82
	7/29/2013		85.19	5025.35
	3/28/2013		85.12	5025.42
	12/22/2011		84.22	5026.32
	9/8/2011		84.07	5026.47
	6/15/2011		83.95	5026.59
	3/10/2011		83.89	5026.65

TABLE 1. VALLEY FILL AQUIFER GROUNDWATER ELEVATION
FORMER PRICE'S VALLEY GOLD DAIRY, BERNALILLO, NEW MEXICO

Well Identification	Date Gauged	Casing Elevation (amsl)	Depth to Water (feet)	Groundwater Elevation (amsl)
MW-13RR	12/4/2015	5090.20	53.34	5036.86
	7/23/2015		53.55	5036.65
	4/24/2015		55.07	5035.13
	1/23/2015		54.70	5035.50
	10/16/2014		54.35	5035.85
	7/9/2014		54.83	5035.37
	4/10/2014		54.70	5035.50
	1/14/2014		54.09	5036.11
	10/15/2013		53.80	5036.40
	7/29/2013		56.05	5034.15
	3/28/2013		56.22	5033.98
	12/22/2011		54.17	5036.03
	9/7/2011		53.76	5036.44
	6/15/2011		54.25	5035.95
	3/10/2011		53.50	5036.70
MW-18	12/4/2015	5080.80	37.81	5042.99
	7/23/2015		39.20	5041.60
	4/24/2015		44.13	5036.67
	1/23/2015		42.21	5038.59
	10/16/2014		40.67	5040.13
	7/9/2014		45.65	5035.15
	4/10/2014		42.61	5038.19
	1/14/2014		38.87	5041.93
	10/15/2013		34.20	5046.60
	7/29/2013		Dry	Dry
	3/28/2013		42.54	5038.26
	12/26/2011		40.81	5039.99
	9/7/2011		41.83	5038.97
	6/15/2011		44.33	5036.47
	3/10/2011		40.03	5040.77

TABLE 1. VALLEY FILL AQUIFER GROUNDWATER ELEVATION
FORMER PRICE'S VALLEY GOLD DAIRY, BERNALILLO, NEW MEXICO

Well Identification	Date Gauged	Casing Elevation (amsl)	Depth to Water (feet)	Groundwater Elevation (amsl)
MW-19R	12/4/2015	5072.69	33.90	5038.79
	7/23/2015		34.57	5038.12
	4/24/2015		37.29	5035.40
	1/23/2015		37.30	5035.39
	10/16/2014		36.70	5035.99
	7/9/2014		36.81	5035.88
	4/10/2014		37.34	5035.35
	1/14/2014		37.34	5035.35
	10/15/2013		37.00	5035.69
	7/29/2013		36.98	5035.71
	3/28/2013		37.51	5035.18
	12/26/2011		36.33	5036.36
	9/7/2011		34.76	5037.93
	6/15/2011		35.10	5037.59
	3/10/2011		35.27	5037.42
MW-20R	12/4/2015	5072.57	33.77	5038.80
	7/23/2015		33.73	5038.84
	4/24/2015		37.05	5035.52
	1/23/2015		37.19	5035.38
	10/16/2014		36.85	5035.72
	7/9/2014		36.52	5036.05
	4/10/2014		37.55	5035.02
	1/14/2014		37.71	5034.86
	10/15/2013		36.82	5035.75
	7/29/2013		37.01	5035.56
	3/28/2013		37.98	5034.59
	12/22/2011		36.74	5035.83
	9/7/2011		34.83	5037.74
	6/15/2011		35.41	5037.16
	3/10/2011		35.52	5037.05

TABLE 1. VALLEY FILL AQUIFER GROUNDWATER ELEVATION
FORMER PRICE'S VALLEY GOLD DAIRY, BERNALILLO, NEW MEXICO

Well Identification	Date Gauged	Casing Elevation (amsl)	Depth to Water (feet)	Groundwater Elevation (amsl)
MW-23	12/4/2015	5073.13	34.53	5038.60
	7/23/2015		34.98	5038.15
	4/24/2015		37.82	5035.31
	1/23/2015		38.00	5035.13
	10/16/2014		37.61	5035.52
	7/9/2014		37.36	5035.77
	4/10/2014		38.37	5034.76
	1/14/2014		38.45	5034.68
	10/15/2013		37.66	5035.47
	7/29/2013		37.58	5035.55
	3/28/2013		38.25	5034.88
	12/22/2011		37.03	5036.10
	9/7/2011		35.20	5037.93
	6/15/2011		35.72	5037.41
	3/10/2011		35.21	5037.92

NOTES:
amsl = feet above mean sea level

TABLE 2. SUMMARY OF SAMPLE ANALYTICAL AND QUALITY CONTROL REQUIREMENTS
FORMER PRICE'S VALLEY GOLD DAIRY, BERNALILLO, NEW MEXICO

Analyte	Method	Medium	Container and Minimum Volume	Preservation	Holding Time	Storage
Chloride	EPA 300	Water	250 ml poly	None	28 days	Cool < 6 ^{o}C
Nitrate/Nitrite	EPA 300	Water	250 ml poly	H_2SO_4 pH <2	28 days	Cool < 6 ^{o}C
TDS	SM 2540 C	Water	250 ml poly	None	7 days	Cool < 6 ^{o}C

NOTES:
°C = degrees Celcius
< = less than
EPA = U.S. Environmental Protection Agency
mL = milliliter
VOC = Volatile organic compounds
TDS = total dissolved solids

TABLE 3. SUMMARY OF ANALYTICAL DATA
FORMER PRICE'S VALLEY GOLD DAIRY, BERNALILLO, NEW MEXICO

Well Identification	Aquifer	Sample Date	Chloride (mg/L)	TDS (mg/L)	Nitrate (mg/L)
EW-1	VF	7/23/2015	190	1,300	11
		4/24/2015	170	1,420	17
		1/23/2015	220	1,460	17
		10/31/2014	230	1,610	27
		7/9/2014	240	1,520	18
		4/10/2014	290	1,750	31
		1/14/2014	390	2,140	57
		10/15/2013	350	2,320	85
EW-2	VF	7/23/2015	140	1,040	<1.0
		4/24/2015	160	1,100	<1.0
		1/23/2015	170	1,140	1.1
		10/16/2014	190	1,200	<1.0
		7/9/2014	200	1,270	3
		4/10/2014	200	1,380	7.6
		1/14/2014	310	1,770	23
		10/15/2013	330	1,960	21
EW-3	VF	7/23/2015	120	995	4.8
		4/24/2015	120	939	1.5
		1/23/2015	130	1,010	2.5
		10/16/2014	130	1,010	3.2
		7/9/2014	150	1,090	3.4
		4/10/2014	170	1,210	3.2
		1/14/2014	220	1,410	6.3
		10/15/2013	320	1,780	0.35
EW-4	VF	7/23/2015	140	1,070	5.7
		4/24/2015	83	710	1.1
		1/23/2015	77	691	1.1
		10/16/2014	89	776	<1.0
		7/9/2014	110	894	1.1
		4/10/2014	110	891	1.5
		1/14/2014	130	977	1.4
		10/15/2013	210	1,300	<0.10

TABLE 3. SUMMARY OF ANALYTICAL DATA
FORMER PRICE'S VALLEY GOLD DAIRY, BERNALILLO, NEW MEXICO

Well Identification	Aquifer	Sample Date	Chloride (mg/L)	TDS (mg/L)	Nitrate (mg/L)
MW-11R	USF	12/4/2015	250	1,080	27
		7/23/2015	230	1,250	22
		4/24/2015	200	1,070	20
		1/23/2015	210	1,070	20
		10/16/2014	190	1,120	19
		7/9/2014	230	1,110	20
		4/10/2014	210	1,060	19
		1/14/2014	220	1,020	20
		7/10/2013	220	1,030	21
		3/12/2012	190	1,060	29
		12/26/2011	190	1,030	26
		9/6/2011	220	1,180	33
		6/15/2011	240	1,260	38
		3/10/2011	240	1,180	41
		9/9/2010	210	1,180	38
		3/11/2010	260	1,190	42
		9/16/2009	270	1,210	35
		3/20/2009	270	2,000	34
		3/20/2009	230	1,270	36
		3/20/2008	200	1,000	19
MW-1A	VF	12/4/2015	110	1,030	7.9
		7/23/2015	82	820	<1.0
		4/24/2015	92	912	<1.0
		1/23/2015	120	1,040	2.1
		10/16/2014	120	1,060	1
		7/9/2014	110	990	0.14
		4/10/2014	110	1,000	<0.10
		1/14/2014	110	1,080	1.5
		10/15/2013	200	1,530	29
		7/10/2013	140	360	16
		3/13/2012	190	1,640	63
		12/22/2011	200	1,730	59
		9/8/2011	170	1,570	46
		6/15/2011	190	1,660	56
		3/10/2011	210	1,830	79
		12/9/2010	230	2,260	120
		9/9/2010	190	1,840	64
		6/18/2010	180	1,490	40
		3/11/2010	240	2,070	110
		12/17/2009	270	2,380	120
		9/16/2009	250	2,010	4.8

TABLE 3. SUMMARY OF ANALYTICAL DATA
FORMER PRICE'S VALLEY GOLD DAIRY, BERNALILLO, NEW MEXICO

Well Identification	Aquifer	Sample Date	Chloride (mg/L)	TDS (mg/L)	Nitrate (mg/L)
MW-1A (continued)		6/23/2009	250	1,700	56
		3/20/2009	340	2,300	150
		3/20/2009	275	2,780	150
		6/26/2008	190	1,400	45
		3/20/2008	110	1,000	15
		8/22/2007	140	1,200	38
		7/6/2007	140	1,300	37
		5/31/2007	270	2,500	190
		2/8/2007	140	1,300	39
		10/25/2006	220	1,700	71
		5/19/2006	97	1,100	30
		1/17/2006	83	980	16
		8/22/2005	91	1,000	21
		4/27/2005	88	880	4.0
		11/16/2004	98	1,100	16
		7/15/2004	89	820	11
		3/31/2004	98	800	25
		7/28/2003	100	790	0.21
		2/7/2003	120	930	4.6
		11/7/2002	150	1,000	12
		8/12/2002	150	1,100	18
		5/22/2002	180	1 300	24
		2/11/2002	210	1,100	13
		12/13/2001	150	790	0.15
		9/11/2001	200	920	6
		6/25/2001	170	820	21
		3/28/2001	180	850	4.9
		1/26/2001	170	730	2.0
		12/28/2000	210	1,900	130
		5/4/2000	190	1,200	31
		2/24/2000	170	920	14
		10/28/1999	200	1,300	56
		7/27/1999	190	870	ND
		4/22/1999	140	1,100	40
		1/27/1998	152	1,324	42.5

TABLE 3. SUMMARY OF ANALYTICAL DATA
FORMER PRICE'S VALLEY GOLD DAIRY, BERNALILLO, NEW MEXICO

Well Identification	Aquifer	Sample Date	Chloride (mg/L)	TDS (mg/L)	Nitrate (mg/L)
MW-13-RR	VF	12/4/2015	120	526	7.0
		7/23/2015	84	468	4.5
		4/24/2015	98	496	5.6
		1/23/2015	71	505	4.7
		10/16/2014	39	396	4.0
		7/9/2014	47	438	5.0
		4/10/2014	36	400	4.7
		1/14/2014	47	434	7.4
		10/15/2013	41	400	5.9
		7/10/2013	41	425	5.8
		3/13/2012	65	540	8.0
		12/22/2011	120	757	14.28
		9/7/2011	130	849	11.24
		6/15/2011	130	839	11
		3/10/2011	160	931	11
		12/9/2010	130	869	12
		9/9/2010	150	969	12
		6/18/2010	130	920	12
		3/11/2010	140	867	12
		12/17/2009	170	1,040	12
		9/16/2009	240	1,340	12
		3/20/2009	180	1,300	11
		3/20/2009	157	1,070	9.9
		6/26/2008	94	4,600	1.5
		3/18/2008	160	680	3.4

TABLE 3. SUMMARY OF ANALYTICAL DATA
FORMER PRICE'S VALLEY GOLD DAIRY, BERNALILLO, NEW MEXICO

Well Identification	Aquifer	Sample Date	Chloride (mg/L)	TDS (mg/L)	Nitrate (mg/L)
MW-18	VF	12/4/2015	23	289	6.4
		7/23/2015	31	300	4.4
		4/24/2015	72	386	5.0
		1/23/2015	69	660	19
		10/16/2014	27	294	3.5
		7/9/2014	42	420	8.1
		4/10/2014	72	550	19
		1/14/2014	26	340	6.4
		10/15/2013	16	269	3.1
		3/12/2012	43	368	3.7
		12/26/2011	71	416	3.5
		9/7/2011	140	648	4.0
		6/15/2011	46	403	3.3
		3/10/2011	71	378	3.4
		12/9/2010	110	567	5.8
		9/9/2010	41	316	2.5
		6/18/2010	64	445	6.1
		3/11/2010	66	428	6.9
		12/17/2009	40	339	3.8
		9/16/2009	71	438	5.0
		6/23/2009	50	440	3.3
		3/20/2009	45	650	11
		3/20/2008	34	450	7.4
		8/22/2007	50	420	2.8
		6/1/2007	69	390	2.0
		2/8/2007	8	230	1.8
		10/26/2006	6	260	1.6
		5/20/2006	24	360	6.8

TABLE 3. SUMMARY OF ANALYTICAL DATA
FORMER PRICE'S VALLEY GOLD DAIRY, BERNALILLO, NEW MEXICO

Well Identification	Aquifer	Sample Date	Chloride (mg/L)	TDS (mg/L)	Nitrate (mg/L)
MW-19R	VF	12/4/2015	230	1,880	50
		8/12/2015	260	2,460	170
		8/3/2015	210	2,650	140
		7/23/2015	280	3,310	220
		4/24/2015	180	1,400	20
		1/23/2015	220	1,560	27
		10/16/2014	270	1,940	42
		7/9/2014	350	1,970	58
		4/10/2014	350	1,930	51
		1/14/2014	330	1,960	60
		10/15/2013	330	2,160	83
		7/10/2013	370	2,260	96
		3/13/2012	330	2,360	120
		12/26/2011	310	2,380	110
		9/7/2011	400	2,880	150
		6/15/2011	380	2,700	150
		3/10/2011	290	2,540	130
		12/9/2010	360	2,910	150
		9/9/2010	510	3,520	200
		6/18/2010	520	3,760	230
		3/11/2010	320	2,850	140
		12/17/2009	420	3,190	140
		9/16/2009	500	2,920	160
		6/23/2009	470	3,000	170
		3/20/2009	410	3,500	130
		3/20/2009	334	3,120	130
		6/26/2008	120	1,100	17
		3/18/2008	470	2,200	29

TABLE 3. SUMMARY OF ANALYTICAL DATA
FORMER PRICE'S VALLEY GOLD DAIRY, BERNALILLO, NEW MEXICO

Well Identification	Aquifer	Sample Date	Chloride (mg/L)	TDS (mg/L)	Nitrate (mg/L)
MW-20R	VF	12/4/2015	24	554	27
		7/23/2015	50	680	21
		4/24/2015	74	975	55
		1/23/2015	74	1,020	60
		10/16/2014	54	868	41
		7/9/2014	71	760	17
		4/10/2014	72	905	50
		1/14/2014	59	930	43
		10/15/2013	51	811	37
		7/10/2013	180	1,600	40
		3/13/2012	92	1,160	76
		12/22/2011	92	963	39.39
		9/7/2011	69	1,100	51
		6/15/2011	90	1,100	25
		3/10/2011	38	632	26
		12/9/2010	28	570	23
		9/9/2010	28	504	14
		6/18/2010	45	687	21
		3/11/2010	48	653	27
		12/17/2009	76	1,200	96
		9/16/2009	40	686	29
		6/23/2009	71	1,000	59
		3/20/2009	150	1,800	160
		3/20/2009	148	2,350	170
		6/26/2008	220	2,200	110
		3/18/2008	82	1,900	190

TABLE 3. SUMMARY OF ANALYTICAL DATA
FORMER PRICE'S VALLEY GOLD DAIRY, BERNALILLO, NEW MEXICO

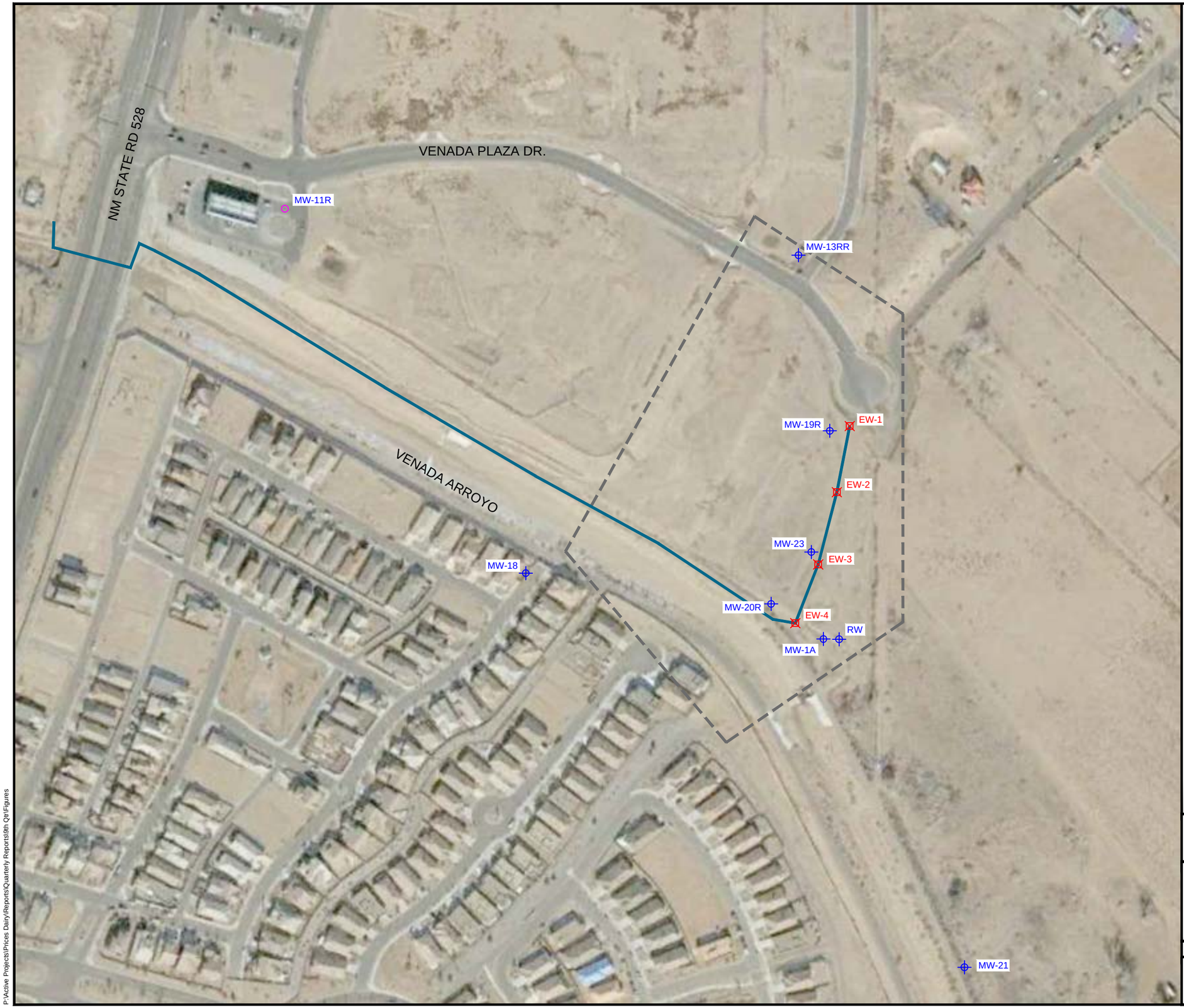
Well Identification	Aquifer	Sample Date	Chloride (mg/L)	TDS (mg/L)	Nitrate (mg/L)
MW-21	VF	7/10/2013	94	768	<0.10
		3/12/2012	68	724	ND
		12/26/2011	65	686	ND
		9/7/2011	60	678	ND
		6/15/2011	61	673	ND
		3/10/2011	66	683	ND
		12/9/2010	66	667	ND
		9/9/2010	68	662	ND
		6/18/2010	54	565	ND
		3/11/2010	70	0	ND
		12/17/2009	69	663	ND
		9/16/2009	61	612	ND
		6/23/2009	52	490	ND
		3/20/2009	65	390	ND
		3/20/2009	56	632	ND
		3/20/2008	42	480	0.29
		10/26/2006	38	490	ND
		5/19/2006	25	450	ND

TABLE 3. SUMMARY OF ANALYTICAL DATA
FORMER PRICE'S VALLEY GOLD DAIRY, BERNALILLO, NEW MEXICO

Well Identification	Aquifer	Sample Date	Chloride (mg/L)	TDS (mg/L)	Nitrate (mg/L)
MW-23	VF	12/4/2015	250	2,760	160
		7/23/2015	130	1,230	5.7
		4/24/2015	150	1,200	9.5
		1/23/2015	160	1,290	2.3
		10/16/2014	170	1,640	4.8
		7/9/2014	190	1,380	5.6
		4/10/2014	220	1,480	0.13
		1/14/2014	250	1,580	0.22
		10/15/2013	240	1,640	9.7
		7/10/2013	320	1,770	4.2
		3/13/12	270	1,610	17
		12/22/11	240	1,560	23
		9/7/11	250	2,100	45
		6/15/11	270	1,600	15
		3/10/11	220	2,060	110
		12/9/10	270	2,180	94
		9/9/10	300	2,520	94
		6/18/10	230	1,370	4.0
		3/11/10	220	2,400	190
		12/17/09	240	2,390	130
		9/16/09	260	2,140	98
		6/23/09	260	1,400	1.7
		3/20/09	220	2,200	190
		3/20/09	159	2,480	171
NMWQCC Standard			**250**	**1,000**	**10**

NOTES:
ate data are by EPA Method 300.0
EPA Method SM 2540 C
above NMWQCC standard if shaded
= milligrams per liter
= Total dissolved solids
ND = Non detect
Mexico Environment Department
w Mexico Water Quality Control
F = Upper Santa Fe
VF = Valley Fill

FIGURES



LEGEND:

- EXTRACTION WELLS
- MW-23 — VALLEY FILL AQUIFER MONITORING WELL
- MW-11R — UPPER SANTA FE AQUIFER MONITORING WELL
- BOUNDARY OF AFFECTED GROUNDWATER
- DISCHARGE LINE

N

200 100 0 200

SCALE IN FEET

IMAGE SOURCE: GOOGLE 01/17/2013

FORMER PRICE'S VALLEY GOLD DAIRY
BERNALILLO, SANDOVAL COUNTY

FIGURE 1
SITE LAYOUT

PROJECT #:	1505701	PROJECT PHASE:	02	PROJECT MANAGER:	TC

EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC.
320 Gold Avenue, SW Suite 1210
Albuquerque, NM 87102
Phone: (505) 224-9013
Fax: (505) 224-9016

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LEGEND:

- EXTRACTION WELLS
- MW-23 — VALLEY FILL AQUIFER MONITORING WELL
- MW-11R — UPPER SANTA FE AQUIFER MONITORING WELL
- BOUNDARY OF AFFECTED GROUNDWATER
- DISCHARGE LINE
- GROUNDWATER FLOW DIRECTION

NOTE:

GROUNDWATER LEVELS IN THE EXTRACTION WELLS EXPERIENCES FREQUENT CHANGES DUE TO THE CYCLING OF THE PUMPS. THEREFORE, THESE ELEVATIONS WERE NOT USED TO FOR CONTOURING.

200 100 0 200

SCALE IN FEET

IMAGE SOURCE: GOOGLE 01/17/2013

FORMER PRICE'S VALLEY GOLD DAIRY
BERNALILLO, SANDOVAL COUNTY

FIGURE 2
GROUNDWATER ELEVATIONS
DECEMBER 2015

PROJECT #:	1505701	PROJECT PHASE:	02	PROJECT MANAGER:	TC

320 Gold Avenue, SW Suite 1210
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Fax: (505) 224-9016
EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC.

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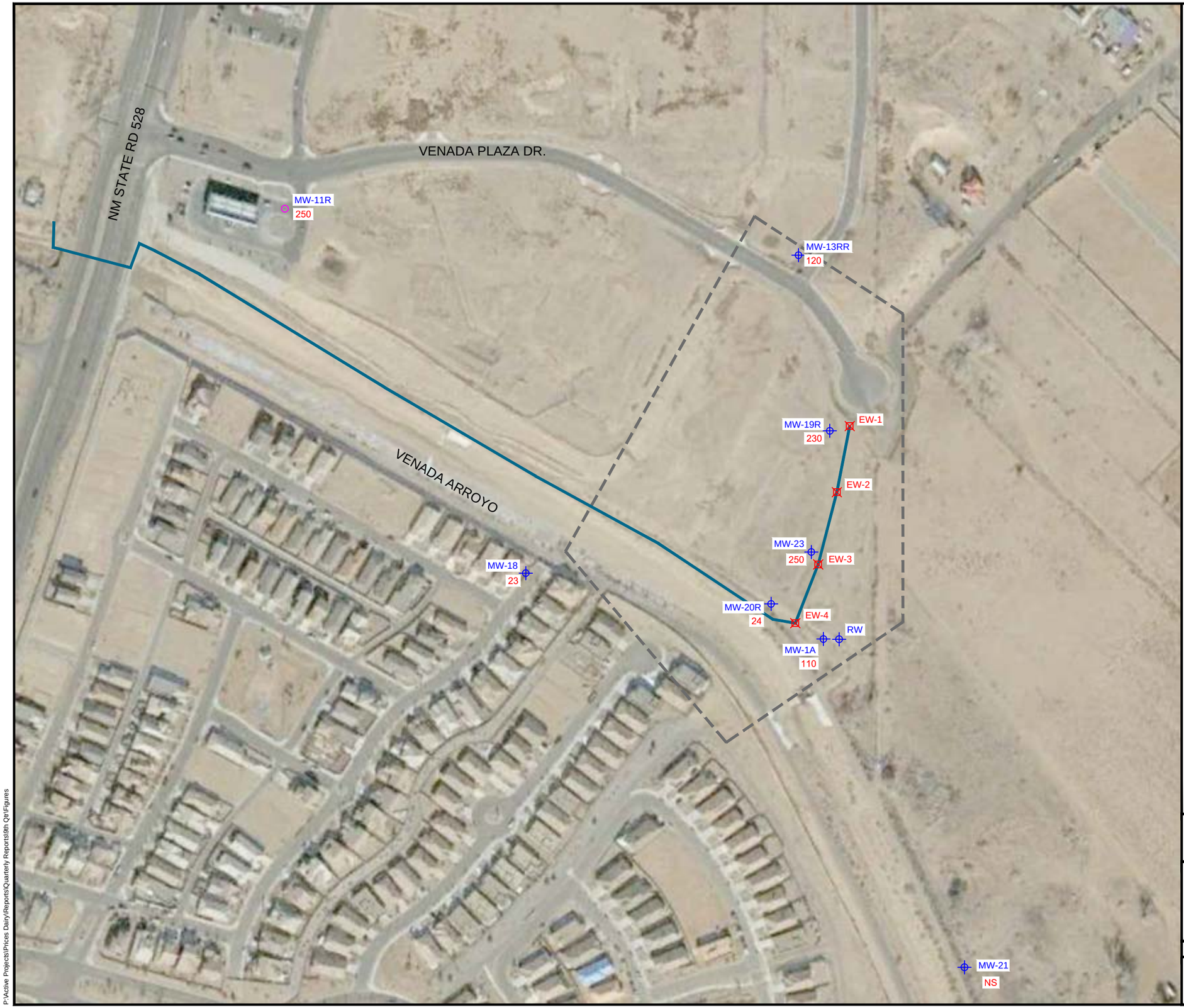

LEGEND:

- EXTRACTION WELLS
- MW-23 — VALLEY FILL AQUIFER MONITORING WELL
- MW-11R — UPPER SANTA FE AQUIFER MONITORING WELL
- BOUNDARY OF AFFECTED GROUNDWATER
- DISCHARGE LINE
- 250 — CHLORIDE CONCENTRATION CONTOUR
- NS — NOT SAMPLED

NOTE:

VALUES NEXT TO WELLS INDICATE CHLORIDE CONCENTRATIONS IN GROUNDWATER SAMPLES (mg/L).

N

200 100 0 200

SCALE IN FEET

IMAGE SOURCE: GOOGLE 01/17/2013

FORMER PRICE'S VALLEY GOLD DAIRY
BERNALILLO, SANDOVAL COUNTY

FIGURE 3
CHLORIDE CONCENTRATIONS IN GROUNDWATER, DECEMBER 2015

PROJECT #:	1505701	PROJECT PHASE:	02	PROJECT MANAGER:	TC

EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC.
320 Gold Avenue, SW Suite 1210
Albuquerque, NM 87102
Phone: (505) 224-9013
Fax: (505) 224-9016

P:\Active Projects\Prices Dairy\Reports\Quarterly Reports\8th Qtr\Figures

LEGEND:

- EXTRACTION WELLS
- MW-23 — VALLEY FILL AQUIFER MONITORING WELL
- MW-11R — UPPER SANTA FE AQUIFER MONITORING WELL
- BOUNDARY OF AFFECTED GROUNDWATER
- DISCHARGE LINE
- 10 — NITRATE CONCENTRATION CONTOUR MILLIGRAMS PER LITER (mg/L)
- NS — NOT SAMPLED

NOTE:

VALUES NEXT TO WELLS INDICATE NITRATE CONCENTRATIONS IN GROUNDWATER SAMPLES (mg/L).

N

200 100 0 200

SCALE IN FEET

IMAGE SOURCE: GOOGLE 01/17/2013

FORMER PRICE'S VALLEY GOLD DAIRY
BERNALILLO, SANDOVAL COUNTY

FIGURE 4
NITRATE CONCENTRATIONS IN GROUNDWATER, DECEMBER 2015

PROJECT #:	1505701	PROJECT PHASE:	02	PROJECT MANAGER:	TC

EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC.
320 Gold Avenue, SW Suite 1210
Albuquerque, NM 87102
Phone: (505) 224-9013
Fax: (505) 224-9016

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LEGEND:

- EXTRACTION WELLS
- MW-23 — VALLEY FILL AQUIFER MONITORING WELL
- MW-11R — UPPER SANTA FE AQUIFER MONITORING WELL
- BOUNDARY OF AFFECTED GROUNDWATER
- DISCHARGE LINE
- 1,000 — TOTAL DISSOLVED SOLIDS CONCENTRATION CONTOUR IN MILLIGRAMS PER LITER (mg/L)
- NS — NOT SAMPLED

NOTE:

VALUES NEXT TO WELLS INDICATE TOTAL DISSOLVED SOLIDS (TDS) CONCENTRATIONS IN GROUNDWATER SAMPLES (mg/L).

N

200 100 0 200

SCALE IN FEET

IMAGE SOURCE: GOOGLE 01/17/2013

FORMER PRICE'S VALLEY GOLD DAIRY
BERNALILLO, SANDOVAL COUNTY

FIGURE 5
TDS IN GROUNDWATER
DECEMBER 2015

PROJECT #:	1505701	PROJECT PHASE:	02	PROJECT MANAGER:	TC

EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC.
320 Gold Avenue, SW Suite 1210
Albuquerque, NM 87102
Phone: (505) 224-9013
Fax: (505) 224-9016

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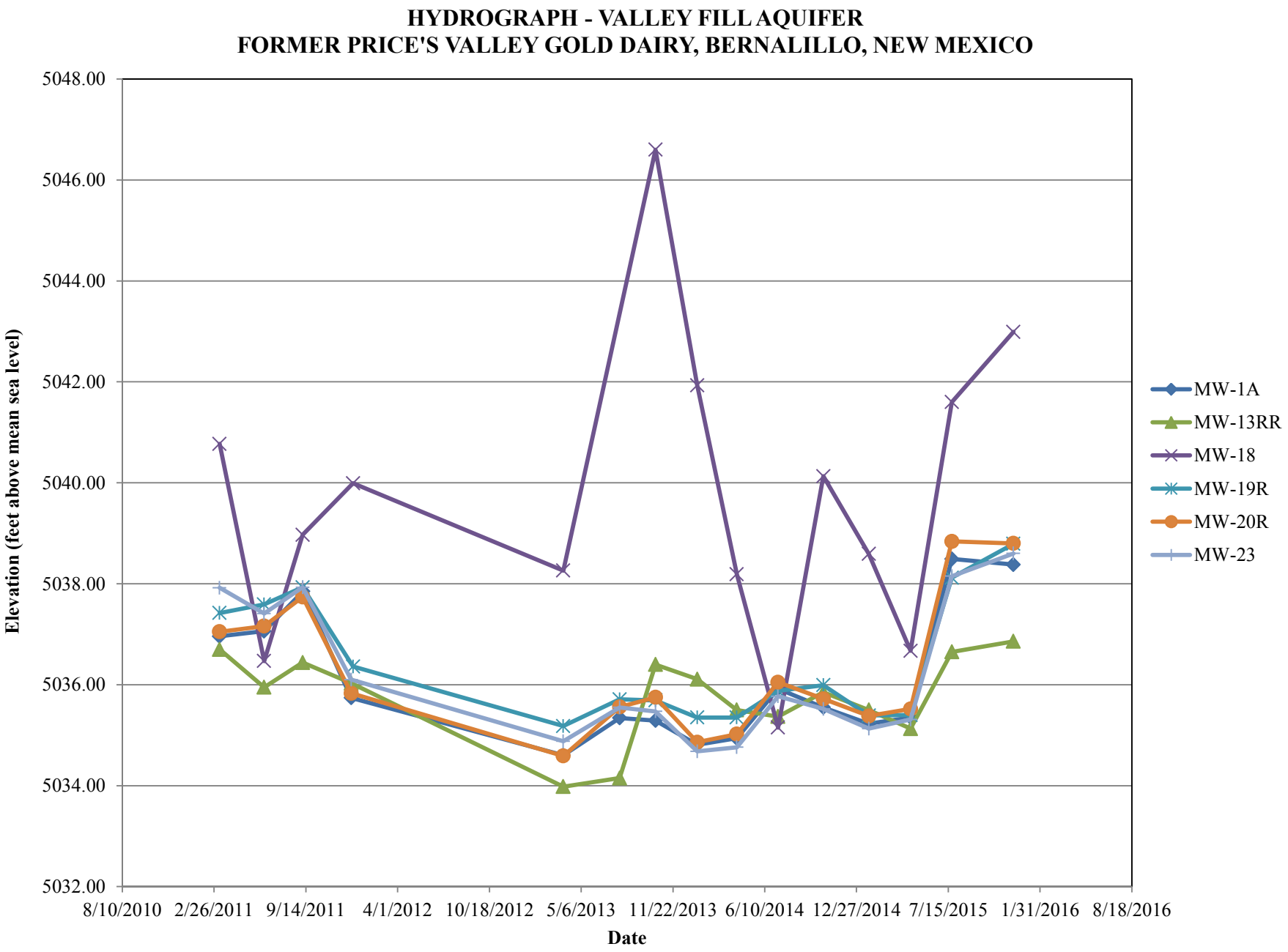
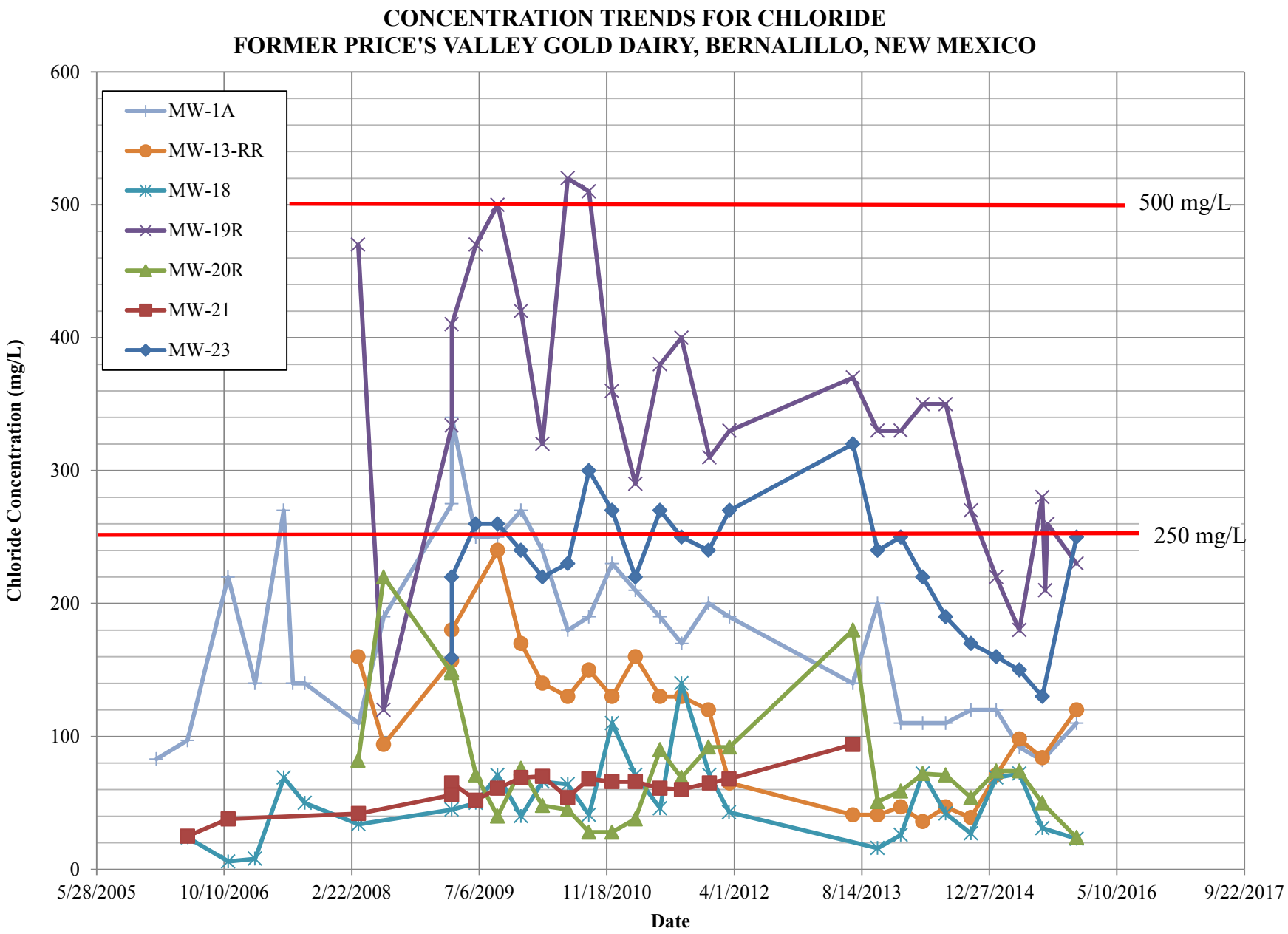
APPENDIX A
FIELD FORMS

APPENDIX C
HYDROGRAPHS VALLEY FILL AQUIFER


HYDROGRAPH - VALLEY FILL AQUIFER
FORMER PRICE'S VALLEY GOLD DAIRY, BERNALILLO, NEW MEXICO
Elevation (feet above mean sea level)
5048.00
5046.00
5044.00
5042.00
5040.00
5038.00
5036.00
5034.00
5032.00
8/10/2010
2/26/2011
9/14/2011
4/1/2012
10/18/2012
5/6/2013
11/22/2013
6/10/2014
12/27/2014
7/15/2015
1/31/2016
8/18/2016
Date
MW-1A
MW-13RR
MW-18
MW-19R
MW-20R
MW-23

APPENDIX D
CONCENTRATION TRENDS


CONCENTRATION TRENDS FOR CHLORIDE
FORMER PRICE'S VALLEY GOLD DAIRY, BERNALILLO, NEW MEXICO
Chloride Concentration (mg/L)
600
500
400
300
200
100
0
MW-1A
MW-13-RR
MW-18
MW-19R
MW-20R
MW-21
MW-23
500 mg/L
250 mg/L
5/28/2005
10/10/2006
2/22/2008
7/6/2009
11/18/2010
4/1/2012
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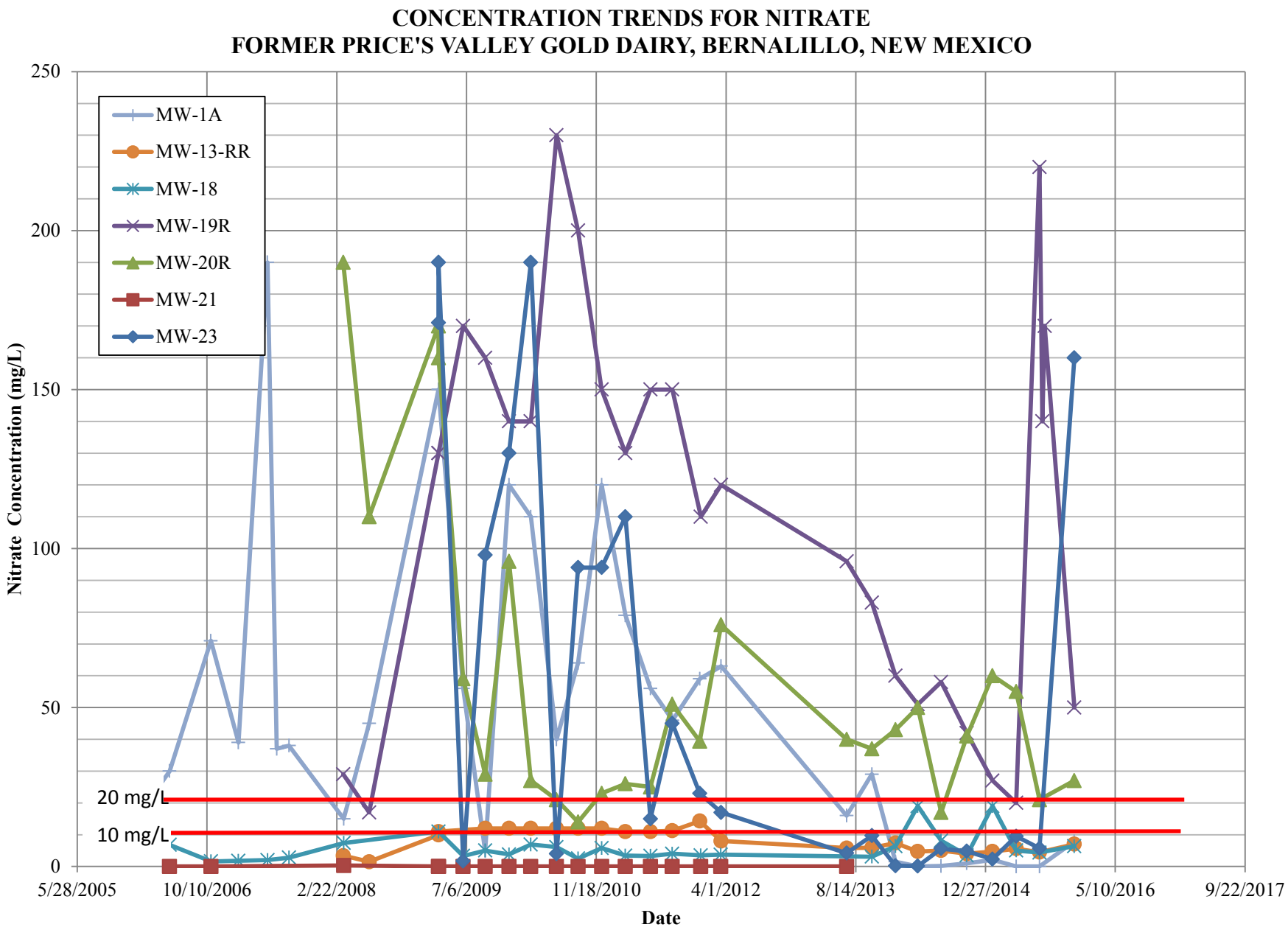
12/27/2014
5/10/2016
9/22/2017
Date


CONCENTRATION TRENDS FOR NITRATE
FORMER PRICE'S VALLEY GOLD DAIRY, BERNALILLO, NEW MEXICO
MW-1A
MW-13-RR
MW-18
MW-19R
MW-20R
MW-21
MW-23
20 mg/L
10 mg/L
Nitrate Concentration (mg/L)
250
200
150
100
50
0
5/28/2005
10/10/2006
2/22/2008
7/6/2009
11/18/2010
4/1/2012
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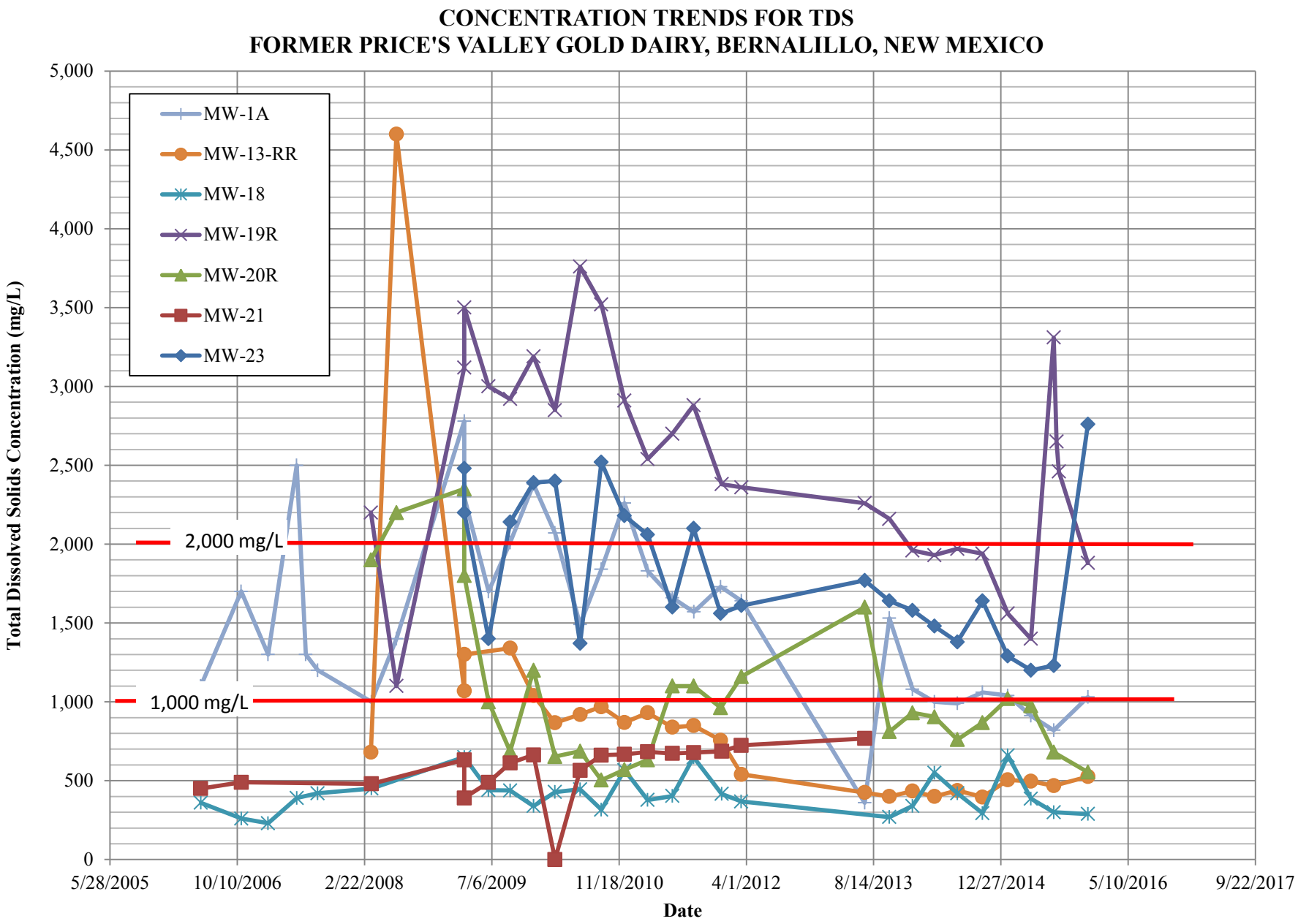
5/10/2016
9/22/2017
Date


CONCENTRATION TRENDS FOR TDS
FORMER PRICE'S VALLEY GOLD DAIRY, BERNALILLO, NEW MEXICO
Total Dissolved Solids Concentration (mg/L)
5,000
4,500
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
0
MW-1A
MW-13-RR
MW-18
MW-19R
MW-20R
MW-21
MW-23
2,000 mg/L
1,000 mg/L
5/28/2005
10/10/2006
2/22/2008
7/6/2009
11/18/2010
4/1/2012
8/14/2013
12/27/2014
5/10/2016
9/22/2017
Date

APPENDIX D

MODIFIED STAGE 2 ABATEMENT PLAN

AMENDED STAGE 2 ABATEMENT PLAN
FOR THE
PRICE'S VALLEY GOLD NORTH DAIRY SITE
SANDOVAL COUNTY, NEW MEXICO

Prepared For
VG Farms, Inc.
Albuquerque, New Mexico

Prepared By
METRIC Corporation
Los Lunas, New Mexico

October 2010

INTRODUCTION

The Price's Valley Gold North Dairy site is located on the east side of NM Hwy 528 in Bernalillo, New Mexico (FIGURE 1). A dairy was operated on the site from the late 1960's until 1998.

In February 1986 the New Mexico Environmental Improvement Division notified the Price's Valley Gold North Dairy that they were required to have a discharge plan. The dairy submitted an application in May 1986, and it was approved in July 1987. The initial samples collected from MW-1, near the dairy's East lagoon, had existing Nitrate concentrations of 43.8 mg/l in November 1986, 93.4 mg/l in February 1987 and 61.8 mg/l in December 1987 (average = 66 mg/l).

In June 1997, the New Mexico Environment Department was advised that the dairy was scheduled to be closed. As part of a site investigation conducted in June and August 1997, the New Mexico Environment Department provided guidance on the type of Corrective Action Plan it would require under the discharge permit in connection with the closure of the dairy. Initial work on the Corrective Activation Plan began in August 1997. The dairy was closed in June 1998. Beginning in October 1997, Glorieta Geoscience, Inc., Faith Engineering, Inc. and MJ Darr Consultant conducted numerous investigations and studies and developed at least three corrective action and abatement plans. The most recent corrective action, conducted during the summer of 2008, involved operating a nutrient injection system at the site. The objective of the injection system was to create a treatment wall within the aquifer which would de-nitrify the groundwater as it passed through the wall. In November 2008, METRIC Corporation was retained to conduct an independent evaluation of the historic investigation and remediation efforts at the site.

Successful remediation of any contaminated groundwater depends on five key factors. These factors are as follows:

- An accurate description of the geology and hydrology of the area.
- An accurate description of the sources of the contaminants.
- An accurate description of the horizontal and vertical extent of the contaminants in the aquifers.
- An accurate description of the movement of the contaminates in the aquifers.
- An accurate description of the fate of the contaminates in the aquifers. That is, are the contaminants subject to attenuation by processes occurring in the aquifer, or are they recalcitrant.

Any proposed remediation scheme can be judged by these factors.

Geology

John W. Hawley, PhD, CPG #2309 with Hawley Geomatters, Albuquerque, NM was retained by METRIC Corporation to develop a geologic model of the dairy site. Dr. Hawley was furnished the available soil boring and monitoring well logs for the site. He was also furnished with historic reports, historic water level data and historic water quality data.

Dr. Hawley's geologic model of the site is presented in APPENDIX A. The model is presented in the form of ten cross sections. Referring to Sections I-I' and J-J', which are oriented along the geologic dip in the upper Santa Fe beds (USF) and are located along the north bank of Venada Arroyo, five relevant geologic formations are identified. Starting with the oldest, the upper Santa Fe (USF) consists of alternating clay and sand beds and is dipping to the southeast at about 2° to 5°.

Overlying the USF in the western part of the cross section is older axial valley fill (VAO).

Overlying the upper Santa Fe (USF) on the terrace previously occupied by the dairy, is the Los Durans Gravel (TAd). The Los Durans Gravel consists of a clean gravel to cobble layer with its base at about elevation 5057.

The younger Venada Arroyo Fill (VAy) is inset into the VAO, TAd and USF. The Venada Arroyo Fill consists of sand and gravel derived from the Venada Arroyo watershed and from the Los Durans Gravel.

The Rio Grande Valley fill (RG) overlies the Upper Santa Fe (USF) in the eastern part of the cross section. The Rio Grande Valley Fill consists of gravel, sand, and clay and has a base elevation of about 4990.

Hydrology

Evaluation of the site geology and historic water level data indicates that there are two distinct aquifers at the site. Referring to FIGURES 1, 2 and 3, the two aquifers are identified as follows.

The older upper Santa Fe aquifer is designated the USF-aquifer, Monitoring Wells 6, 8, 9, 11, 12, 14, 15 and 19 were completed in USF aquifer. Recharge to the USF aquifer probably occurs along it's subcrop beneath the older valley fill (VAO) and Los Durans Gravel (TAd) to the west and north of the site.

The younger valley fill aquifer (designated VF aquifer) consists of the combined Venada Arroyo Fill (VAy) and the Rio Grande Valley fill (RG). The two units are hydraulically connected and exhibited an average water level elevation of about 5040. Monitoring Wells 1, 18, and 20 were completed in this aquifer. The VF aquifer is hydraulically separated from USF aquifer by a "red clay" in the upper Santa Fe as shown in FIGURE 2 and FIGURE 3. The "red clay" was identified in the logs for MW-8, 12, 15, 18, and 19.

The presence of the “red clay” in the Upper Santa Fe (USF) explains the approximate 20ft. water level difference between the VF aquifer and the USF aquifer.

Groundwater flow in the USF aquifer is to the Southeast as depicted in FIGURE 4, which represents conditions in June 2010. Hydrographs of the USF monitoring wells (FIGURE 5) indicate water levels are stable.

Regional data indicates the groundwater flow direction in the Rio Grande Valley Fill aquifer (RG) is to the south-southwest (generally parallel to the Rio Grande). Water levels presented in Glorieta Geoscience, Inc. April 1998, which included Monitoring Wells MW-1a, 2, 2a and 3 (FIGURE 1) support that point. A comparison of water levels in MW-18 and MW-1A indicates the Venada Arroyo Fill portion of the VF-aquifer is acting in a manner analogous to an estuary.

When the water levels in the Rio Grande Valley Fill aquifer rise, groundwater flows to the west in the Arroyo Fill, and when water levels in the Rio Grande Valley Fill fall, ground water flows to the east in the Arroyo Fill. Recharge to the Rio Grande Valley fill aquifer in this area comes primarily from leakage out of the Rio Grande. Recharge to the Venada Arroyo Fill portion of the aquifer (VAy) comes primarily from the Rio Grande Valley Fill and to a lesser extent from direct infiltration of stormwater into the bottom of Venada Arroyo. FIGURE 6 depicts the eastward groundwater flow direction in the VF aquifer in March 2010. FIGURE 7 depicts the westward groundwater flow direction in the VF aquifer in June 2010. Hydrographs of the VF monitoring wells (FIGURE8) show two reversals in groundwater flow direction which occurred in May and July 2010.

Potential Sources of Nitrate in the Groundwater

Since 1997, several potential sources of Nitrate to the groundwater have been suggested. Potential sources include the following:

- The three dairy lagoons located along the north bank of Venada Arroyo (FIGURE 1).
- The dairy corral area located on the terrace north of Venada Arroyo (FIGURE 1).
- Sewage lift stations and associated sewer pipes located southwest and northeast of the dairy corral area (FIGURE 1).
- Individual septic systems associated with housing areas located west of NM Hwy. 528 and east of the dairy corral area.
- The Town of Bernalillo wastewater treatment plant located about 1 mile southeast of the dairy corral area.

- The irrigated fields located on the Rio Grande Flood Plain south of Venada Arroyo where water from the dairy lagoons was used as irrigation water (FIGURE 1).

Based on review of the available data, it is believed that the most likely source of Nitrate to the VF aquifer near the mouth of Venada Arroyo is the dairy lagoons. Leakage from the dairy lagoons would infiltrate directly in to the VF aquifer, and Nitrate and TKN concentrations observed in the groundwater are consistent with leakage from dairy lagoons.

The most likely sources of the Nitrate observed in the USF aquifer are infiltration from the corral area and leakage from the municipal sewer pipe and lift station located on the west side of Hwy 528. Both sources are hydraulically positioned to infiltrate into the USF aquifer (FIGURE-3). In March 2009, samples from all of the existing monitoring wells were analyzed for byproducts of chlorination (tri halo methans and halo acetic acids). No such compounds were detected in significant quantities, suggesting that the municipal sewer and lift station on the west side of Hwy 528 are not significant contributors to the Nitrate observed in the USF aquifer.

Both the sewage lift station located near the northeast corner of the site and the individual septic systems located to the east of the corral area might have contributed to the Nitrate concentrations observed in the VF aquifer near the mouth of Venada Arroyo. Both sources are upgradient from the observed contamination. The lift station, however, may not have been in place long enough to have contributed.

The individual septic systems located west of NM Hwy 528 might possibly have contributed to the Nitrate in the USF aquifer. However, if they did, most of the contamination would be deeper in the USF aquifer than the depth at which the site monitoring wells are completed, due to the southeastward dip of the USF beds.

It is extremely unlikely that the discharge from the Bernalillo wastewater treatment plant has contributed to the observed Nitrate contamination, because infiltration from the Rio Grande acts as a hydraulic barrier between the wastewater treatment plant and the site.

Previous investigators (Glorieta Geoscience, Inc., April, 1998) have concluded that irrigation of the fields south of Venada Arroyo with water from the dairy lagoons did not cause significant Nitrate contamination of the groundwater.

Extent of Elevated Nitrate in the Groundwater

The existing concentration of Nitrate in the Upper Santa Fe (USF) aquifer prior to approval of D.P.-437 in July 1987 is not known because no monitoring wells had been installed in that aquifer by that date. The most recent groundwater monitoring, in March 2010 (TABLE 1), indicates that the WQCC numeric standard (allowable limit) for Nitrate (10 mg/l) is exceeded at three wells in the USF aquifer. These exceedences are 42 mg/l (MW-11R), 14 mg/l (MW-14R) and 18 mg/l (MW-15R).

A review of the Nitrate concentrations in MW-1 and subsequently MW-1A (its' replacement) indicates substantial temporal fluctuations in Nitrate concentrations in the VF aquifer in response to the flow in the Rio Grande, which is located to the east of the site. TABLE 2 and FIGURE 9 indicate a good correlation exists between the maximum annual monthly flow in the Rio Grande at San Felipe, NM (USGS gage 08319000) and the subsequent minimum annual Nitrate concentration in monitoring well MW-1 (FIGURE 1). The gage at San Felipe, NM is about 12 miles upstream from the project site.

Simply, when the flow in the Rio Grande is high, the groundwater in the VF aquifer in the vicinity of MW-1 (and the old dairy lagoon) flows to the west (FIGURE 7) moving the Nitrate plume with it. When the flow in the river is low, the ground water flow in VF aquifer is to the east (FIGURE 6) which moves the Nitrate plume back around MW-1. This phenomenon explains the widely fluctuating Nitrate, TDS and Chloride concentrations that have been observed at MW-1, MW-1A, MW-20, MW-20R and MW-23 during the past 23 years.

In recent years high Nitrate concentrations have been observed in MW-1A (150 mg/l), MW-19R (230 mg/l), MW-20R (190 mg/l), and MW-23 (190 mg/l). Based on the previously described hydrologic conditions the size of the Nitrate plume in the VF aquifer remains relatively constant, however the location changes with time. In years of high river flow, the plume is pushed to the west, and in years of low river flow, it moves back to the east. Current data suggests the locus of the Nitrate plume locations covers an area about 1000 feet long in the northeast/southwest direction and about 800 feet long in the northwest/southeast direction.

Based on a comparison of Nitrate concentrations at MW-2 and 2A and MW-20 and 20R, the high Nitrate concentrations in VF aquifer appear to be confined to the upper part of the aquifer.

Movement of Nitrate in the Groundwater

In the concentrations observed at the site, Nitrate moves as a dissolved ion with the groundwater. Thus, Nitrate in the USF aquifer will move to the southeast with the groundwater flow (FIGURE 4).

Nitrate in the VF aquifer will likewise move with the groundwater. Nitrate in the VF aquifer near the mouth of Venada Arroyo may move either eastward or westward depending on the direction of groundwater flow at the time.

Fate of Nitrate in the Groundwater

The primary natural process that will tend to diminish Nitrate concentrations at the site are dispersion and the associated dilution. Nitrate is not subject to significant

adsorption on soil particles, nor is it subject to chemical or biological reduction due to relatively high dissolved oxygen concentrations in the shallow groundwater.

Effectiveness of the Injection System

A nutrient injection system was installed and operated at the site during the summer and fall of 2008. It appears the objective of the injection system was to develop an insitu treatment wall across the VF aquifer. The effectiveness of such a remediation scheme depends on two elements. First, the Nitrate contaminated groundwater must pass through the treatment wall, and second chemical or biological processes must denitrify the groundwater.

Development of a biomass within the aquifer shouild reduce the permeability of the aquifer. If the treatment wall does not extend to the base and lateral limits of the aquifer, and if there are holes in it, the groundwater will tend to flow under, around or through the wall, those being paths of lesser resistance.

Theoretically, if the contaminated groundwater passes through the treatment wall, denitrafication will occur. Too many unknowns exist to allow determination of whether or not the treatment wall has had a beneficial affect on the Nitrate in the VF aquifer, although some reduction in Nitrate mass may yet occur.

AMENDED STAGE 2 ABATEMENT PLAN

Since the nutrient injection system operated at the site in the summer and fall of 2008 does not appear to have achieved significant reductions in groundwater Nitrate concentrations, VG Farms, Inc. has re-evaluated the available options.

Abatement Options

The USF aquifer and the VF aquifer have been shown to be hydraulically separate. As a result, different abatement options are appropriate for each aquifer. The following options have been reconsidered:

- Continue nutrient injection
- Investigate potential off-site sources
- Pump, treat and onsite re-injection
- Substitute abatement standards
- Alternate abatement standards
- Natural attenuation
- Pump and discharge to municipal wastewater plant
- Pump and irrigate an agricultural crop

Preferred Abatement Options

VG Farms proposes monitored natural attenuation for the USF aquifer. The Nitrate concentrations in this aquifer are generally declining, and are less than 200% of the WQCC Numeric Standards in all but one of the wells (MW-11R). If the concentration in that well drops below the 200% threshold, substitute abatement standards may be proposed in the future.

Since January 2009, V G Farms has been working with the Town of Bernalillo to develop an agreement to discharge pumped groundwater to the Town's waste water treatment plant as a means of remediating the VF aquifer. Those efforts have been unsuccessful. As a result, V G Farms proposes to remediate the VF aquifer by pumping up to four containment/remediation wells to irrigate between three and four acres of alfalfa on their remaining 7.7 acres of land known as lot 5-B (FIGURE 10).

Based on V G Farms' recent experience raising alfalfa at their South Valley farm, they expect to produce between 12 and 14 tons/acre/yr of alfalfa. According to NRCS, NM, February, 2002, alfalfa will remove 47.75 pounds of Nitrogen per ton of hay harvested. If the production is 12 tons/ac/yr and 4 ac-ft/ac/yr of irrigation water is applied, the alfalfa will fully utilize all the Nitrogen in irrigation water having up to 53 mg/l of Nitrate as Nitrogen.

An analysis of the groundwater monitoring data since March 2008 suggests the 66 mg/l Nitrate plume has an aerial extent of about 2.5 ac (APPENDIX B) and an average thickness of about 20 ft. A porosity of 40% yields a plume pore volume of about 20 ac-ft. It is estimated that the 66 mg/l Nitrate plume has an average concentration of about 135 mg/l. In order to maintain the Nitrate concentration in the pumped irrigation water at or below 53 mg/l, it will be necessary to pump about 2.5 times as much or about 50 ac-ft of water from the aquifer.

The site will accommodate two rectangular fields totaling about 3.5 ac. If 3.5 ac of alfalfa is irrigated with 4.0 ac-ft/ac/yr of water, the total pumpage would be 13.6 ac-ft/yr. Ideally, this would require about 4 yr to remove the 66 mg/l Nitrate plume.

Up to four containment/irrigation wells are proposed. Existing well RW will be utilized plus up to three additional wells. Blending of water from the wells will be used to control the Nitrate concentration of the irrigation water applied to the fields. The area to be irrigated consists of two level benches shown on Figure 10. Each bench will be surrounded by a berm to prevent surface runoff, and the irrigation water will be applied with a sprinkler system to assure uniform distribution of the water and to minimize deep percolation.

V G Farms plans to begin raising alfalfa on the approximate 3.5 ac area shown on FIGURE 10 in the spring of 2011. V G Farms does not plan to apply for or obtain a discharge permit under NMAC 20.6.2.3104 and 3106 because NMAC 20.6.2.3105 exempts irrigated agriculture from those requirements. Additionally, any deep percolation of Nitrate containing irrigation water would not contaminate any previously uncontaminated groundwater.

Nitrate concentrations in the applied irrigation water and alfalfa production will be monitored during the growing season to assure that no more than 47.75 lb of Nitrogen per ton of alfalfa harvested will be applied to the fields. As long as deep percolation is minimized, elevated TDS and Chloride in the VF aquifer will coincidently be remediated.

Modified Monitoring Program

The following table summarizes the proposed modified groundwater monitoring program. Monitoring frequency in the in the USF aquifer is less frequent because that aquifer exhibits very small fluctuations in water levels and water quality.

Well	Aquifer	Water Level Frequency	Sampling Frequency
MW-1A	VF	Quarterly	Quarterly
MW-6R	USF	Annually	Annually
MW-8R	USF	Annually	Annually
MW-11R	USF	Annually	Annually
MW-13RR	VF[1]	Quarterly	Quarterly
MW-14R	USF	Annually	Annually
MW-15R	USF	Annually	Annually
MW-16R	USF	Annually	Annually
MW-18	VF	Quarterly	Quarterly
MW-19R	VF	Quarterly	Quarterly
MW-20R	VF	Quarterly	Quarterly
MW-21	VF	Quarterly	Quarterly
MW-23	VF	Quarterly	Quarterly
MW-24	VF	Quarterly	Quarterly
MW-25	VF	Quarterly	Quarterly
MW-26	VF	Quarterly	Quarterly
MW-27	VF	Quarterly	Quarterly
Irrig/Cont	VF	NA	Monthly[2]

[1]MW-13RR is completed geologically in the USF aquifer above the red clay, thus it is hydraulically connected to the VF aquifer.

[2]During the growing season only.

Shaded portions represent modifications to the presently approved monitoring program.

All samples will be analyzed for NO_2+NO_3, TKN, TDS and Cl.

Performance Standards

All the monitoring wells are designated compliance wells. When all monitoring wells in the USF aquifer are below the numeric standards or substitute standards as may be

approved by the NMED for Nitrate, TDS and Chloride for two consecutive years, an abatement completion report will be submitted to the NMED for that aquifer.

When all monitoring wells and containment/irrigation wells in the VF aquifer are below the allowable limit for Nitrate (66 mg/l), TDS (1000 mg/l) and Chloride (250 mg/l) for two consecutive years, an abatement completion report will be submitted to the NMED for that aquifer.

When the Secretary of the NMED notifies VG Farms, Inc. that an abatement completion report is approved, all monitoring wells in that aquifer will be plugged and abandoned in accordance with NMED and NMOSE requirements. In the case of the VF aquifer, the containment/irrigation wells will also be plugged and abandoned.

Schedule

V G Farms plans to begin raising irrigated alfalfa on the site in the spring of 2011, contingent upon NMOSE approval of a water rights permit and provision of temporary power by Public Service Company of New Mexico.

Annual progress reports will be submitted to the NMED for the duration of the abatement activities in each aquifer.

Public Notice

V G Farms believes that public notice required by NMAC 20.6.2.4108.B. has been satisfied by the previous public notice related to the December 18, 2006 Stage 2 Abatement Plan, because both plans rely on pumpage of shallow groundwater for remediation . Therefore this amended Stage 2 Abatement plan does not constitute a significant modification to the December 18, 2006 plan. The previous public notice is presented in Appendix C.

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Appendix A

Hawley, J.W., January 12, 2009

APPENDIX A

Hawley, J. W., January 12, 2009

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DRAFT REPORT ON THE HYDROGEOLOGIC SETTING OF THE PRICE'S VALLEY GOLD-NORTH DAIRY SITE IN AND NEAR SECTION 36, T13N, R3E, SANDOVAL COUNTY, NEW MEXICO[1]

JANUARY 12, 2009

[1] Prepared in cooperation with Gary A Richardson, P.E., Metric Corporation

Introduction

This report is an independent characterization of the Price's Valley Gold-North Dairy (**PVGND**) site's hydrogeologic setting in and near Section 36, T13N, R3E, Sandoval County, NM (USGS Bernalillo 7.5 minute quadrangle). The primary study area is located at the southwestern edge of the Town of Bernalillo and along the western border of the inner Rio Grande Valley east of NM-528 and south of NM-505. The general area of interest is in the northern part of the Albuquerque Basin of the Rio Grande rift tectonic province, and includes the zone of structural transition between the Santo Domingo and Calabacillas subbasins (Hawley 1978, Keller and Cather 1994, Hansen and Gorbach 1998; Bartolino and Cole 2002; Connell et al. 2005, 2007; Connell 2008). Upper Cenozoic Santa Fe Group basin fill (Ceja Fm) and late Pleistocene to Holocene river-valley fill (Los Padillas Fm) comprise the major aquifer systems of this "alluvial-basin" (Hawley et al. 1995, Kernodle et al. 1995, Hawley and Kernodle 2000, McAda and Barrow 2002). Emphasis here is on hydrogeologic characterization of aquifers and overlying deposits in the unsaturated (vadose) zone in order to develop better geohydrologic-hydrochemical treatment strategies for remediation of any groundwater contamination that may be associated with previous operations at or near the **PVGND** site.

Key references* on the local geologic and hydrogeologic setting and related publications of a more general nature are cited at the end of the report, and include unpublished reports by consultants and State agencies on monitoring-well installation and soil-borings. More-detailed geologic interpretations are provided by the 1:24,000-scale geologic map of the Bernalillo and Placitas quadrangles (Connell et al., 1995-1998), and a new 1:50,000-scale compilation of geologic and hydrogeologic mapping in the entire Albuquerque-Rio Rancho metropolitan area (Connell, 2008).

Report Plate 1 is an index map showing locations of 1) ten schematic cross sections (Plates 2 to 4) that illustrate shallow-subsurface hydrogeologic conditions at the **PVGND** site, and 2) forty-five well- and borehole-control points used in construction of the cross sections. This map is a 1:6,000-scale enlargement of the USGS Bernalillo 7.5 minute topographic quadrangle (10 ft contour interval). Plate 1 also shows the

approximate location of the north-south trending "Venada" fault that borders the study area on the west. Section vertical exaggeration is 5x, and primary base elevation is 4,900 ft asl (about 150 ft blw the river floodplain). *Note that southward to eastward dips of Upper Santa Fe Group beds of 2° to 5.5° (Plates 2 to 4) are in the dip range inferred from geologic mapping in the general area of interest (Connell et al. 1995-1998); however, basin-fill dips at the actual **PVGND** site have never been specifically measured (due to unit burial) and may range from nearly flat to gently westward dipping.*

Additional supporting materials include general explanations (Fig. 1, Tables 1 to 3) of the basic hydrogeologic components (hydrostratigraphic units and lithofacies assemblages) of the basin-fill aquifer system illustrated on the attached schematic cross-sections (Plates 2 to 4). For example: Lithofacies-assemblage (***LFA***) units are the basic building blocks of the Santa Fe Group hydrogeologic framework. Their general attributes are illustrated and defined in Figure 1 and Table1; and their geohydrologic properties are summarized in Table 2. The major hydrostratigraphic units (**HSU**s) are subdivisions of the Upper Santa Fe Group basin fill and Rio Grande Valley fill (Fig. 2, Table 3: **HSU-USF, and HSUs-RG, VA, VAY, VAO**, and **TAd**). *See Hawley and Kernodle (2000) for more detailed discussion of hydrogeologic mapping concepts basin-fill aquifer systems throughout the Rio Grande rift province of New Mexico and Colorado. Figure 2, modified from Figure 6 in the latter report, summarizes Cenozoic chronology and correlates major lithostratigraphic and hydrostratigraphic units of the Rio Grande rift region.*

Overview of Local Hydrogeologic Framework

The ten schematic hydrogeologic cross-sections (Plates 2 to 4) illustrate the general subsurface conditions at the **PVGND** site inferred from our hydrostratigraphic interpretations of 1) previous geologic field studies in the general area of interest, and 2) forty-five lithologic logs of monitoring wells and soil borings in the specific site area (in and adjacent to Sec. 36, T13N, R3E). Of special local interest is the location of a north-south-trending intra-rift-basin fault, here designated the "Venada" fault, located near the western edge of the study area (unnamed fault mapped by Connell (2008) that located approximately at sharp N-S to E-W bends in lower Arroyo Venada-NE¼, NW¼, Sec. 36). Inferred down-to-the-east displacement of this fault ranges from hundreds of feet offset of Pliocene **USF** beds to less than 20 feet offset of middle to upper Pleistocene **HSUs-VAO/TAd** (Connell et. al. 1995-1998; Connell, 2008, 01/2009 personal communication). As also noted in the **Introduction**, the less than 6° southward to eastward dips of **HSU-USF** beds (schematically shown on Plates 2 to 4) are in the general dip range inferred from geologic mapping by Connell and others (1995-1998). Because unit **USF** is buried by valley-fill deposits (**HSUs-VAY. VAO, and TAd**) at all but one small outcrop at the **PVGND** site, basin-fill deformation has not been measured and may range from nearly flat to gently dipping in any direction. This inference is supported by published dip and strike measurements at Upper Santa Fe-Ceja Formation outcrops within two miles of the study area (Connell et. al. 1995-1998).

The primary aquifer systems at the site comprise 1) basin-fill hydrostratigraphic unit (**HSU**) **USF**, which is dominated by lithofacies assemblage (***LFA*** *3*; and 2) valley-fill **HSU-RG**, which is mainly ***LFA a1-2*** (Fig. 1, Tables 1 to 3, Plates 2 to 4). The basin-fill (**USF-*LFA 3***) hydrogeologic component of the regional aquifer system exhibits a

wide range in permeability. However, estimated horizontal-hydraulic conductivities (K_h) in the Albuquerque groundwater basin are commonly in the "moderate" range (3-30 ft/d, Table 2; Hawley and Kernodle 2000), while model-K_h estimates in the **PVGND** site area are about 4 ft/d (Kernodle et al. 2005, McAda and Barrow 2002). Silty clay to sandy mudstone interbeds in ***LFA 3*** are as much as 20 ft thick, and appear to act as effective confining beds (aquitards and aquicludes) beneath much of the site area. The potentiometric surface (pressure head) in monitoring wells screened in unit **USF** is usually significantly less than local unconfined water-table elevations in **HSU-RG** of the river-valley-floor area (about 5,040 ft asl, Plates 2 to 4).

Geohydrologic/hydraulic properties of Rio Grande valley-fill hydrostratigraphic unit (**HSU-RG**) and the saturated basal part of contiguous tributary alluvium of Arroyo Venada (**HSU-VAY**) contrast markedly with those of **HSU-USF**. Estimated horizontal-hydraulic conductivities (K_h) are commonly in the "high to moderate" range in these valley-fill units (***LFAs a1-2*** and ***b***) throughout the northern Rio Grande Valley region (Hawley and Kernodle 2000-Table 3), with model-K_h estimates of about 40 ft/d in the Bernalillo-**PVGND** site area (Kernodle et al. 1995). As noted above, the potentiometric surface in the upper unconfined aquifer system of the inner Rio Grande Valley (**HSUs RG** and basal **VAY**) is within 10 to 15 feet of the local river-floodplain surface (about 5,050 ft asl), except near major pumping centers. Valley-fill groundwater heads (about 5, 040 ft) are therefore significantly higher than those in the adjacent/subjacent confined basin-fill (**UFS**) aquifer system in most parts of the study area.

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Table 1. Summary of depositional settings and dominant textures of major lithofacies assemblages (***LFAs***) in basin and valley fills of the Rio Grande rift region: Santa Fe Group basin fill (***1-10***), and post-Santa Fe river-valley and basin fill (***a-c***). Modified from Hawley and Kernodle (2000)

Lithofacies Assemblages	Dominant depositional settings and process	Dominant textural classes
1	Basin-floor fluvial plain	Sand and pebble gravel, lenses of silty clay
2	Basin-floor fluvial, locally eolian	Sand; lenses of pebble sand, and silty clay
3	Basin-floor, fluvial-overbank, fluvial-deltaic and playa-lake; eolian	Interbedded sand and silty clay; lenses of pebbly sand
4	Eolian, basin-floor alluvial	Sand and sandstone; lenses of silty sand to clay
5	Distal to medial piedmont-slope; alluvial fan	Gravel, sand, silt, and clay; common loamy (sand-silt-clay)
5a	Distal to medial piedmont-slope, alluvial fan; associated with large watersheds; alluvial-fan distributary-channel primary; sheet-flood and debris-flow secondary	Sand and gravel; lenses of gravelly, loamy sand to sandy loam
5b	Distal to medial piedmont-slope, alluvial fan; associated with small steep watersheds, debris-flow sheet-flood, and distributary-channel	Gravelly, loamy sand to sandy loam; lenses of sand, gravel, and silty clay
6	Proximal to medial piedmont-slope, alluvial-fan	Coarse gravelly, loamy sand and sandy loam; lenses of sand and cobble to boulder gravel
6a	Like 5a	Sand and gravel; lenses of gravelly to non-gravelly, loamy sand to sandy loam
6b	Like 5b	Gravelly, loamy sand to sandy loam; lenses of sand, gravel, and silty clay
7	Like 5	Partly indurated 5
8	Like 6	Partly indurated 6
9	Basin-floor-alluvial flat, playa, lake, and fluvial-lacustrine; distal-piedmont alluvial	Silty clay interbedded with sand, silty sand and clay
10	Like 9, with evaporite processes (paleophreatic)	Partly indurated 9, with gypsiferous and alkali- impregnated zones
a	River-valley, fluvial	Sand, gravel, silt and clay
a1	Basal channel	Pebble to cobble gravel and sand (like 1)
a2	Braided plain, channel	Sand and pebbly sand (like 2)
a3	Overbank, meander- belt oxbow	Silty clay, clay, and sand (like 3)
b	Arroyo channel, and valley-border alluvial-fan	Sand, gravel, silt, and clay (like 5)
c	Basin floor, alluvial flat, cienega, playa, and fluvial-fan to lacustrine plain	Silty clay, clay and sand (like 3,5, and 9)

Table 2. Summary of major sedimentary properties that influence groundwater-production potential of Santa Fe Group river-valley and basin fill (***LFAs 1-10***). Modified from Haase and Lozinsky (1992)

Lithofacies	Ratio of sand plus gravel to silt plus clay[1]	Bedding thickness (meters)	Bedding configuration[2]	Bedding continuity (feet)[3]	Bedding connectivity[4]	Hydraulic conductivity (K)[5]	Groundwater production potential
1	High	>1.5	Elongate to planar	>1000	High	High	High
2	High to moderate	>1.5	Elongate to planar	>1000	High to moderate	High to moderate	High to moderate
3	Moderate	>1.5	Planar	500 to 1000	Moderate to high	Moderate	Moderate
4	Moderate to low*	>1.5	Planar to elongate	100 to 500	Moderate to high	Moderate	Moderate
5	Moderate to high	0.3 to 1.5	Elongate to lobate	100 to 500	Moderate	Moderate(l-h)	Moderate(l-h)
5a	High to moderate	0.3 to 1.5	Elongate to lobate	100 to 500	Moderate	Moderate to high	Moderate to high
5b	Moderate	0.3 to 1.5	Lobate	100 to 500	Moderate to low	Moderate to low	Moderate to low
6	Moderate to low	0.3 to 1.5	Lobate to elongate	100 to 500	Moderate to low	Moderate to low	Low to moderate
6a	Moderate	0.3 to 1.5	Lobate to elongate	100 to 500	Moderate	Moderate to low	Moderate to low
6b	Moderate to low	0.3 to 1.5	Lobate	<100	Low to moderate	Low to moderate	Low
7	Moderate*	0.3 to 1.5	Elongate to lobate	100 to 500	Moderate	Low	Low
8	Moderate to low*	>1.5	Lobate	<100	Low to moderate	Low	Low
9	Low	>5	Planar	>500	Low	Very low	Very low
10	Low*	>5	Planar	>500	Low	Very low	Very low

[1]High >2; moderate 0.5-2; low <0.5

[2]Elongate (length to width ratios >5); planar (length to width ratios 1-5); lobate (asymmetrical or incomplete planar beds).

[3]Measure of the lateral extent of an individual bed of given thickness and configuration.

[4]Estimate of the ease with which groundwater can flow between individual beds within a particular lithofacies. Generally, high sand + gravel/silt + clay ratios, thick beds, and high bedding continuity favor high bedding connectivity. All other parameters being held equal, the greater the bedding connectivity, the greater the groundwater production potential of a sedimentary unit (Hawley and Haase 1992, VI).

[5]10 to 30 m/day; moderate, 1 to 10 m/day; low, <1 m/day; very low, <0.1 m/day.

*Significant amounts of cementation of coarse-grained beds (as much as 30%)

TABLE 3. Major Hydrostratigraphic Units of the Valley Gold Dairy Site Area, Sandoval County, New Mexico (See Figures 1 and 2, Tables 1 and 2, and Plates 1 to 3)

Post-Santa Fe Group Hydrostratigraphic Units (HSUs), and Major Lithofacies-Assemblage Components (*LFAs*)

RG—Los Padillas Formation (historic to uppermost Pleistocene, Connell et al. 2007)—Pinkish-gray to grayish-brown sand, sandy pebble to cobble gravel, and silty to sandy clay; contains paleochannel, point-bar, and overbank floodplain deposits that underlie the floor of the inner Rio Grande Valley; gravel dominated by rounded quartzite and volcanic clasts; very weak to no soil development; commonly 60 to 80 ft thick in the study area, and mostly in the zone of saturation. Lithofacies Assemblages (***LFAs***) ***a1-3*** (Fig. 1, Tables 1 and 2). Correlative with **Qrp** of Connell (2008).

VA—Alluvium of arroyo systems tributary to the Rio Grande Valley-undivided **VAY** and **VAO** (Middle Pleistocene to Holocene). Valley-border deposits with local veneers of eolian silty sand; primarily pebbly sand to silty sand and sandy silt; usually less than 20 ft thick in the study area, and entirely in vadose (unsaturated) zone. Lithofacies Assemblage (***LFA***) ***b*** (Fig. 1, Tables 1 and 2).

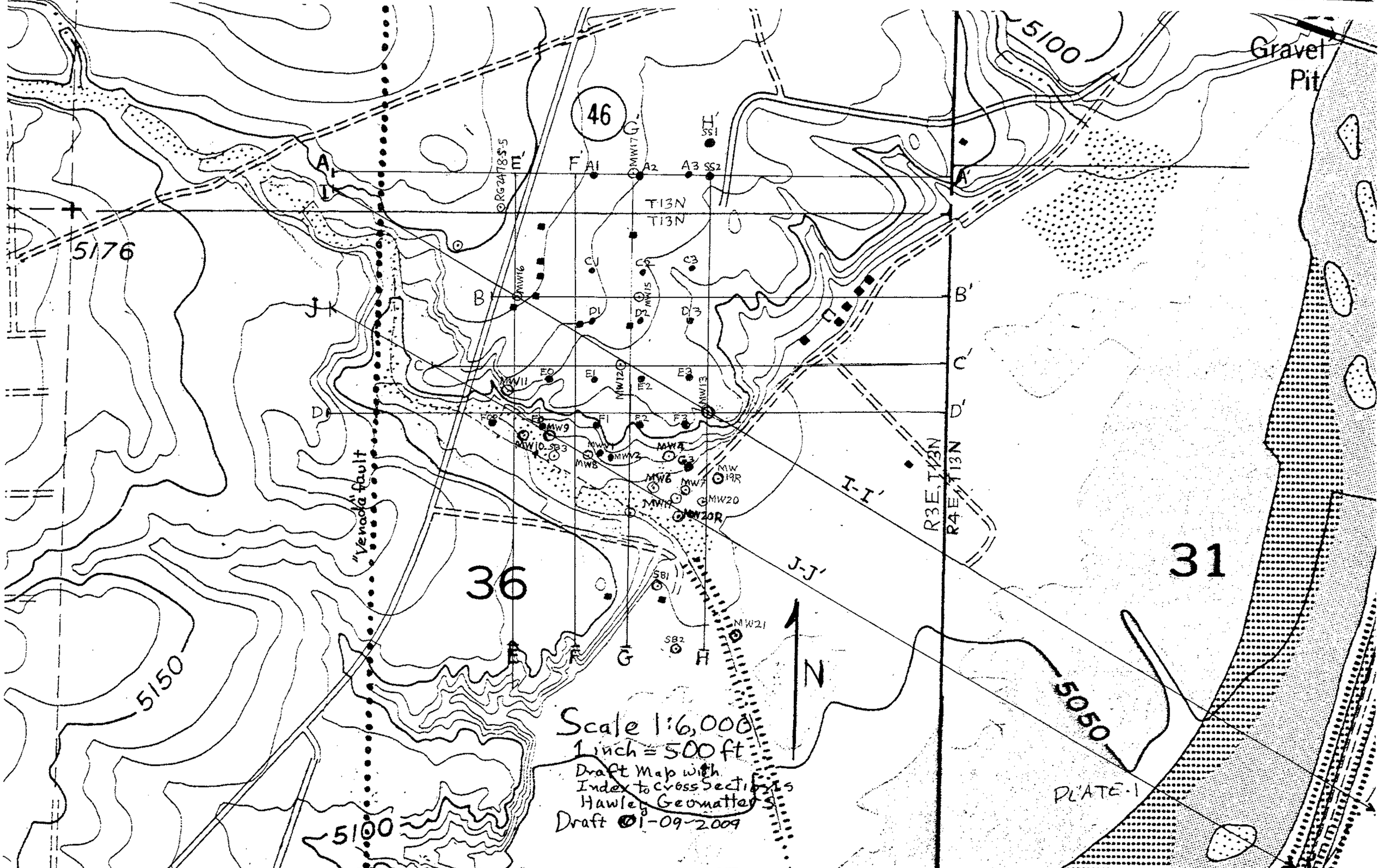
VAY—Younger arroyo-valley alluvium (Holocene to upper Pleistocene)—Pale- to light-brown sand, muddy sand, and pebble to cobble gravel associated with tributary streams graded to the Rio Grande (**HSU-RG**); variable quartzose-feldspathic lithology with gravel dominated by chert, volcanic, and reddish granitic clasts; weakly developed soils with stage I and II carbonate morphology (Gile et al., 1966); depositional surface as much as 10 ft above local-arroyo base level, and less than 70 ft thick in lower reaches of major tributary valleys; mostly in vadose zone, with basal beds partly saturated in valley of Arroyo Venada. Lithofacies Assemblage (***LFA***) ***b*** (Fig. 1, Tables 1 and 2). Correlative with **Qay** of Connell (2008).

VAO— Intermediate valley-border alluvium (upper to middle Pleistocene)—Alluvial deposits associated with geomorphic surfaces (e.g. fans and terraces) bordering the inner Rio Grande Valley and graded to ancestral- river (**HSU-TAd**) base levels. Yellowish-brown to reddish-yellow sand, muddy sand, silty clay, and pebble to cobble gravel; variable quartzose-feldspathic lithology with gravel dominated by chert, volcanic, and reddish granitic clasts; surface commonly veneered with eolian silty sand; moderately developed soils with stage II to weak stage III carbonate morphology (Gile et al., 1966); 25-100 ft above local-arroyo base level, and as much as 100 ft thick, and entirely in the vadose zone. Lithofacies Assemblage (***LFA***) ***b*** (Fig. 1, Tables 1 and 2). Correlative with **Qam** of Connell (2008).

TAd—Los Duranes Formation (middle Pleistocene, Connell et al. 2007)—Pale-brown to light-reddish-brown sand, sandy pebble to cobble gravel, and silty to sandy clay; fluvial-terrace (channel and floodplain) deposits of the ancestral Rio Grande; gravel dominated by rounded quartzite and volcanic clasts; surface commonly veneered with eolian silty sand; moderately developed soils with stage II to weak stage III carbonate morphology (Gile et al., 1966). Terrace surface is 50-70 ft above historic floodplain base level in the study area; deposits are as much as 70 ft thick, with a minimum elevation in the 5,050 to 5,060-ft range thick and entirely in the vadose zone. Lithofacies Assemblages (***LFAs***) ***a1-3*** (Fig. 1, Tables 1 and 2). Unit intertongues with **HSU-VAO** along valley margins, and is correlative with **Qrd** of Connell (2008).

Santa Fe Group Hydrostratigraphic Units (HSUs), and Major Lithofacies-Assemblage Components (*LFAs*)

USF—Upper Santa Fe Gp **HSUs**-undivided intermontane-basin fill (Pliocene): Unit includes intertonguing distal piedmont-slope (**USF3**) and basin-floor (**USF2**) alluvium deposited prior to incision of the present valley systems of the Rio Grande and its major tributaries (e.g. Arroyo Venada). Primarily Lithofacies Assemblage (***LFA***) ***3*** (Fig. 1, Tables 1 and 2) in the study area: Interbedded reddish-brown to yellowish-red silty clay, mudstone, and weakly cemented sandstone and pebbly sandstone derived from pre-Valles caldera Jemez-Nacimiento Mountain area; variable quartzose-feldspathic lithology with gravel dominated by chert, volcanic, and reddish granitic clasts. Correlative with the Santa Ana Mesa Member of the Ceja Formation (**Tcs**) as mapped by Connell (2008) and Connell and others (1995-1998). *Major Santa Fe Group aquifer, with saturated thickness locally exceeding 1000 ft.*


46
36
31
T13N
T13N
R3E, T13N
R4E, T13N
13 N
5176
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5100
5050
Gravel Pit
"Venoda" fault
A
A'
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B'
C
C'
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A1
A2
A3
SS1
SS2
MW17
RG24178-S-5
MW16
MW15
MW12
MW13
MW11
MW9
MW10
SB3
MW8
MW1
MW3
MW4
MW6
MW7
MW5
MW19R
MW20
MW20R
MW21
SB1
SB2
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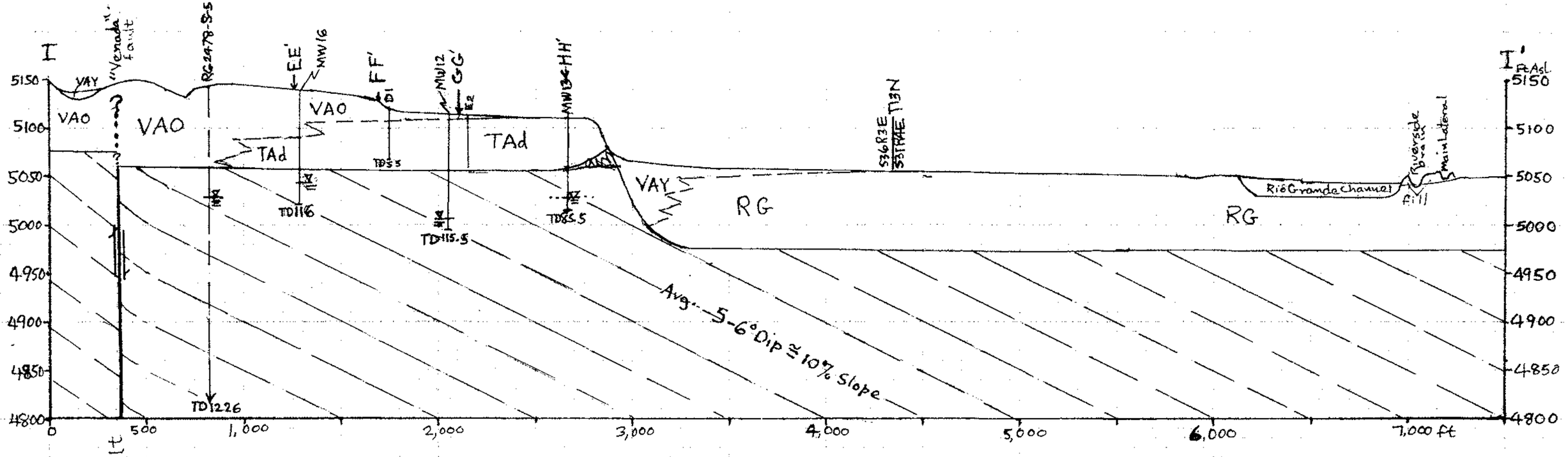
Scale 1:6,000
1 inch = 500 ft
Draft Map with
Index to Cross Sections
Hawley Geomatters
Draft 01-09-2009
PLATE-1

Hawley Geomatters: ~NW-SE Sections (01-09-2009 Draft)



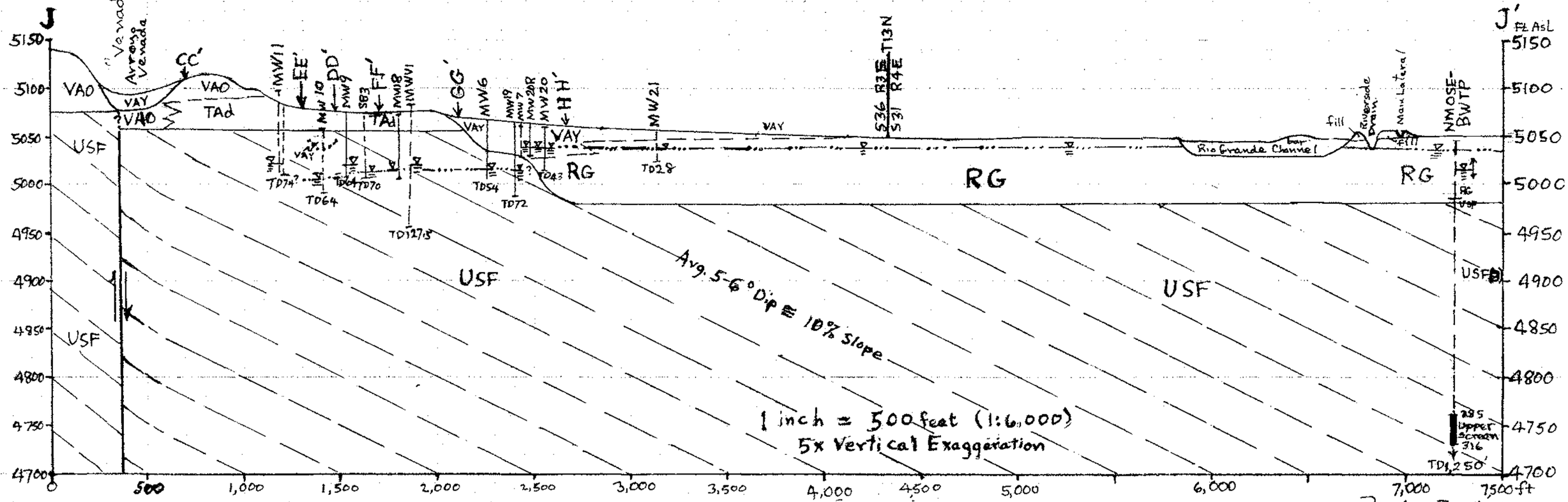
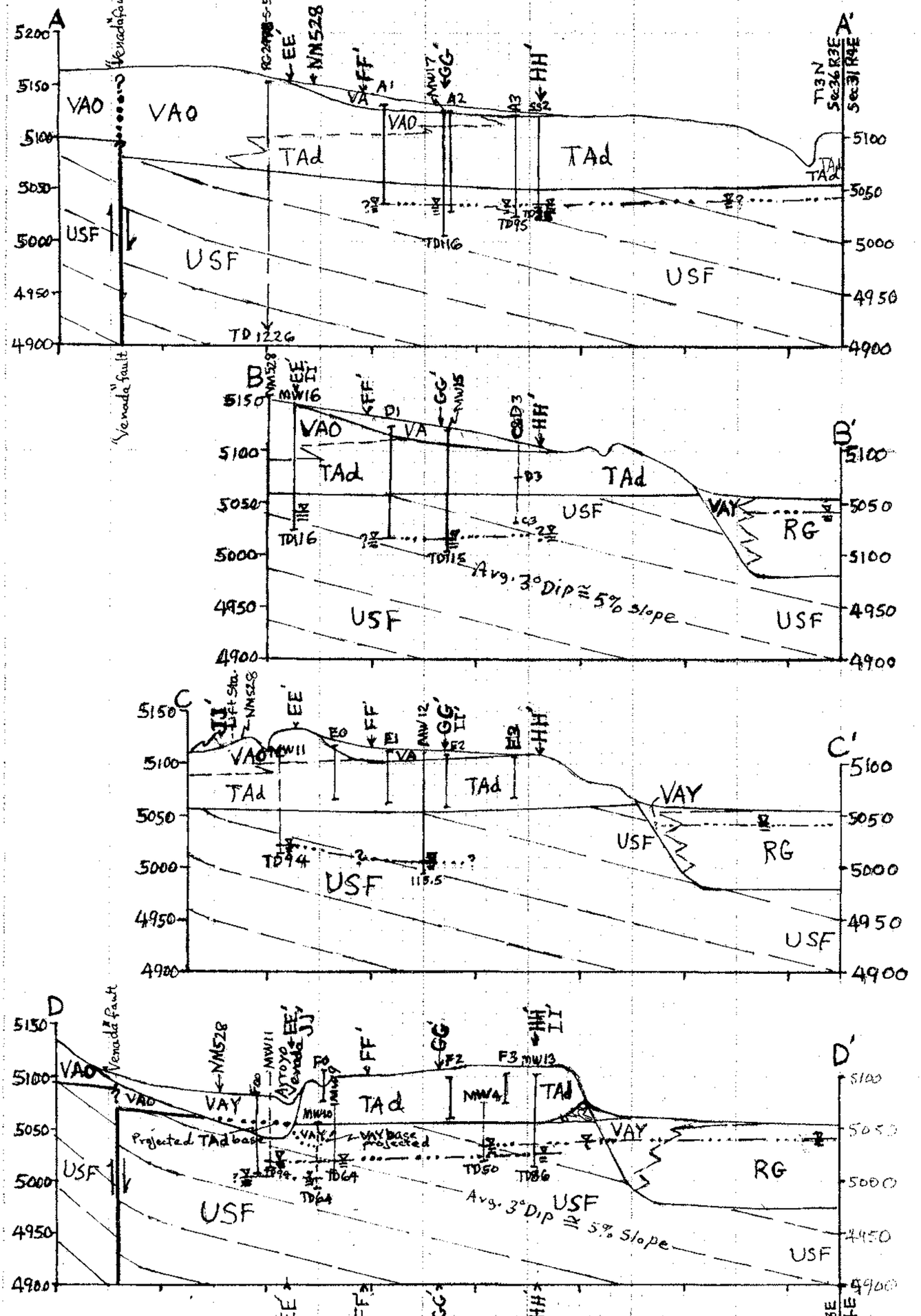
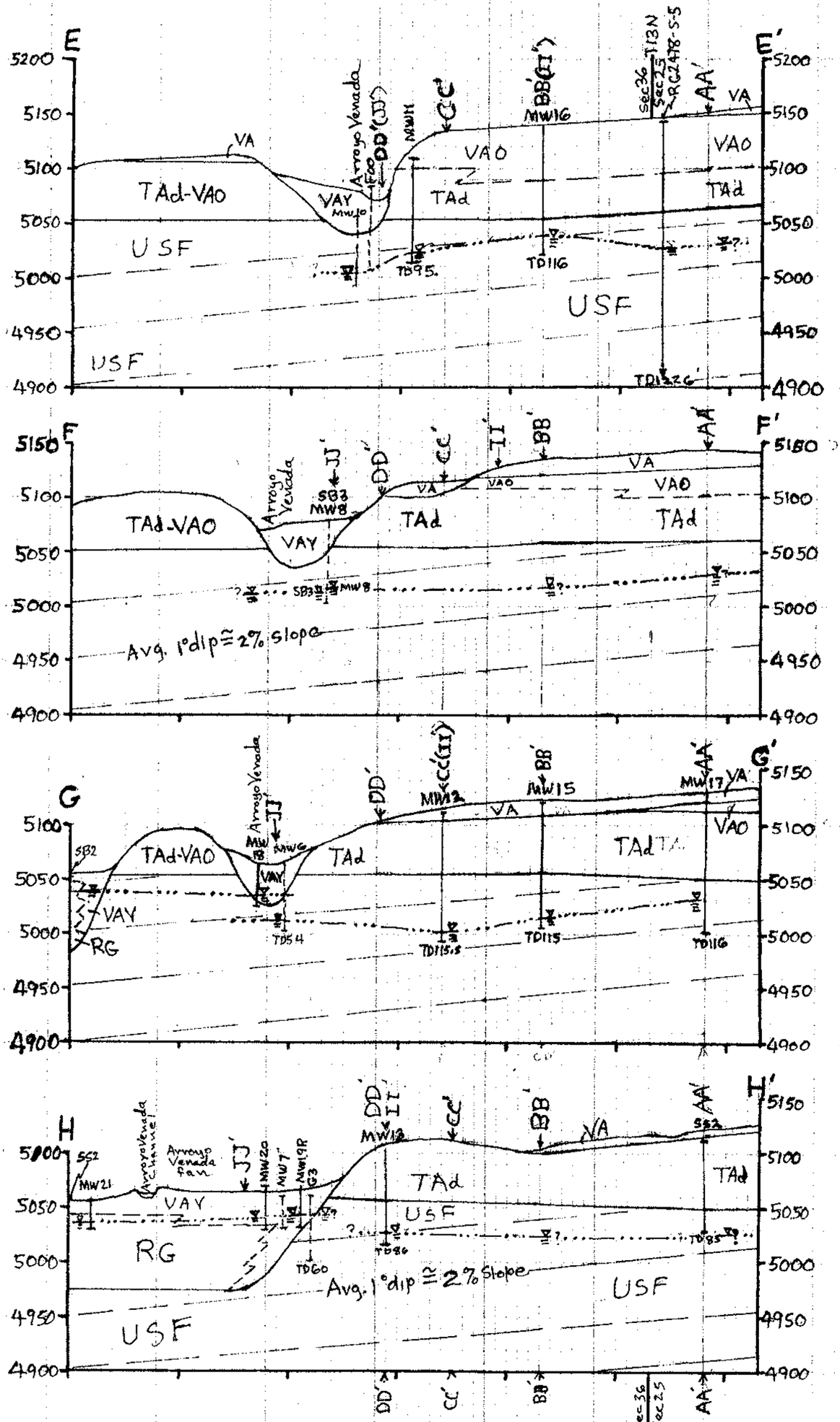


PLATE-4



1 inch = 500 feet (1:6,000)
5x Vertical Exaggeration
East-West Sections
Hawley Geomatters
01-09-2009
Draft

PLATE-2



1 inch = 500 feet (1:6,000)
5× Vertical Exaggeration
North-South Sections
Hawley Geomatters
01-09-2009
Draft

PLATE-3

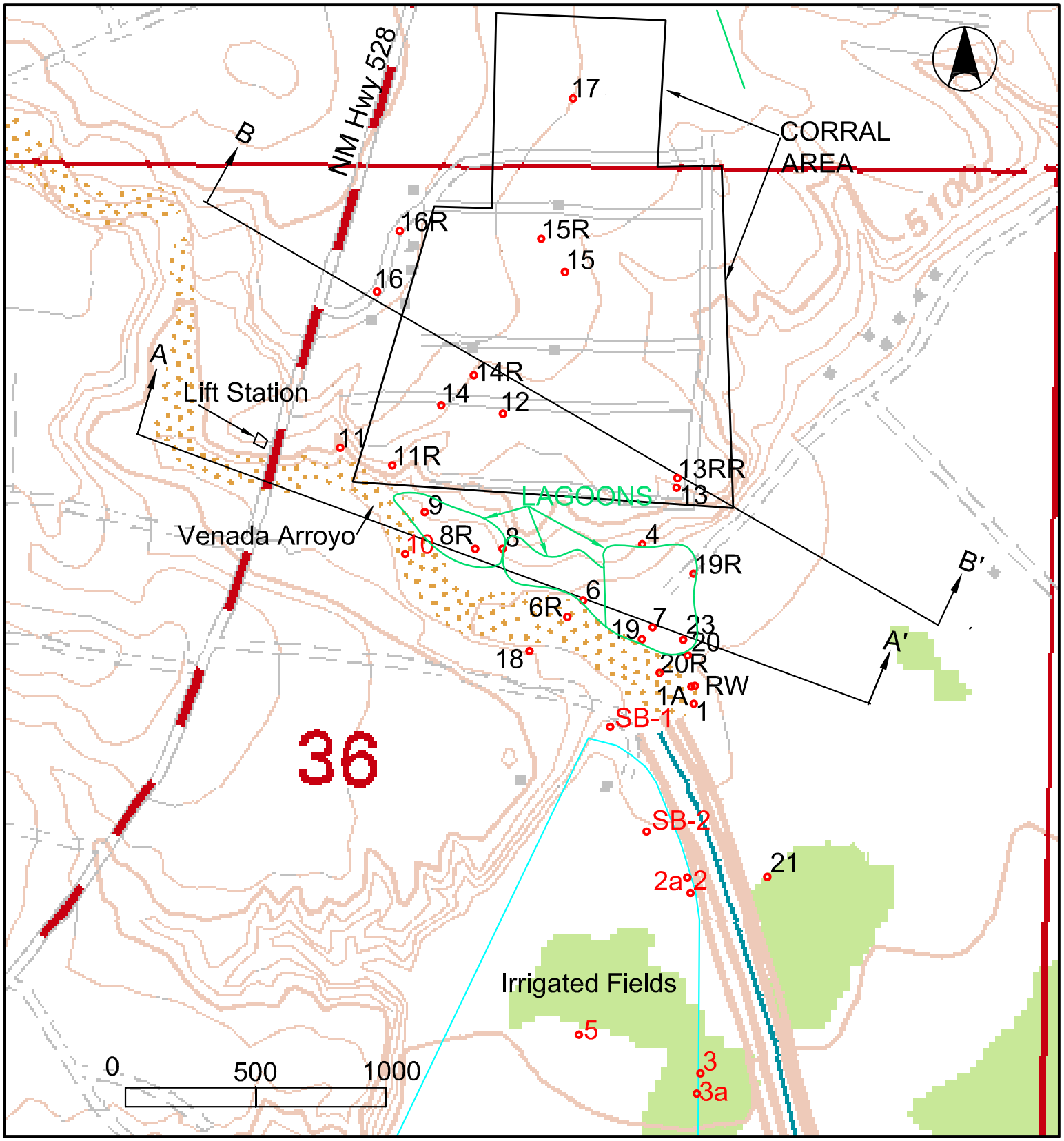


FIGURE 1

Monitor Well and Cross Section Locations

9 March 2010

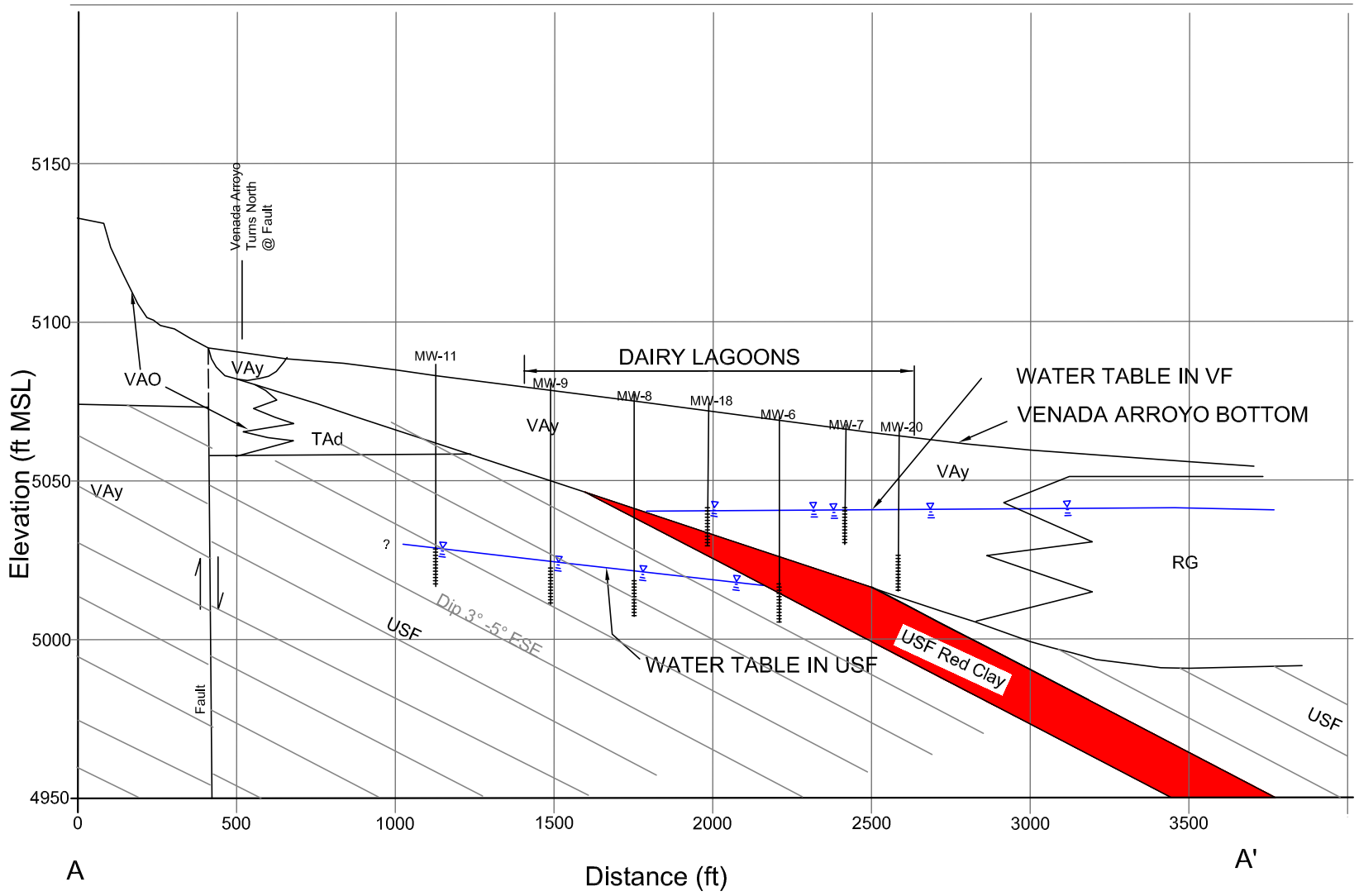


FIGURE 2
Geo-Hydrologic Section Along Venada Arroyo

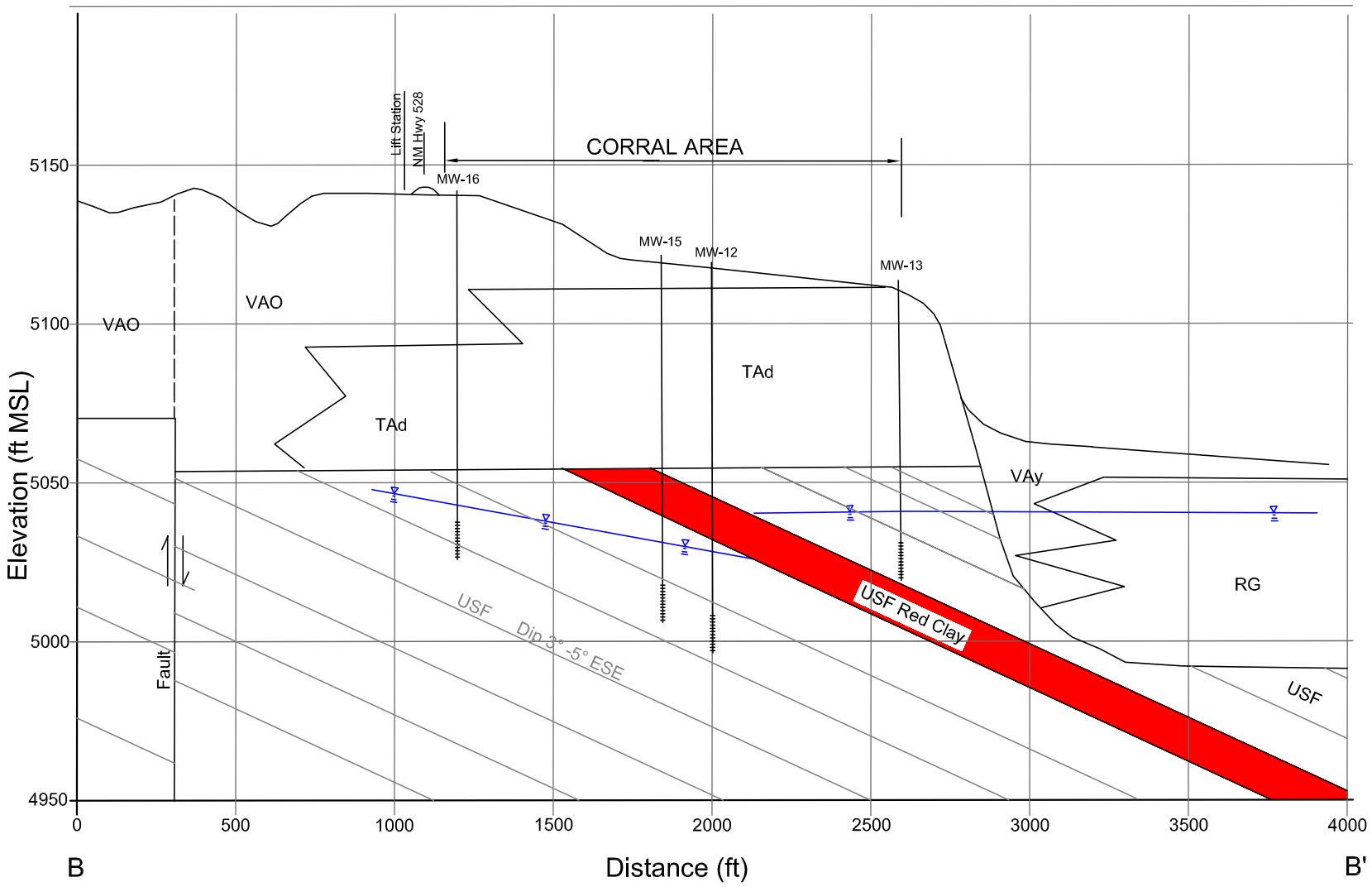


FIGURE 3
Geo-Hydrologic Section
Across The Terrace

PVGND
Hydrographs (Upper Santa Fe Aquifer)
2010

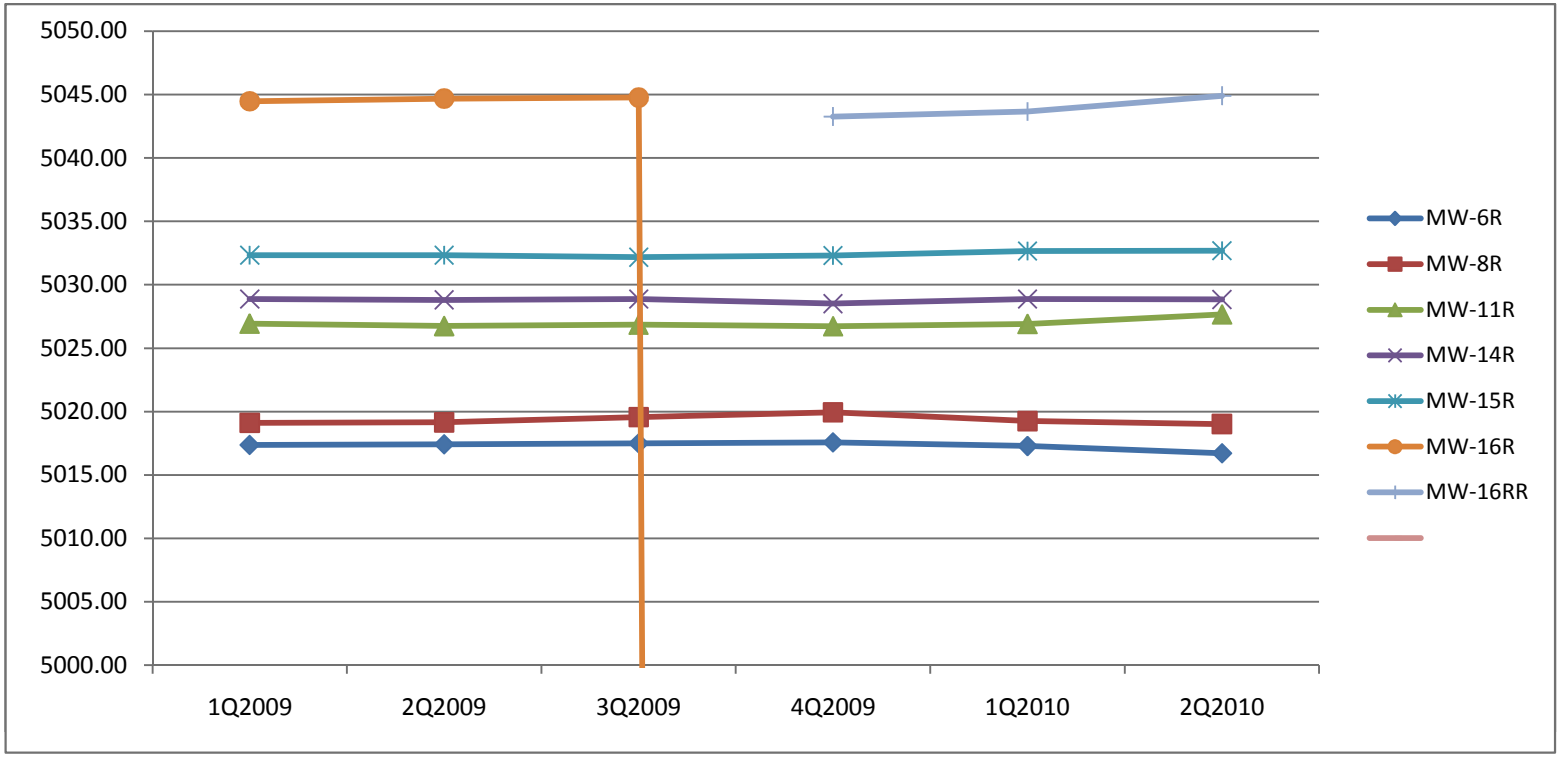


Figure 4

PVGND
Hydrograph (Valley Fill Aquifer)
August 2010

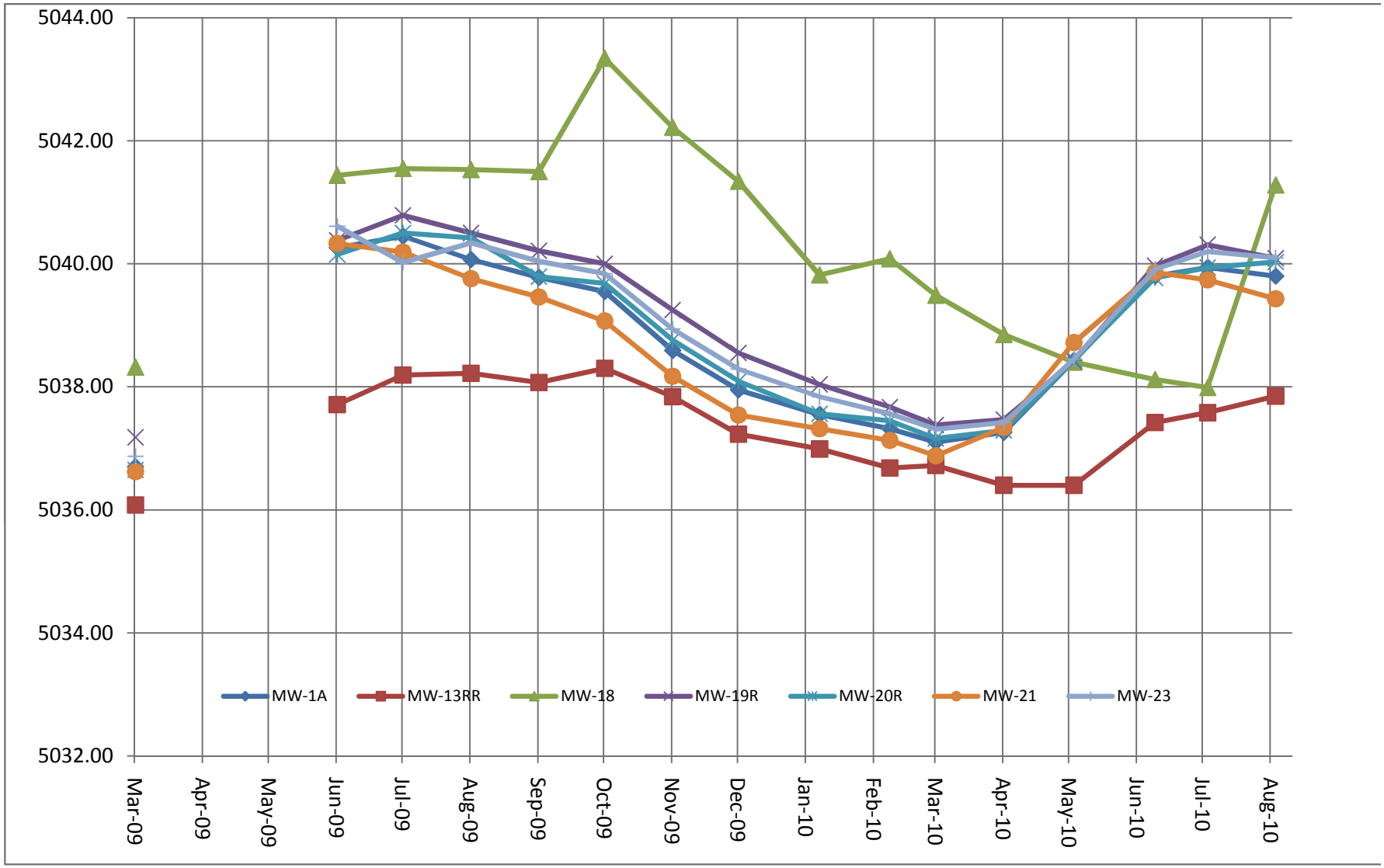
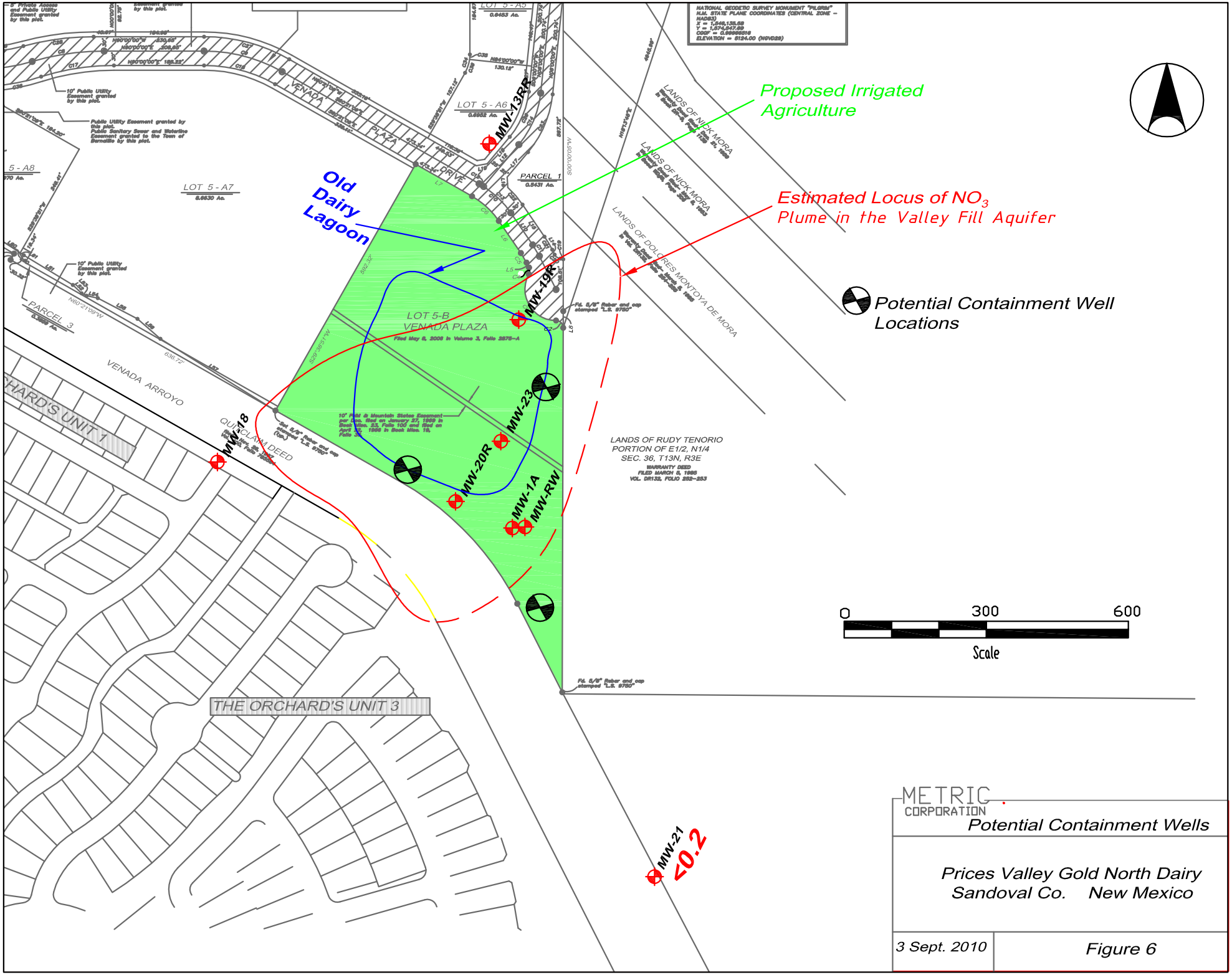


Figure 5



METRIC CORPORATION

Potential Containment Wells

Prices Valley Gold North Dairy
Sandoval Co. New Mexico

3 Sept. 2010

Figure 6

APPENDIX E

UNAUTHORIZED LIFT STATION 15
DISCHARGE RECORDS

Lift Station #15 Spill Log

	Date of Spill	Reported Gallons Spilled	Ref	Estimated Spill Volume	Estimates for Plotting	Accumulate Volume	Comments
1	7/23/1996	3,000			3,000	3,000	Each spill was treated with granular chlorine (HTH)
2	3/1/1997	200	1		200	3,200	
3	4/15/1997	100,000	1		100,000	103,200	
4	4/20/1997	200	2		200	103,400	
5	7/27/1997	300	2		300	103,700	
6	8/13/1997	4,000		45,000 - 100,000	45,000	148,700	Venada Arroyo wet for 1500 ft - 1" of water = 46,500 gal
7	8/14/1997	?		30,000-60,000	30,000	178,700	Venada Arroyo wet for 900 ft
8	8/24/1997	40,000-50,000	2		40,000	218,700	
9	9/5/1998	35,640	5	100,000-500,000	100000	318,700	Venada Arroyo wet 0.6 miles below LS #15 - 1" of water =98,000 gal, 6" = 550,000 gal
10	5/7/2003	600-700	7		600	319,300	
11	11/11/2003	<5,000	9	10,000-60,000	10000	329,300	Venada Arroyo wet 300' - 1" of water = 9,300 gal, 6"= 56,000 gal
12	7/28/2004	?	11		500	329,800	
13	3/3/2005	2000	15		2,000	331,800	
14	3/4/2005	10,000	20	10,000-30,000	10000	341,800	Lift station out of operation for 30 minutes @ 1000 gpm = 30,000 gal
15	5/24/2005	1600	17		1,600	343,400	
16	6/1/2005	1000	21		1,000	344,400	
17	8/9/2005	2000	19		2,000	346,400	
18	1/28/2006	2000	24		2,000	348,400	
19	1/30/2006	3000	23		3,000	351,400	
20	3/24/2006	<100	25		100	351,500	
21	4/15/2006	2500	30		2,500	354,000	
22	4/29/2006	500	31		500	354,500	
23	6/14/2007	200	33		200	354,700	
24	9/13/2010	30,000	39	150,000-1,000,000	150000	504,700	Venada Arroyo wet all the way to the river - 1" of water =150,000 gal, 13 hrs at 2000 gpm = 1,500,000 gal
25	9/24/2010	300	40		300	505,000	

Note: the containment area west of the lift station appears to be an unlined shallow pit. There have been over 20 spills into this area with subsequent HTH treatments.

Pete V. Domenici, Jr.
pdomenici@domenicilaw.com

Jeanne Cameron Washburn
jwashburn@domenicilaw.com

Lorraine Hollingsworth
lhollingsworth@domenicilaw.com

Reed Easterwood[1]
reasterwood@domenicilaw.com
[1]Law Clerk, Licensed to practice law in OR

DOMENICI LAW FIRM, P.C.
ATTORNEYS AT LAW
320 Gold Avenue SW, Suite 1000
Albuquerque, New Mexico 87102-3228

(505) 883-6250 Telephone
(505) 884-3424 Facsimile

June 30, 2011
VIA FAX AND US MAIL

City of Rio Rancho,
Public Works Department,
ATTN: Lisa Vornholt, or
current Director
3200 Civic Center Circle NE
Rio Rancho, NM 87124
Tel 505-891-5016
Fax 505-891-5203

Public Records Request

Dear Director:

Pursuant to the *Inspection of Public Records Act*, NMSA 1978 § 14-2-1 et seq., the Domenici Law Firm requests any and all records of spills regarding the City of Rio Rancho sewer lift station # 15 located west of New Mexico state road 528 adjacent to the Venada Arroyo. Any records responsive to this request include any spills associated with past, existing, or future locations of the City of Rio Rancho sewer lift station # 15.

We understand reasonable fees for copying may be assessed and we also are willing to accept responsive documents in electronic format if available. Please **stop** work on this request and advise me if copy or other fees to execute this request exceed $150.00.

Thank you for your attention.

Sincerely,
Domenici Law Firm, P.C.

Reed Easterwood, legal assistant

cc: file 2036//client

RioRancho
City of Vision

July 15, 2011

Reed Easterwood
Domenici Law Firm
320 Gold Ave SW.
Suite 1000
Albuquerque, NM 87102

Re: Inspection of Public Record Request

Mr. Easterwood on June 30, 2011 you submitted an inspection of public records request regarding sewer lift station #15. The requested documents are available for inspection. Please contact our office at (505) 891-5004 to set up a time to view.

Thank you,

Yolanda Lucero
Records Technician
City Clerks Office
3200 Civic Center Cir NE
Rio Rancho, NM 87144
(505) 891-5004

Appendix C

NMED Corrective Action Reports Approval
November 10, 1997 Correspondence

GARY E. JOHNSON
GOVERNOR

State of New Mexico
ENVIRONMENT DEPARTMENT
Harold Runnels Building
1190 St. Francis Drive, P.O. Drawer 26110
Santa Fe, New Mexico 87502-0110
(505) 827-2855
Fax: (505) 827-2836

MARK E. WEIDLER
SECRETARY

Reviewed
12-16-97

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

November 10, 1997

RECEIVED
DEC 15 1997
ECO RESOURCES, INC.

Gary Rose, General Manager
ECO Resources, Inc.
P. O. Box 15940
Rio Rancho, NM 87174

RE: Corrective Action Reports Approval, City of Rio Rancho

Dear Mr. Rose:

The Ground Water Pollution Prevention Section of the New Mexico Environment Department (NMED) has received the Corrective Action Reports for the five sewage spills that occurred on March 1, April 15, April 20, July 27, and August 24 of 1997. The Corrective Action Reports are hereby approved pursuant to the New Mexico Water Quality Control Commission (WQCC) Regulations, Section 1203.A.7.

The spill incidents along with the response actions taken by the City of Rio Rancho are briefly described as follows:

1. A sewage spill of approximately 200 gallons occurred on March 1, 1997, due to an over flowing manhole located on Villa Verde Drive. The spillage was caused due to a blockage in the collection line caused by accumulation of roots and grease. Response actions for the spill included using a VACTOR truck to vacuum the collection line and spreading granular chlorine on the spillage.

2. A 10 inch sewer line which conveys raw sewage between lift station #2 and lift station #10 developed an 18 inch split on the side causing approximately 100,000 gallons to spill into the Black Arroyo on April 15, 1997. The break occurred at the intersection of Southern Boulevard and Nicklaus Drive. Response actions for the spill included replacement of the four foot section of the damaged pipe with a new section and spreading granular chlorine along the spill (350 yards) . Three soil samples were collected from three different depths from two locations on the spillage area. One of the sampling locations was the site

immediately next to the force main break and one downstream from the break in the arroyo. The soil samples were analyzed for total kjeldahl nitrogen, ammonia, nitrate as nitrogen and nitrite as nitrogen. The analytical results indicate that surface soils at the two sites were impacted by the spill to a depth of 10.3 feet. The concentration of total nitrogen at the depth of 10.3 feet in the sample collected immediately next to the force main break was 76 milligrams per kilogram. The concentration of total nitrogen at the depth of 10.3 feet in the sample collected downstream from the break in the arroyo was 29 milligrams per kilogram. However, no additional correction actions are being required at this time as NMED does not believe that the spill will be a considerable threat to ground water.

3. A sewage spill of approximately 200 gallons occurred at 2345 Southern Boulevard on April 20, 1997, due to a blockage in the manhole. The blockage was cleared using a VACTOR truck and the spill was disinfected. Immediately after cleaning the first spill, another backup of sewage was reported at 2006 Southern Blvd-Garden Plaza in which 300 to 400 gallons of sewage was spilled onto the ground. The sewer blockage was caused due to chunks of concrete and asphalt that fell in when Hale Construction Company crew broke out the manhole cover and ring to lower the grade of pavement. Response actions for the spill included disinfection with granular chlorine and cleaning the blockage using the VACTOR truck.

4. A sewage spill of approximately 300 gallons occurred at lift station #12 due to tripping of all the pumps on July 27, 1997. Response actions for the spill included resetting all pumps, using a VACTOR truck to pump the ponded sewage and disinfection with granular chlorine.

5. A sewage spill of approximately 40,000 to 50,000 gallons occurred at lift station #15 on August 24, 1997, due to lack of power which may have been caused by shorting of the phase-monitor or inadequate wiring. Sewage spilled onto the ground and into the Berrendo Arroyo. Response actions for the spill included restoring power to the lift station and disinfection with granular chlorine down the entire length of spillage (1500 yards east of Highway 528 within the arroyo) and discing of contaminated soil. The lift station was constructed by AMREP Corporation and there has not been a transfer of ownership to the City of Rio Rancho. Until the discrepancies over ownership can be resolved, a Radio Transmitter unit (RTU) will be installed to sound an alarm if failure occurs at the lift station.

Additional corrective actions may be required if ground water contamination occurs as a result of the described spills, or if additional information becomes available indicating that the proposed corrective actions are inadequate.

NMED is concerned about the volume and frequency of spills from the Rio Rancho sewer system. Please provide NMED with an update of your February 21, 1997 letter and the actions taken to date to prevent future spills. If you require any further information or wish to discuss this further, please

feel free to contact Kavitha Casula of my staff at (505)-827-0629.

Sincerely,

Marcy Leavitt, Chief
Ground Water Quality Bureau

ML:KC/kc

xc: Lloyd W. Bartels, NMED District I, Manager
Nora Romero, Environmentalist, District I, Rio Rancho
Michael S. Castillo, AMREP SOUTHWEST INC., 333 Rio Rancho Dr. NE, Rio Rancho, NM 87124

ST. 04143

copy
DP
DA
HO
12-16-97

Appendix D

Lift Station #15 Overflow
September 9, 1998 Notification

Marchell Schulman, Permit Specialist
UIC Program, Ground Water Specialist
State of New Mexico Environment Department
1190 St. Francis Dr. - Harold Runnels Building
Sante Fe, New Mexico 87502

September 9, 1998

Re : Sanitary Sewer Spillage

Location : Lift Station # 15 Hwy 528

Dear Marchell,

As required by discharge plan 215, Systems Maintenance shall provide notification of all wastewater seeps, spills, and / or leaks located within the City of Rio Rancho operating area. This letter provides notice that on September 5, 1998 at approximately 2 pm, the manhole containing the pumps located at Lift Station # 15 overflowed, 35,640 gallons of raw sewage to run into the arroyo adjacent to Price's Dairy Inc. The following description provides details regarding the spill for your information:

Date : 9-05-98 Time : 2 pm Duration : 10 hours

Estimated Volume : 35,640 gallons raw sewage (no solids observed)

Cause: The SCADA System at WWTP # 2 showed a data failure at lift station # 15, which caused a no power condition. The pumps didn't come on. The data failure was not responded to by the operator. There was no common alarm page. The manhole containing the wet well did not overflow. The cause of the leak appears to be a faulty seam at approximately 8 feet down in the wet well. The crack in the seam filtered all solids, which allowed the solids to be contained within the wet well. The lift station battery back-up failed.

Environmental Impact : The sewage spilled into the arroyo, from the northwest side of lift station, down through the 3 section box culvert (concrete bottom), east down the SCAFCA channel for approximately .6 miles. There were some small areas of water ponding noted near the spill sight in the arroyo.

Mitigation : HTH was spread along the effected area of the sewage spill for disinfection.

Corrective Actions : The construction of this lift station should be re-evaluated to resolve any future problems with this lift station that may arise. It has been the center of controversy for some time. The ownership of this lift station has not yet been established with either the City of Rio Rancho Utilities Department or Amrep Southwest Development Corp.

If you need any additional information, please contact myself or Chris Valdez, Assistant Manager at 505 891-1225.

Sincerely,

WYATT MISENHEIMER
SENIOR OPERATOR

cc: file
M. Lail, Manager, STE
L. Webb, Director of Water Resources, City of Rio Rancho
N. Romero, District I Field Office
USEPA

ST. 00163

Appendix E

Lift Station #15 Overflow
May 12, 2003 Notification

City of Rio Rancho

3900 Southern Blvd. SE • PO Box 15550
Rio Rancho, New Mexico 87174-0550
(505) 891-5019 • Fax (505) 891-5201

Jim Owen
Mayor

Acting City Administrator
Ed Chismar

Director of Utilities
Larry W. Webb

DEPARTMENT OF
UTILITIES

May 12, 2003

Kurt Frischkorn, Geo-Scientist
New Mexico Environment Department
Harold Runnels Building
1190 St. Francis Dr./ P.O. Box 26110
Santa Fe, NM 87502

RE: Lift Station #15 force main – Air Vacuum valve leak

Dear Kurt,

On Wednesday May 7, 2003 at approximately 1:30 p.m. we received a call from the Systems Maintenance department with a report of a leak from the force main discharge line of Lift Station #15. The collections crew was immediately dispatched to the site to further investigate and begin remediation.

Upon arrival, it was found that the leak was coming out of a manhole-covered vault approximately 2500 feet north of the lift station along the force main. When the manhole cover was removed, the leak was observed to be coming out of an air-vacuum (air-vac) relief valve. To facilitate repair of the leak, the lift station was turned off at the control panel with an on-site operator to monitor wetwell levels and control discharge from lift station. The VACTOR truck was then staged to remove the standing water from the air-vac vault and then inlet gate valve to the air vac was closed to stop the leak. The air-vac unit was noted to be defective internally and is scheduled for repair/replacement as soon as possible. The gate valve will remain closed until the air-vac repair is made to prevent any further spillage from the site.

Based on the extent of the spillage site, it is believed that no more than 600-700 gallons of sewage was discharged from the faulty air-vac unit. The area was disinfected with granular chorine as required and any standing liquid was picked up with the VACTOR for discharge back into the collection system. After cleanup of site, all controls of lift station and collection system were put back into normal operation with no further problems to report.

Please contact me at 896-8810 with any further questions in this regard.

Sincerely,

Rock Raiford, Project Manager
OMI, Inc.

C: Larry Webb, Director of Utilities, City of Rio Rancho
Chuck Morgan, Environmentalist, NMED District I
Nick Apodaca Jr., Operations Manager-Wastewater
Jeff Burkett, Operations Supervisor – Wastewater

FILE COPY

Appendix F

Lift Station #15 Overflow
November 18, 2003 Notification

City of Rio Rancho

3900 Southern Blvd. SE • PO Box 15550
Rio Rancho, New Mexico 87174-0550
(505) 891-5019 • Fax (505) 891-5201

DEPARTMENT OF
UTILITIES

Jim Owen
Mayor

City Administrator
James M. Palenick

Director of Utilities
Larry W. Webb

November 18, 2003

Kurt Vollbrecht, Geologist
New Mexico Environment Department
Harold Runnels Building
1190 St. Francis Dr./ P.O. Box 26110
Santa Fe, NM 87502

RE: **Sanitary Sewer Overflow – Lift Station #15**

Dear Kurt,

On Tuesday November 11th, at approximately 5:00 p.m. we received alarms for Lift Station (LS) #15. The Maintenance and Collection crews were immediately dispatched to the site to further investigate and begin remediation as necessary.

Upon arrival, it was noted that the lift station was close to overflow. A six thousand gallon tanker truck and a four thousand gallon tanker truck were used to help keep the LS wet well from overflowing excessively. However, since the incident occurred during a high inflow period, some of the sewage began to overflow its wetwell containment. During this same time, maintenance personnel were able to identify that the Lift Station was receiving no incoming power from PNM Electric Company. PNM was immediately contacted to provide a crew to check their power transformers and supply power. PNM indicated that their emergency crew would be dispatched to the site.

In order to establish emergency power with the portable generator, the tanker trucks were removed from the immediate area to allow generator tie-in. Once the generator was tied in, emergency power was initiated for the pumps to operate and pump the wetwell level down. Once the LS was under control with emergency power, the extent of the spillage area was determined and disinfected with granular chlorine.

The emergency crew from PNM arrived on site at approximately 8:00 p. m. The crew determined that two fuses on a transformer poll, which feeds the LS, were burnt out. The fuses were replaced and power was restored to the LS at approximately 8:30 p.m. The LS was found to be in good operational order before leaving the site.

Based on the extent of the spillage site, it is believed that <5000 gallons of sewage was lost from the overflowing LS. The overflowing sewage flowed into the Berrendo Arroyo, which is adjacent to the LS, and with its reach extending no more than approximately 100 yards East of Highway 528.

Please contact me at 896—8810 with any further questions in this regard.

Sincerely,

Paul Romero

Paul Romero, Acting Project Manager
OMI, Inc.

C: Larry Webb, Director of Utilities, City of Rio Rancho
Alex Puglisi, Environmental Office, Pueblo of Sandia
Chuck Morgan, Environmentalist, NMED District I
Nick Apodaca Jr., Operations Manager, OMI
Jeff Burkett, Operations Supervisor, OMI
Nora Romero, Compliance Officer, OMI

FILE COPY

Official Correspondence

Appendix G

Lift Station #15 Overflow
July 28, 2004 Notification

City of Rio Rancho

3900 Southern Blvd. SE • PO Box 15550
Rio Rancho, New Mexico 87174-0550
(505) 896-8715 • Fax (505) 891-5201

DEPARTMENT OF UTILITIES

Jim Owen
Mayor

City Administrator
James M. Palenick

Director of Utilities
Larry W. Webb

July 28, 2004

Certified No. 7002 2030 0003 3224 8653

Kurt Vollbrecht, Geologist
New Mexico Environment Department
Harold Runnels Building
1190 St. Francis Dr./ P.O. Box 26110
Santa Fe, NM 87502

RE: Sanitary Sewer Overflow – Lift Station #15

Dear Kurt,

On Friday July 23, at approximately 1800 hours, there was a power outage due to severe rain and thunderstorms that affected nearly the entire City of Rio Rancho. On call personnel were immediately dispatched to check all lift stations and the three major wastewater facilities. We managed to avoid spills at all lift stations except Lift Station #15 which is located on Highway 528, two miles south of Enchanted Hills. Tanker trucks were used to pump the lift station down, it is estimated that no more then 500 gallons of sewage was lost.

If you have any questions I can be reached at 896-8810.

Sincerely,

David Sohns, Project Manager
OMI, Inc.

C: Chuck Morgan, Environmentalist, NMED District I
Alex Puglisi, Pueblo Sandia
Jim Owen, Mayor, City of Rio Rancho
James Palenick, City of Rio Rancho Administrator
Larry Webb, Director of Utilities, City of Rio Rancho
Jeff Burkett, Operations Manager-Wastewater, OMI
Nora Romero, Compliance Officer, OMI

RLS SCAN

Official Correspondence
2004

City of Rio Rancho

3900 Southern Blvd. SE • PO Box 15550
Rio Rancho, New Mexico 87174-0550
(505) 891-5019 • Fax (505) 891-5201

DEPARTMENT OF
UTILITIES

Jim Owen
Mayor

City Administrator
James M. Palenick

Director of Utilities
Larry W. Webb

November 18, 2003

Kurt Vollbrecht, Geologist
New Mexico Environment Department
Harold Runnels Building
1190 St. Francis Dr./ P.O. Box 26110
Santa Fe, NM 87502

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Based on the extent of the spillage site, it is believed that <5000 gallons of sewage was lost from the overflowing LS. The overflowing sewage flowed into the Berrendo Arroyo, which is adjacent to the LS, and with its reach extending no more than approximately 100 yards East of Highway 528.

Please contact me at 896—8810 with any further questions in this regard.

Sincerely,

Paul Romero

Paul Romero, Acting Project Manager
OMI, Inc.

C: Larry Webb, Director of Utilities, City of Rio Rancho
Alex Puglisi, Environmental Office, Pueblo of Sandia
Chuck Morgan, Environmentalist, NMED District I
Nick Apodaca Jr., Operations Manager, OMI
Jeff Burkett, Operations Supervisor, OMI
Nora Romero, Compliance Officer, OMI

OC 530 2003

FILE COPY

Official Correspondence 2003 and NMED Corre.

City of Rio Rancho

3900 Southern Blvd. SE • PO Box 15550
Rio Rancho, New Mexico 87174-0550
(505) 891-5019 • Fax (505) 891-5201

DEPARTMENT OF UTILITIES

Jim Owen
Mayor

Acting City Administrator
Ed Chismar

Director of Utilities
Larry W. Webb

May 12, 2003

Kurt Frischkorn, Geo-Scientist
New Mexico Environment Department
Harold Runnels Building
1190 St. Francis Dr./ P.O. Box 26110
Santa Fe, NM 87502

RE: Lift Station #15 force main – Air Vacuum valve leak

Dear Kurt,

On Wednesday May 7, 2003 at approximately 1:30 p.m. we received a call from the Systems Maintenance department with a report of a leak from the force main discharge line of Lift Station #15. The collections crew was immediately dispatched to the site to further investigate and begin remediation.

Upon arrival, it was found that the leak was coming out of a manhole-covered vault approximately 2500 feet north of the lift station along the force main. When the manhole cover was removed, the leak was observed to be coming out of an air-vacuum (air-vac) relief valve. To facilitate repair of the leak, the lift station was turned off at the control panel with an on-site operator to monitor wetwell levels and control discharge from lift station. The VACTOR truck was then staged to remove the standing water from the air-vac vault and then inlet gate valve to the air vac was closed to stop the leak. The air-vac unit was noted to be defective internally and is scheduled for repair/replacement as soon as possible. The gate valve will remain closed until the air-vac repair is made to prevent any further spillage from the site.

Based on the extent of the spillage site, it is believed that no more than 600-700 gallons of sewage was discharged from the faulty air-vac unit. The area was disinfected with granular chorine as required and any standing liquid was picked up with the VACTOR for discharge back into the collection system. After cleanup of site, all controls of lift station and collection system were put back into normal operation with no further problems to report.

Please contact me at 896-8810 with any further questions in this regard.

Sincerely,

Rock Raiford, Project Manager
OMI, Inc.

C: Larry Webb, Director of Utilities, City of Rio Rancho
Chuck Morgan, Environmentalist, NMED District I
Nick Apodaca Jr., Operations Manager-Wastewater
Jeff Burkett, Operations Supervisor – Wastewater

OC SSO 2003

FILE COPY

City of Rio Rancho

3900 Southern Blvd. SE • PO Box 15550
Rio Rancho, New Mexico 87174-0550
(505) 896-8715 • Fax (505) 891-5201

DEPARTMENT OF UTILITIES

Jim Owen
Mayor

City Administrator
James M. Palenick

Director of Utilities
Larry W. Webb

July 28, 2004

Certified No. 7002 2030 0003 3224 8653

Kurt Vollbrecht, Geologist
New Mexico Environment Department
Harold Runnels Building
1190 St. Francis Dr./ P.O. Box 26110
Santa Fe, NM 87502

RE: Sanitary Sewer Overflow – Lift Station #15

Dear Kurt,

On Friday July 23, at approximately 1800 hours, there was a power outage due to severe rain and thunderstorms that affected nearly the entire City of Rio Rancho. On call personnel were immediately dispatched to check all lift stations and the three major wastewater facilities. We managed to avoid spills at all lift stations except Lift Station #15 which is located on Highway 528, two miles south of Enchanted Hills. Tanker trucks were used to pump the lift station down, it is estimated that no more then 500 gallons of sewage was lost.

If you have any questions I can be reached at 896-8810.

Sincerely,

David Sohns, Project Manager
OMI, Inc.

C: Chuck Morgan, Environmentalist, NMED District I
Alex Puglisi, Pueblo Sandia
Jim Owen, Mayor, City of Rio Rancho
James Palenick, City of Rio Rancho Administrator
Larry Webb, Director of Utilities, City of Rio Rancho
Jeff Burkett, Operations Manager-Wastewater, OMI
Nora Romero, Compliance Officer, OMI

FILE COPY

Official Correspondence
2004

City of Rio Rancho

3900 Southern Blvd. SE • PO Box 15550
Rio Rancho, New Mexico 87174-0550
(505) 896-8715 • Fax (505) 891-5201

DEPARTMENT OF UTILITIES

Mayor
Jim Owen

City Administrator
James M. Palenick

Director of Public Infrastructure
John Kolessar

Director of Utilities
Larry W. Webb

March 8, 2005

Certified No. 7002 2030 0003 3226 4639

Kurt Vollbrecht, Geologist
New Mexico Environment Department
Harold Runnels Building
1190 St. Francis Dr./ P.O. Box 26110
Santa Fe, NM 87502

RE: **Sanitary Sewer Overflow – Lift Station # 15, Calle Bona Tierra & NM 528.**

Dear Kurt,

On Thursday March 3rd, at approximately 6:10 p.m., we received an alarm condition page from our SCADA system. The on call personnel responded and upon arrival found the Lift Station operating properly. Upon further investigation it was found that the lift station had already overflowed out of the wet well.

Based on the extent of the spillage site, approximately 2,000 gallons was discharged from the lift station into the arroyo just north of the area as indicated by our Sanitary Sewer Overflow Worksheet.

At 7:10 p.m. a crew from Public Service Company of New Mexico arrived at the lift station to inform us that all power was lost in the area due to a lighting strike to a transformer up the street from the lift station. After discussing the incident with PNM, it was determined that the cause of the overflow was due to the power outage.

The area around the lift station and the arroyo was disinfected with granular HTH. No further problems were noted at the site.

Please contact me at 896-8810 with any further questions in this regard.

Sincerely,

David Sohns, Project Manager
OMI, Inc.

C: John Kolessar, P.E., Director of Public Infrastructure
Larry Webb, Director of Utilities, City of Rio Rancho
Chuck Morgan, Environmentalist, NMED District I
Alex Puglisi, Pueblo of Sandia
Joel Lusk, Fish and Wildlife
File

From: JEFF BURKETT
To: LARRY webb
Date: 3/13/2005 1:21:57 PM
Subject: Lift Station #15

Larry,

We again have problems at lift station #15. We had high levels yesterday morning. Upon inspection of the lift station the crew found that it was having a difficult time keeping up with the flow at around 9:30 a.m. Saturday morning.

The crew (Eddie DeLara, Kyle Medders, Mark Baker, Lawrence Romero, Dennis Esquibel) began hauling tanker loads out of the station to lower the level in the wetwell. After pulling the pumps for inspection, and pumping the lift station down low enough to see what was going on with the pumps it was determined that one of the pumps stand was loose and no longer mounted to the floor.

An emergency bypass like we've done in the past was one alternative. However, with the completion of the new lift station hopefully being very close now, we wanted to avoid spending thousands of dollars to get AUI out here again to assist in a confined space entry for repairs.

I won't go into all the details, but the crew came up with an outstanding plan. They were able to retrofit an existing submersible pump. With assistance from Southwest repairs, JCH and Action Hose we are now have two pumps again operable at LS #15 and no confined space entry was done. (see pics)

I will submit all required paperwork first thing Monday a.m. for the emergency parts and assistance charges incurred for this job.

I want to thank the team for their outstanding response and innovative thinking to complete this job at our favorite lift station, once again avoiding a spill and without having to enlist AUI to assist. This was about a 15 hour job ending at 12:30 a.m. Sunday morning.

Mr. Ketchum, any idea of a completion date for the new lift station? This lift station is literally hanging on by a thread. Anything you can do to get the contractor to complete the job will be greatly by.

Thanks

Jeff

CC: ANTHONY MARTINEZ; DAVID SOHNS; EDDIE DELARA; JOHN KETCHUM; KYLE MEDDERS; LYNN KRONOWIT; MARK S BAKER; NITA GONZALES; PETE ENGLISH; RUBEN GONZALES; SCOTT SENSANBAUGHER; SUSAN DEMPSEY

City of Rio Rancho

3900 Southern Blvd. SE • PO Box 15550
Rio Rancho, New Mexico 87174-0550
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DEPARTMENT OF UTILITIES

Mayor
Jim Owen

City Administrator
James M. Palenick

Director of Public Infrastructure
John Kolessar

Director of Utilities
Larry W. Webb

May 24, 2005

Certified No. 7002 2030 0003 3219 1966

Kurt Vollbrecht, Geologist
New Mexico Environment Department
Harold Runnels Building
1190 St. Francis Dr./ P.O. Box 26110
Santa Fe, NM 87502

RE: **Sanitary Sewer Overflow – Lift Station # 15, Calle Bona Tierra & NM 528.**

Dear Kurt,

On Tuesday May 24th, at approximately 5:25 p.m., we received an alarm condition page from Lift Station #15. The on call personnel responded and upon arrival found the lift station power to be off and the wetwell close to overflowing. An emergency generator was hooked up and power to the pumps restored, unfortunately not before some sewage spilled.

Based on the extent of the spillage site, we estimate that not more than 1600 gallons was discharged from the lift station into the arroyo just north of the area as indicated by our Sanitary Sewer Overflow Worksheet.

At 6:30 p.m. a crew from Public Service Company of New Mexico arrived on the scene. After discussing the incident with PNM, we determined the cause of the power outage was most likely attributed to a blown fuse located between PNM's power line and the lift station. The fuse was replaced and the lift station was put back in normal operational service.

Start up of the new lift station #15 should take place within the next two weeks. Fortunately the new station is equipped with an on-site emergency generator, which will automatically engage when PNM power is lost, greatly reducing the chances of spills occurring due to power loss.

The area around the lift station and the arroyo was cleaned and disinfected with granular HTH. No further problems were noted at the site.

Please feel free to contact me at 896-8810 if you have any questions.

Sincerely,

David Sohns, Project Manager
OMI, Inc.

C: John Kolessar, P.E., Director of Public Infrastructure
Larry Webb, Director of Utilities, City of Rio Rancho

FILE COPY

City of Rio Rancho

3900 Southern Blvd. SE • PO Box 15550
Rio Rancho, New Mexico 87174-0550
(505) 896-8715 • Fax (505) 891-5201

DEPARTMENT OF
UTILITIES

Mayor
Jim Owen

City Administrator
James M. Palenick

Director of Public
Infrastructure
John Kolessar

Director of Utilities
Larry W. Webb

June 8, 2005

Certified No. 7002 2030 0003 3219 1980

Kurt Vollbrecht, Geologist
New Mexico Environment Department
Harold Runnels Building
1190 St. Francis Dr./ P.O. Box 26110
Santa Fe, NM 87502

RE: Lift Station # 15 Line Break, Calle Bona Tierra & NM 528.

Dear Kurt,

On Wednesday June 1st, at approximately 2:35 p.m., we received a call from Triad Construction Company. They are in charge of construction of the new Lift Station #15 and all related sewer line tie-ins. The Triad foreman informed us that after excavation of the force main at the manhole next to the original Lift Station #15 they began chipping away concrete around the force main to ready the line for final tie-in. During this procedure, they unintentionally punched a hole in the force main with a jack hammer causing sewage to flow into the 10' x 15' hole that had been dug out around the line. It was estimated that no more than 1000 gallons of sewage flowed into this contained holding area. It was then pumped back into the system by a tanker truck.

At that point Triad decided to go ahead and complete the tie-in, which was scheduled for the following night. The Lift Station was shut down and a fleet of 10 tanker trucks continued to pump out the wet well. They were able to maintain a low level of sewage in the wet well while transporting and releasing it into the sewer system on Willow Creek Road. The line tie-in went smoothly and the new Lift Station 15 is now on line and fully operational. The area was disinfected with HTH and backfilled with clean soil.

Please contact me at 896-8810 if you have any questions

Sincerely,

Paul A. Romero

Paul A. Romero, Acting Project Manager
OMI, Inc.

C: John Kolessar, P.E. Director of Public Infrastructure
Larry Webb, Director of Utilities, City of Rio Rancho

FILE COPY

City of Rio Rancho

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Rio Rancho, New Mexico 87174-0550
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DEPARTMENT OF
UTILITIES

Mayor
Jim Owen

City Administrator
James M. Palenick

Director of Public
Infrastructure
John Kolessar, P.E.

Utilities Division Manager
Larry W. Webb

August 12, 2005

Certified No. 7003 2260 0007 2282 1013

Kurt Vollbrecht, Geologist
New Mexico Environment Department
Harold Runnels Building
1190 St. Francis Dr. / P.O. Box 26110
Santa Fe, NM 87502

RE: Sanitary Sewer Overflow – Lift Station # 15, Calle Bona Tierra and NM 528.

Dear Kurt,

On Tuesday August 9th, at approximately 1100 hours, Our office was notified by the contractor (TRIAD) who is in charge of construction and final line tie ins of the new lift station, when the final tie was taking place there crew had set a 4" hose from the east manhole into the lift station wet well to divert the flow the hose managed to break loose and spill sewage within the lift station containment area. After the pump was shut down the contractor proceeded to open vent areas in the containment wall and released sewage within the fenced area and into the arroyo just south of the lift station. The vactor crew responded immediately, cleaned up the lift station containment area and the wet well.

Based on the extent of the spillage site, we estimate that no more than 2,000 gallons was discharged from the lift station into a contained area around the lift station and no more than 100 gallons of the total estimate was discharged into the arroyo just south of the lift station. All standing sewage, which had overflowed, was removed with our VACTOR and discharged back into the lift station wet well.

The area around the lift station and the arroyo was disinfected with granular HTH. No further problems were noted at the site.

All proper agencies where notified in a timely manner.

Please contact me at 891-5025 with any further questions in this regard.

Sincerely,

David Sohns, Project Director OMI, Inc.

Cc: John Kolessar, P. E., Director of Public Utilities, City of Rio Rancho
Larry Webb, Utilities Division Manager, City of Rio Rancho

FILE COPY

From: DAVID SOHNS
To: webb, LARRY
Date: Fri, Mar 4, 2005 2:44 PM
Subject: Re: SSO - Lift Station 15 Overflow

Larry,

Right now (Franco is still on it) it looks like a relay switch. And yes the pumps had restarted and the wet well was half way down when we arrived.

Also, after calculations, the actual spill was more like 2,000 gallons.

David

>>> LARRY webb 03/04/05 02:35PM >>>
Thanks for the information. Let me know when you find out why the SCADA system didn't alarm for loss of power. Did the pumps restart themselves or does it take a person on location to start the pumps at this site?

>>> <David.Sohns@omiinc.com> 03/04/05 09:00AM >>>
Larry,

Last night, due to a lightning strike in Enchanted Hills, lift station 15 was without power for 30 minutes. We did not receive an alarm until the power came back on (high level). We are investigating why we were not notified when the power failed.

The initial estimated discharge is 10,000 gallons. The required phone contacts have been made and we will submit a written report when all the facts are in.

The good news is that new lift station 15 should be on line within the next few weeks. At that point, we will have backup power and new SCADA equipment.

David Sohns

OMI, Inc.
Project Director
Rio Rancho, NM
Office - 505 896-8810
Fax - 505 891-1244
Cell - 505 975-1601

CC: BURKETT, JEFF; FRANCO, MIKE

City of Rio Rancho

3900 Southern Blvd. SE • PO Box 15550
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(505) 896-8715 • Fax (505) 891-5201

DEPARTMENT OF UTILITIES

Mayor
Jim Owen

City Administrator
James M. Palenick

Director of Public Infrastructure
John Kolessar

Director of Utilities
Larry W. Webb

June 8, 2005

Certified No. 7002 2030 0003 3219 1980

Kurt Vollbrecht, Geologist
New Mexico Environment Department
Harold Runnels Building
1190 St. Francis Dr./ P.O. Box 26110
Santa Fe, NM 87502

RE: Lift Station # 15 Line Break, Calle Bona Tierra & NM 528.

Dear Kurt,

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At that point Triad decided to go ahead and complete the tie-in, which was scheduled for the following night. The Lift Station was shut down and a fleet of 10 tanker trucks continued to pump out the wet well. They were able to maintain a low level of sewage in the wet well while transporting and releasing it into the sewer system on Willow Creek Road. The line tie-in went smoothly and the new Lift Station 15 is now on line and fully operational. The area was disinfected with HTH and backfilled with clean soil.

Please contact me at 896-8810 if you have any questions

Sincerely,

Paul A. Romero

Paul A. Romero, Acting Project Manager
OMI, Inc.

C: John Kolessar, P.E. Director of Public Infrastructure
Larry Webb, Director of Utilities, City of Rio Rancho

FILE COPY

City of Rio Rancho

3900 Southern Blvd. SE • PO Box 15550
Rio Rancho, New Mexico 87174-0550
(505) 896-8715 • Fax (505) 891-5201

DEPARTMENT OF
UTILITIES

Mayor
Jim Owen

City Administrator
James M. Palenick

Director of Public
Infrastructure
John Kolessar, P.E.

Utilities Division Manager
Larry W. Webb

August 12, 2005

Certified No. 7003 2260 0007 2282 1013

Kurt Vollbrecht, Geologist
New Mexico Environment Department
Harold Runnels Building
1190 St. Francis Dr. / P.O. Box 26110
Santa Fe, NM 87502

RE: Sanitary Sewer Overflow – Lift Station # 15, Calle Bona Tierra and NM 528.

Dear Kurt,

On Tuesday August 9th, at approximately 1100 hours, Our office was notified by the contractor (TRIAD) who is in charge of construction and final line tie ins of the new lift station, when the final tie was taking place there crew had set a 4" hose from the east manhole into the lift station wet well to divert the flow the hose managed to break loose and spill sewage within the lift station containment area. After the pump was shut down the contractor proceeded to open vent areas in the containment wall and released sewage within the fenced area and into the arroyo just south of the lift station. The vactor crew responded immediately, cleaned up the lift station containment area and the wet well.

Based on the extent of the spillage site, we estimate that no more than 2,000 gallons was discharged from the lift station into a contained area around the lift station and no more than 100 gallons of the total estimate was discharged into the arroyo just south of the lift station. All standing sewage, which had overflowed, was removed with our VACTOR and discharged back into the lift station wet well.

The area around the lift station and the arroyo was disinfected with granular HTH. No further problems were noted at the site.

All proper agencies where notified in a timely manner.

Please contact me at 891-5025 with any further questions in this regard.

Sincerely,

David Sohns, Project Director OMI, Inc.

Cc: John Kolessar, P. E., Director of Public Utilities, City of Rio Rancho
Larry Webb, Utilities Division Manager, City of Rio Rancho

FILE COPY

From: EDDIE DELARA
To: DAVID SOHNS; LARRY webb
Date: Mon, Jan 30, 2006 11:19 AM
Subject: Re: Lift Station #15 Spill

Larry,

Triad did respond in a timely manner, the problem was the cover to the check ball had come off when two of the bolts came loose and fell off, it was stated by Dwayne of Triad that the bolts were to short for the cover. We had to provide a cover for Triad to replace the old one since it was damaged. A total of about 3,000 gallons was spilled into the arroyo and excessive erosion was caused in and around the lift station. Triad is scheduled to be back out at the lift station on Monday morning to clean up and make repairs.

>>> LARRY webb 01/30/06 10:48AM >>>
Have you had time to ascertain what the problem was and fix is for the sewer overflow at L.S. #15 Saturday ? Did the contractor, Triad, respond in a timely manner?

City of Rio Rancho

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DEPARTMENT OF UTILITIES

Mayor
Jim Owen

City Administrator
James M. Palenick

Director of Public Infrastructure
John Kolessar, P.E.

Utilities Division Manager
Larry W. Webb

January 31, 2006

Certified No. 7005 0390 0001 6089 7483

Mr. Robert George
New Mexico Environment Department
Harold Runnels Building
1190 St. Francis Dr. / P.O. Box 26110
Santa Fe, NM 87502

RE: Sanitary Sewer Overflow – Lift Station # 15, Calle Bona Tierra and NM 528.

Dear Robert,

On Saturday January 28th, at approximately 1530 hours, the Operations Manager was in route to Rio Rancho when he observed Lift Station #15 overflowing from the south wall area and into the arroyo. He made a call and dispatched all on call staff to the site immediately. Upon inspection it was found the main wet well was empty and both pumps were fully operational which explained why no alarms were sent out through the SCADA system alerting the on call staff. The dry well was completely full and overflowing. Once the flow into the wet well was diverted and it was pumped down, it was observed that the cover for check ball # 1 had broken off. The valve was then closed to isolate the line for repair of the cover, and once completed the Lift Station was put back into operation. The VACTOR crew cleaned up the lift station containment area and the dry well.

Based on the extent of the spillage site, we estimate that no more than 2,000 gallons was discharged from the lift station into a contained area west of the lift station and no more than 1000 gallons of the total estimate was discharged into the arroyo just south of the lift station. All standing sewage, which had overflowed into the contained area was removed with out VACTOR and discharged back into the lift station wet well. The area around the lift station, contained area and the arroyo was disinfected with granular HTH. No further problems were noted at the site.

All proper agencies where notified in a timely manner. Please contact me at 896-8811 if you have any questions.

Sincerely,

David Sohns, Project Director,
OMI, Inc.

Cc: John Kolessar, P. E., Director of Public Utilities, City of Rio Rancho
Larry Webb, Utilities Division Manager, City of Rio Rancho

FILE COPY

City of Rio Rancho

3900 Southern Blvd. SE • PO Box 15550
Rio Rancho, New Mexico 87174-0550
(505) 896-8715 • Fax (505) 891-5201

DEPARTMENT OF UTILITIES

Mayor
Jim Owen

City Manager
James M. Palenick

Director of Public Infrastructure
John Kolessar, P.E.

Utilities Division Manager
Larry W. Webb

March 27, 2006 Certified No. 7005 1820 0002 4758 3769

Mr. Robert J. George
Domestic Waste Team Leader
New Mexico Environment Department
Harold Runnels Building
1190 St. Francis Dr. / P.O. Box 26110
Santa Fe, NM 87502

RE: Sanitary Sewer Overflow – Lift Station # 15 Force Main, Santiago Way and NM 528

Dear Mr. George,

On Friday March 24, at approximately 1030 hours, we were notified of sewage coming out of a manhole east of NM 528 and Santiago Way. Upon our arrival we observed that sewage was coming from the Air-Vac valve that serves the force main from Lift Station #15. The 2" valve was closed until the Air-Vac valve was replaced. The VACTOR crew was immediately dispatched for cleanup.

Based on the extent of the spillage site, we estimate that no more than 100 gallons was discharged from the Air-Vac valve. All standing sewage, which had overflowed into the contained area was removed with our VACTOR and discharged back into our dump station at WWTP # 2. The area around the manhole and contained area was disinfected with granular HTH. No further problems were noted at the site.

All proper agencies where notified, Mary M. Gomez (NMED), Robert J. George (NMED), and Alex Puglisi (Sandia Pueblo).

Please contact me at 896-8811 with any questions.

Sincerely,

David Sohns, Project Director,
OMI, Inc.

Cc: John Kolessar, P. E., Director of Public Utilities, City of Rio Rancho
Larry Webb, Utilities Division Manager, City of Rio Rancho

FILE COPY

Utility Operations M...

Western Region E-mail Notice of Violation (NOV) Form

This form to be submitted for all regulatory non-compliance events at your project

Department: Delivery
Sub Region (Underline/Bold): NW, CA/NV, **AZ/NM/UT**

Report No. RR2006-02-SSO
Report Date: 3-27-06
Incident Date:3-24-06
Project Location: Rio Rancho

Project involved: Rio Rancho

Department Involved: Wastewater

Description of violation: SSO

Overflow from manhole at NM 528 and Santiago Way

Initial Facts:

- Sewage was seeping from an air vac valve that serves the force main at Lift Station 15
- The air vac valve was replaced
- < than 100 gallons were discharged onto the west side of the lift station
- Affected areas disinfected with HTH

Correction Action	Responsibility	Timing
Closed the 2" valve at the Lift Station	Eddie DeLara	Immediately
Air vac valve replaced	Eddie DeLara	Immediately
Area disinfected with HTH	Eddie DeLara	Following Repair
Calls made to appropriate authorities	Eddie DeLara	Following Repair

Investigated by: Kyle Medders

Distribution via E-mail: RBM, RVP, RTM, CNR person

Timing: This NOV form should be completed and e-mailed within 24 hours.

* - For any incident that requires medical attention, or news media involvement, please call your RBM ASAP.

City of Rio Rancho

3900 Southern Blvd. SE • PO Box 15550
Rio Rancho, New Mexico 87174-0550
(505) 896-8715 • Fax (505) 891-5201

DEPARTMENT OF
UTILITIES

Mayor
Jim Owen

City Manager
James M. Palenick

Director of Public
Infrastructure
John Kolessar, P.E.

Utilities Division Manager
Larry W. Webb

March 27, 2006 Certified No. 7005 1820 0002 4758 3769

Mr. Robert J. George
Domestic Waste Team Leader
New Mexico Environment Department
Harold Runnels Building
1190 St. Francis Dr. / P.O. Box 26110
Santa Fe, NM 87502

RE: Sanitary Sewer Overflow – Lift Station # 15 Force Main, Santiago Way and NM 528

Dear Mr. George,

On Friday March 24, at approximately 1030 hours, we were notified of sewage coming out of a manhole east of NM 528 and Santiago Way. Upon our arrival we observed that sewage was coming from the Air-Vac valve that serves the force main from Lift Station #15. The 2" valve was closed until the Air-Vac valve was replaced. The VACTOR crew was immediately dispatched for cleanup.

Based on the extent of the spillage site, we estimate that no more than 100 gallons was discharged from the Air-Vac valve. All standing sewage, which had overflowed into the contained area was removed with our VACTOR and discharged back into our dump station at WWTP # 2. The area around the manhole and contained area was disinfected with granular HTH. No further problems were noted at the site.

All proper agencies where notified, Mary M. Gomez (NMED), Robert J. George (NMED), and Alex Puglisi (Sandia Pueblo).

Please contact me at 896-8811 with any questions.

Sincerely,

David Sohns, Project Director,
OMI, Inc.

Cc: John Kolessar, P. E., Director of Public Utilities, City of Rio Rancho
Larry Webb, Utilities Division Manager, City of Rio Rancho

FILE COPY

WR E-mail Incident Notification Form

This form to be submitted for any and all safety and vehicle incidents

Department: Delivery
Sub Region (Underline/Bold):
NW, CA/NV, and AZ/NM/UT

Report No. :RR2006-04-SSO
Report Date: 4-17-06
Incident Date: 4-15-06
Project Location: Rio Rancho

Project Involved: Rio Rancho

Department Involved: Wastewater

Description of Violation: SSO

OverFlow at L/S #15

Initial Facts

- 2500 gallons of sewage was spilled and contained in retention pond.
- 50 gallons was spilled into the adjacent arroyo.
- Cause of spill is due to control panel failure.
- Most of the sewage was pumped back into the lift station and area was cleaned and disinfected.
- Control panel dealer is working on a permanent repair.

Correction Action	Responsibility	Timing
Diverted flow to retention pond	Mark Baker	Immediately
Called On-call electrician and control panel manufacturer. Setup Hydraulic pump	Mark Baker	Immediately
Once control of pumps was regained spilled sewage was pumped back into wetwell and area was disinfected.	Mark Baker	Following Repair
All appropriate calls were made to regulatory agencies.	Pete English	Following cleanup

Investigated by: Kyle Medders
Date: 4-17-06

Distribution via E-mail: RBM, RVP, RTM, CNR person

Timing: This incident form should be completed and e-mailed within 24 hours. For any incident that requires medical attention, please **call** your RBM and e-mail ASAP.

From: "Bill Curb" <wtc@jchinc.com>
To: "'STEVE GALLEGOS'" <SGALLEGOS@ci.rio-rancho.nm.us>, "'MARK S BAKER'" <MSBAKER@ci.rio-rancho.nm.us>, <jketchum@ci.rio-rancho.nm.us>
Date: Tue, Apr 18, 2006 2:02 PM
Subject: Rio RAncho Lift station 15, Summary of events on 04/15/06

Saturday, April 15 - I received a call from Mark Baker at about 1245 PM that both Pumps in Lift Station 15 had failed to run and the station was overflowing.

At 2 PM, Rick Hobson and I arrived at the station. Controls indicated both pumps had failure on Bearing Over Temperature and Motor Over Temperature and one pump showing Mechanical Seal Failure. Both pumps were not being allowed to run by the controls based upon these failures.

Jim Stone from Metro Electric and myself were able to bypass the pump sensors and manually run the pumps to pump the station down. Over the next several hours we were able to determine that the pumps would run normally and reliably in automatic with all the above protective pump sensors by-passed (except the overloads and auto megging protection). Rick Hobson and I left the station around 8 PM with the plan to return on Monday to try and determine the cause of the failure.

Monday, April 17 - On Monday afternoon at approx. 3:30 PM, Russ Caskey from JCH service and I arrived at the station with our service truck to investigate the reason for the pump failure. We were able to determine that the pump power and control cables were not secured to the top of the station and the control cables had been sucked into the pump suction on each pump and severed, causing the sensing modules in the control panel to believe that the pump sensors were signaling high bearing temperature, high stator temperature, and mechanical seal failure, resulting in pump shutdown. Jim McCarthy and Rick Hobson arrived with our other service truck at 6 PM and we all assisted Mark Baker to remove one of the pumps and to install and test the owner's spare pump.

We left the station at 11 PM, station operating in automatic, with the newly installed spare pump running normally with all sensors connected, and the other pump running with all but the auto megging protection by passed. The power and control pump cables were pulled up and tied to the top of the station with rope on a temporary basis with a more permanent and secure attachment of the cables to be accomplished by others.

The removed pump is to be inspected and repaired by JCH and returned for installation by others.

Please call or email with any questions

City of Rio Rancho

3900 Southern Blvd. SE • PO Box 15550
Rio Rancho, New Mexico 87174-0550
(505) 896-8715 • Fax (505) 891-5201

DEPARTMENT OF
UTILITIES

April 20th , 2006

Certified No. 7005 0390 0001 6089 6905

Mr. Robert J. George
Domestic Waste Team Leader
New Mexico Environment Department
Harold Runnels Building
1190 St. Francis Dr. / P.O. Box 26110
Santa Fe, NM 87502

RE: **Sanitary Sewer Overflow – Lift Station # 15 and NM 528.**

Dear Mr. George,

On Saturday April 15, at approximately 1230 hours, we received an alarm condition from Lift Station # 15. Upon arrival it was observed that the wet well was about two feet from overflowing and both pumps were in fail mode. Operations staff and Vactor crew were immediately dispatched to set up our mobile pump and tanker trucks to contain overflow at a minimum.

The maintenance staff begin to trouble shoot the pumps and were able to replace one pump and pump down the wet well to prevent any further spillage, the maintenance staff continued to work on the lift station to resolve any other mechanical issues.

Based on the extent of the spillage site, we estimate that no more than 2500 gallons was discharged from the lift station and 50 gallons of that total was discharged into the arroyo just south of the lift station. All standing sewage, which had overflowed into the containment area was removed with our VACTOR and discharged back into the lift station.

The containment area and lift station was disinfected with granular HTH. No further problems were noted at the site.

All proper agencies where notified, Mary M. Gomez (Local NMED), Robert J. George (State NMED), Alex Puglisi (Sandia Pueblo Environmental Office), Joel Lusk (NM Fish & Wildlife).

Please contact me at 891-5022 with any further questions in this regard.

Sincerely,

Eddie De Lara Jr, Operations Manager,
OMI, Inc.

Cc: John Kolessar, P. E., Director of Public Utilities, City of Rio Rancho
Larry Webb, Utilities Division Manager, City of Rio Rancho

WR E-mail Incident Notification Form

This form to be submitted for any and all safety and vehicle incidents

Department: Delivery
Sub Region (Underline/Bold):
NW, CA/NV, and AZ/NM/UT

Report No. :RR2006-06-SSO
Report Date: 5-1-06
Incident Date: 4-29-06
Project Location: Rio Rancho

Project Involved: Rio Rancho

Department Involved: Wastewater

Description of Violation: SSO

Overflow lift station #15

Initial Facts

- At 8:00 AM lift stations #15, 21, 22 all showed high levels. Lift stations had just been put back into service following a force main break on 4-28-06.
- Crews started to check air vacs thinking that the main might be air locked.
- Atlas pumping was contacted to pump out lift stations before they spilled.
- Lift station #15 spilled 500 gallons into a containment pond before pumping trucks could arrive.

Correction Action	Responsibility	Timing
Manually opened air vacs to relieve pressure	Mark Baker	Immediately
Contacted Atlas pumping service	Eddie DeLara	Immediately
Verified valves on force main and found one partially opened, opened valve fully.	Pete English	After Air Vacs were found to be OK
All appropriate calls were made to regulatory agencies.	Eddie DeLara	Following cleanup

Investigated by: Kyle Medders
Date: 4-30-06

Distribution via E-mail: RBM, RVP, RTM, CNR person
Timing: This incident form should be completed and e-mailed within 24 hours. For any incident

City of Rio Rancho

3900 Southern Blvd. SE • PO Box 15550
Rio Rancho, New Mexico 87174-0550
(505) 896-8715 • Fax (505) 891-5201

DEPARTMENT OF UTILITIES

Mayor
Kevin Jackson

City Manager
James M. Palenick

Director of Public Infrastructure
John Kolessar, P.E.

Utilities Division Manager
Larry W. Webb

May 2, 2006

Certified No. 7005 1820 0002 4758 3912

Robert George
New Mexico Environment Department
Harold Runnels Building
1190 St. Francis Dr. / P.O. Box 26110
Santa Fe, NM 87502

RE: Sanitary Sewer Overflow – Lift Station 15 at NM 528

Dear Mr. George,

On Saturday April 29th, at approximately 1030 hours, we received a high level alarm from Lift Station 15. Upon arrival at the lift station we found Pumps 1 and 2 were not pumping to full capacity. The VACTOR crew and tanker trucks were immediately dispatched to pump down the wet well and also the containment area at the lift station. Upon further investigation it was discovered that a valve on the 14" force main south of the lift station was left partially closed the previous night when emergency repairs were made to it. The valve was fully opened and the lift station pumps began to pump at full capacity. The lift station wet well completely pumped down and put back in service.

Based on the extent of the spillage site, we estimate that no more than 500 gallons were discharged from the lift station into the containment area. All standing sewage, which had overflowed into the contained area, was removed with a tanker truck and discharged back into the system. The area around the lift station and contained area was disinfected with granular HTH. No further problems were noted at the site.

The following agencies were notified on Month Day of this event:
Robert George at the State NMED Office at 12:30 p.m.
Mary M. Gomez at the Local NMED Office at 12:32 p.m.
Alex Puglisi at the Pueblo of Sandia's Environmental Office at 12:33 p.m.

Please contact me at 896-8811 if you have any questions.

Sincerely,

Eddie De Lara, Jr. Operations Manager
OMI, Inc.

Cc: John Kolessar, P. E., Director of Public Utilities, City of Rio Rancho
Larry Webb, Utilities Division Manager, City of Rio Rancho

FILE COPY

RioRancho
City of Vision

June 19, 2007 Certified No. 7006 2150 0005 1858 8107

Ms Mary Simmons
EPA Region 6 (6EN-WC)
Water Enforcement Branch
1445 Ross Avenue

RE: NPDES Permit # NM00272987
Sanitary Sewer Overflow – NM 528 and Santiago Way

Dear Ms. Simmons,

On Thursday June 14, 2007 at approximately 1600 hours OMI responded to a call at NM 528 and Santiago Way. Upon arrival we observed sewage flowing out of a valve box next to an air relief valve on the 12" force main.

The collections crew arrived on site as well as the maintenance crew. They mobilized a backhoe to the site to excavate the leaking area and expose the 2" supply line to the air relief valve fitting. The area was carefully exposed and cleaned up, a full circle repair clamp was put in place on the 12" force main and the old air relief valve was taken out of service. A new air relief valve will be put into service at a later date.

Based on the extent of the spill at the site, we estimate that no more than 200 gallons was discharged from the cracked 2" supply line to the air relief valve. This was due to intermittent pump cycles from the lift station feeding the force main. All standing sewage, which had overflowed into the area was removed with our VACTOR and discharged back into our system.

Public Infrastructure Department ○ Utilities Division
3900 Southern Blvd ○ Suite 206 ○ Rio Rancho ○ NM ○ 87124
(505) 896-8715 ○ Office
(505) 891-5201 ○ Fax

FILE COPY

The area around the air relief manhole and valve box was disinfected with granular HTH. No further problems were found at the site.

Please contact me at 896-8811 if you have any questions.

Sincerely,

Cliff Leeper
Project Manager
CH2M HILL OMI

Cc: Anthony Losten, USEPA
Sandra Gabaldon, NMED
Robert George, NMED
Hiromi Martinez, NMED
Alex Puglisi, Director of Environment, Sandia Pueblo
John Kolessar, P. E., Director of Public Infrastructure, City of Rio Rancho
Larry Webb, Utilities Division Manager, City of Rio Rancho

Other Costs

Name	Description	Invoice #	Date	Charge
AAA Pumping $8,667.00			9/14/2010	$8,667.00
American Pumping			9/14/2010	$5,727.38
Atlas Pumping			9/14/2010	$140,025.25
Bradbury Stamm Construction			9/13/2010	$75,390.48
Other Cost Totals:				$229,810.11

Totals

Section	Charge
Labor Total	$4,750.63
Materials Total	$0.00
Other Costs Total	$229,810.11
Grand Total:	$234,560.74

Labor Report

Completed: 10/13/2010 9:51:00 AM Failure: DEF / Defective Part Meter(s):

Report: Split in forced main was appearantly caused by the saddle mounted air beed valve causing it to eventually split. Repairs were made by Bradbury Stahm. Section of broken line was replaced and manhole was reinstalled with concrete below it for stabilization. Bypass of the lift station was accomplished by the use of tankers which hauled all sewage to another place in the system. Wastewater and Collection staff assisted in coordinating repairs and bypass.

Forced Main Spill from LS 15 on 09-13-2010

- At entrance to Santiago subdivision in Bernalillo.
- Spill started at approximately 06:00 PM
- First to arrive was Eric Romero with vactor at approximately 06:30 PM. Vactor was ineffective in containing flow from break.
- Observed pumping from LS15 to be cycling at 3 min. on and 6 min. off during peak flow.
- At approximately 8:00 called Atlas Pumping, American Pumping, and AAA Pumping. Total trucks 7- 4000 gal and 1- 6500 gal plus CRR 6500 gal tanker.
- 09:20 called Bradbury Stahm (Evan Anderson) to mobilize equipment and personnel.
- Took down part of fence at LS15 to make room for 3 to 4 trucks to pump from wet well simultaneously.
- Trucks staged and ready to start pumping at approximately 11:00 PM.
- Light towers were set up.
- Bradbury ready to start excavating at 12:00 PM.
- Shutdown LS15 at 12:30 AM, Bradbury started excavation.
- Repairs to main completed at approximately 07:25 AM.
- LS15 started pumping at 07:29 AM
- Clean and repair of site of site to continue throughout 09-14-10 by Bradbury

AAA Pumping 978-5407
American Pumping 347-7667 - 975-4525
Atlas 898-3963

Total loads from LS15:

- Atlas = 14
- American = 6
- AAA = 12

RioRancho
City of Vision

Work Order WW-12168

Wastewater
Printed 7/8/2011 - 12:43:30 PM

Maintenance Details

Requested By: Channell, Ryan on 4/29/2011 1:14:00 PM
Taken By: Channell, Ryan
Problem: Repair (REPAIR)

Target: 2/14/2011 (0) hr
Priority/Type: Normal / Corrective
Supervisor: Salazar, Flavio
Shop: WW-MAINT

Wastewater
Lift Stations
Lift Station #15 (PUMPING STATION 15)
Submersible Pump #1 LS 15 (PUMP-SUB-29)

Reason: Submersible Pump #1 LS 15 (PUMP-SUB-29) - pump failure caused by debris stuck in the impeller

Special Instructions: cause of failure: debris was stuck in the impeller, causing vibration that ruined the seal and broke the volute bolt. the impeller was already worn completely through the housing from cavitation. repair: recondition stator, relace ball and thrust bearings, upper and lower seals, o-ring kit, stationary wear ring, all power and control cables, cable grommets, stainless steel bolts, pins, washers, and new impeller. parts = $22067.63 labor = $2560.50 tax = $179.24

Contact: Channell, Ryan
Phone:

☐ Warranty ☐ Shutdown ☐ Lockout ☐ Attach ☐ Charge

Other Costs

Name	Description	Invoice #	Account	Date	Est Cost	Actual Cost
Recondition stator		29826		2/14/2011	$ 0.00	$ 24,807.37

Labor Report

Completed: 4/29/2011 1:14:00 PM Failure: DIRT / Dirt or Foreign Matter

Report: Fixed and completed.

RioRancho
City of Vision

September 17, 2010

Certified No. 7008 1830 0002 5625 8867

Ms Mary Simmons
EPA Region 6 (6EN-WC)
Water Enforcement Branch
1445 Ross Avenue
Dallas, Texas 75202-2733

Re: NPDES Permit # NM00272987, Intersection of Highway 528 and Santiago Way

Dear Ms. Simmons,

On the evening of September 13, 2010, a call was received at approximately 6:00 p.m. regarding a sewer overflow near the intersection of State Highway 528 and Santiago Way. Crews responded and were on site by 6:30 p.m. The crew began using a Vactor truck to pump out a manhole where the overflow was occurring and soon understood they could not keep up with the flows from the leak. The leak was determined to be on a sewer force main running from the Enchanted Hills area subdivision.

In order to address repairs to the force main, a fleet of 8 tanker trucks were staged at the Lift Station #15 feeding the force main. In the meantime, a contractor was called to begin mobilizing additional crews and equipment to repair the force main. Emergency line spots were called before any excavation was undertaken.

At 11:00 p.m. the lift station pumps were shut down and pumping to the tanker trucks began. The tankers began taking all of the influent of the lift station and transporting the sewage to an area below not being served by the force main.

As soon as the lift station was shut down, excavation began on the force main leak and continued through the night until the force main was repaired. Excavation and repairs to the force main continued throughout the night until a new section force main was installed and the lift station was turned back to normal operations at 7:29 on the morning of September 14.

A 20-foot section of 12" force main had a fracture in the pipe, the fracture was most likely caused by pipe stress during the installation.

The area impacted by the sewage overflow was treated with granular HTH. The street areas were cleaned and swept and washed down with clean water.

The estimated volume of the overflow was 30,000 gallons based on a lift station flows and pumping cycles calculations. Calls were made to all regulatory agencies with the required 24-hour time frame.

Please contact me at 896-8811 if you have any questions.

Sincerely,

Cliff Leeper, Project Manager
CH2M HILL

CL/ab

cc: Anthony Losten, USEPA
Sandra Gabaldon, NMED
Robert George, NMED
Hiromi Martinez, NMED
Larry Webb, Utilities Division Manager, City of Rio Rancho
Scott Bulgrin, Director of Environment, Sandia Pueblo
Joel Lusk, Department of Game & Fish

RioRancho
City of Vision

September 24TH, 2010

Certified No. 7005 0390 0001 6089 6950

Ms. Mary Simmons
EPA Region 6 (6EN-WC)
Water Enforcement Branch
1445 Ross Avenue
Dallas, Texas 75202-2733

Re: NPDES Permit # NM00272987
Sanitary Sewer Overflow – State Highway 528 and Santiago Way

Dear Ms. Simmons:

A contractor was doing a hot tap on a live 12" force main at the intersection of State Highway 528 and Santiago Way. At approximately 09:00 AM the valve on the tapping device blew apart during the installation process. The sub contractor made a call to our collections crews stating that we need to bring vactors and manpower to help address the spill. Our crews arrived on the scene at 9:30 and began pumping the flooded manhole with a truck vactor, the lift station feeding the force main was shut down. This allowed crews to reenter the manhole and install a new valve. Systems were put back into normal operations at 9:55.

Approximate spill volume was 300 gallons, most of which was contained in dirt berms around the manhole. Some of the raw sewage did make it into the street. This was treated with a light dusting of granular HTH and then flushed liberally with a water truck.

All agencies were notified with required time frames.

Please contact me at 896-8811 if you have any questions.

Sincerely,

Cliff Leeper, Project Manager
CH2M HILL/ OMI

Cc: Anthony Losten, USEPA
Sandra Gabaldon, NMED
Robert George, NMED
Hiromi Martinez, NMED
Larry Webb, Utilities Division Manager, City of Rio Rancho
Scott Bulgrin, Director of Environment, Sandia Pueblo
Joel Lusk, Department of Game and Fish

File copy

Department of Public Infrastructure o Utilities Division
3200 Civic Center Circle NE ~ Rio Rancho, New Mexico 87144
(505) 896-8715 o Office
(505) 891-5201 o Fax

Atlas Pumping
PH. 505.898.3936
FAX 505.343.9231
P.O. BOX 10477
ALBUQUERQUE, N.M. 87184

FAX

To: Mark From: Dan Mac

Fax: 892-5543 Pages: 3

Phone: Date: 9/16/10

Re: CC:

Urgent For Review Please Comment Please Reply Please Recycle

- Comments: Thanks

Sanchez

Atlas Pumping

NM CONTRACTOR LICENSE 51797

200 SIN NOMBRE, NE
ALBUQUERQUE, NEW MEXICO 87113

(505) 898-3936 FAX: (505) 343-9231 admin@atlaspumping.com

No. 55552

DATE: 9/13/10
DRIVER: LC

BILLING NAME AND ADDRESS:

City of Rio Rancho
Mark Bedker
Cell# 975-1565 FAX 892-5543

LOCATION:

Lift Station Hwy
528 Rio Rancho

PURCHASE ORDER #	PAID BY	CHECK NO:	VISA/MC #	CASH

PUMPED:

- SEPTIC TANK
- SAND TRAP
- WASTE WATER
- EXTRA HOSE
- INSPECTION
- DUMP FEE
- RISER
- LINES JETTED
- GELS
- LABOR
- SEWER RAT
- OTHER
- OTHER

Pump Lift Station
3 4000 Gal Trucks
1 7000 Gal Truck

Atlas Pumping

After Hours
Mon. 09/13/10 9:30 PM 11 HRS
Tues 09/14/10 6:30 AM
300.00 per Truck and Driver
Hauled 14 Loads

WE APPRECIATE YOUR BUSINESS!

SUBTOTAL	13,200.00 XX
TAX	0
TOTAL	13,200.00

NOTES:

Atlas Pumping Co., Inc. its agents and employees shall not be liable and is released from any damages caused during this service.
All accounts are net 30. 1.5% late fee on all past due amounts.

CUSTOMER SIGNATURE:

Invoice

Number: 449887
Date: 16-Sep-2010
P.O. Number:
Job Description:
Order Num 449887
Serviced 13-Sep-2010

BILL TO: 774	JOB SITE
CITY OF RIO RANCHO 3200 CIVIC CENTER CIRCLE NE RIO RANCHO, NM 87144	Mark B 528 RIO RANCHO LIFT STATION RIO RANCHO, NM 87124

Quantity	ServiceType	Amount	Tax	Extension
1	Wastewater 3 FOUR THOUSAND GA AND 1 SEVEN THOUSAND GALLON TRUCKS 11 HOURS AND 14 LOADS HAULED	$13,200.00	No	$13,200.00

Taxable Amount	Tax Rate	Tax	Description
$0.00	0	$0.00	EXEMPT

Subtotal NonTaxed:	$13,200.00
Subtotal Taxable:	$0.00
Subtotal Tax:	$0.00
Please Pay:	**$13,200.00**

Payment Terms	Payment	Adjustment	Late Charge
Net 30	$0.00	$0.00	$0.00

From:
CITY OF RIO RANCHO
3200 CIVIC CENTER CIRCLE NE
RIO RANCHO, NM 87144

Please detach here and return the bottom portion with your payment.

Order No.	Invoice No.	Date	Amount Due
449887	449887	16-Sep-2010	$13,200.00

To:

ATLAS PUMPING COMPANY, INC.
P.O BOX 10477
ALBUQ, NM 87184-0477

AAA Pumping Service, Inc.
P.O. Box 12186
Albuquerque, NM 87195
(505) 345-3965

Invoice #: 73994
Invoice Date: Sep 15, 2010
Page #: 1
Site PO.:
Cust. PO.:
Terms: NET10

City Of Rio Rancho
3200 Civic Center Circle Ne
Rio Rancho, NM 87144-4501

Due Date	Type	Job Site Information / Description	Rate	Units	Amount
Sep 13, 2010		LIFT STATION PUMP - Reference Hwy 528 Lift Station Job location: Hwy 528 Lift Station (City Sewer Main break) 9 hours @ $300.00 per hour = $2700.00 X 3 trucks PO# Mark Baker	$ 8,100.00	1.00	$ 8,100.00
Sep 13, 2010		Sales Tax	$ 7.00 %	7.00 %	$ 567.00
		Invoice Total			$ 8,667.00

If paying by Credit Card please circle which card type and write in your card number in the space provided below:

REMITTANCE ADVICE - PLEASE RETURN WITH YOUR PAYMENT

AAA Pumping Service, Inc.
P.O. Box 12186
Albuquerque, NM 87195

Customer #: 001219 - 000000
Invoice #: 73994
Invoice Date: Sep 15, 2010
Site PO.:
Cust. PO.:
Terms: NET10
Card Type: (Please Circle Below)
Visa / Mastercard /
Card No.: _____ Exp. _____
3 Digit Security Card Code (On Back of Card): _____
Signature: _____
Invoice Total: $ 8,667.00
Amount Enclosed

AMERICAN PUMPING SERVICE

P.O. Box 10595
ALBUQUERQUE, NEW MEXICO 87184-0595
(505) 344-7667 Fax (505) 342-9125
License #350852

CUSTOMER'S ORDER NO. | PHONE | DATE 9-13-10

NAME City of Rio Rancho

ADDRESS Svc: 528 & Santiago Way

RIO RANCHO NM.

SOLD BY	CASH	C.O.D.	CHARGE	ON ACCT.	MDSE. RET'D.	PAID OUT
Tony						

QTY.	DESCRIPTION	PRICE	AMOUNT
2	Trucks Pumping & Lift Station		5400 00
	11:00PM – 8:00AM		
	9 HR		
	2 trucks / 9 hours	300 00 per truck per hour	
	Time In _____		
	Time Out _____		
	1½% Per month (18% per annum) service charge on past due accounts. In case of default a reasonable attorney's fee & all collection costs will be paid by purchaser.	TAX	327 38
		TOTAL	5727 38

RECEIVED BY

All claims and returned goods MUST be accompanied by this bill.

PO BOX 10595
ALBUQUERQUE, NM 87184-0595
PH 505-344-7667
FAX 505-342-9125

American Pumping Service

Fax

To: Mark Baker
From: Sandra
Attn:
Pages: 2
Fax: 892-5543
Date: 9-15-10
Phone: 975-1565
cc: Invoice

☐ Urgent ☐ For Review ☐ Please Comment ☐ Please Reply ☐ Please Recycle

• Comments

AAA PUMPING SERVICE, INC.
FAX COVER SHEET

Ph: 505-345-3965/Fax: 505-243-0314
E-mail: AAAPumping@Hotmail.com
Website: www.AAAPumpingservice.com

Date: 9/15/10

To: Mark Baker **From:** *Candy*

Co: City of Rio Rancho

Fax: 892-5543 **Phone:** 975-1565

No. of Pages: 2 **including cover**

Invoice for pumping at Sewer Main break on Monday 9/13/10.

Please advise if you need me to mail an invoice also

Thank you
Have a safe and enjoyable day

INVOICE

City of Rio Rancho
100 Industrial Park Loop
Rio Rancho, NM 87124

RE: Emergency Forcemain Repair @ Rivers Edge II

PO #: 110966

Invoice #: 210001-13-01
Invoice Date: November 29, 2010

Work Description:

Billing for emergency work required to repair the 6" force main at Rivers Edge II on November 26, 2010. Work included exposing existing 6" SDR 26 forcemain and replacing broken section of line with new 6" C900 DR18 pipe.

Invoice Cost:

6" Forcemain line repair (see attached for detail)	$2,775.65
NMGRT @ 7.1875%	199.50
	$2,975.15

Payment should be made to AUI Inc. referencing the invoice number above and is due upon receipt. Please feel free to forward any questions or clarifications regarding this billing.

Submitted by:

AUI Inc.

Kathryn Jordan
Project Manager

Attachment (Cost breakdown)

MAIL ONLY: PO Box 9825, Albuquerque, NM 87119-9825 • DELIVERIES ONLY: 7420 Reading Ave. SE, Albuquerque, NM 87105
TELEPHONE: (505) 242-4848 • MAIN FAX: (505) 998-5251 • ESTIMATING FAX: (505) 242-9050
Contractor's License No. 20617 • An Equal Opportunity Employer
www.auiinc.net

TOTALS FOR FORCE ACCOUNT WORK
CONTRACTOR: AUI INC.

FORCE ACCOUNT T&M FOR: EMERGENCY REPAIR TO MANHOLE

JOB NAME	*EMERGENCY REPAIR TO 6" FORCEMAIN AT RIVERS EDGE II (PO# 110966)*
AUI JOB NUMBER	*210001-13*
DATES OF T&M WORK	*11/26/2010*

DESCRIPTION OF WORK:

Work required to repair the 6" forcemain that broke at Rivers Edge II by Riverside Dr. Costs below reflect the effort required to repair the line. Costs reflect the use of CORR backhoe for excavations.

Force Account T&M Cost		**$**	**2,775.65**
Add: Performance & Payment Bond Adjustment @	**0%**	**$**	**-**
Subtotal		**$**	**2,775.65**
Add: NMGRT @	**7.1875%**	**$**	**199.50**
TOTAL		**$**	**2,975.15**

LABOR

PERSONNEL DESCRIPTION	WAGE RATE DIRECT LABOR	LBR BURDEN 50%	CONTR. FEE 20%	SUBTOTAL HOURLY RATE	STANDARD HOURS	O.T. HOURS @ 1.5 x RATE	$ LABOR EXTENSION
Wayne Jiron (Super)	$ 32.00	$ 16.00	$ 9.60	$ 57.60	8.0	-	$ 460.80
Eugene Rael (Foreman)	$ 25.00	$ 12.50	$ 7.50	$ 45.00	5.0	-	$ 225.00
Steve Cabrerra (Foreman)	$ 21.00	$ 10.50	$ 6.30	$ 37.80	8.0	-	$ 302.40
Adam Contreras (operator)	$ 16.79	$ 8.40	$ 5.04	$ 30.22	7.0	-	$ 211.55
Gilberto Borunda (labor)	$ 14.78	$ 7.39	$ 4.43	$ 26.60	7.0	-	$ 186.23
Jesus Garcia (labor)	$ 14.78	$ 7.39	$ 4.43	$ 26.60	5.0	2.0	$ 212.83
Edward Quintana (labor)	$ 14.38	$ 7.19	$ 4.31	$ 25.88	5.0	2.0	$ 207.07
		$ -	$ -	$ -	-	-	$ -
		$ -	$ -	$ -	-	-	$ -
					LABOR TOTAL :		$ 1,805.89

EQUIPMENT

DESCRIPTION	UNIT NUMBER	COA BLUEBK. RATE	INVOICED RENTAL RATE	CONTR. FEE 20%	SUBTOTAL HOURLY RATE	TOTAL HRS/DAYS IN USE	$ EQUIPMENT EXTENSION
F250 truck	9176	$ 15.75		$ 3.15	$ 18.90	8.00	$ 151.20
F450 truck	9346	$ 21.30		$ 4.26	$ 25.56	5.00	$ 127.80
F450 truck	9342	$ 21.30		$ 4.26	$ 25.56	8.00	$ 204.48
				$ -	$ -		$ -
				$ -	$ -		$ -
				$ -	$ -	-	$ -
				$ -	$ -	-	$ -
					EQUIPMENT TOTAL :		$ 483.48

MATERIALS & MISCELLANEOUS

DESCRIPTION	UNIT OF MEASURE	QUANTITY	UNIT COST	CONTR. FEE 20%	SUBTOTAL UNIT PRICE	$ MATERIALS EXTENSION
6" C900 PVC pipe	LF	20.00	$ 4.45	$ 0.89	$ 5.34	$ 106.80
6" MJ Sleeve	EA	2.00	$ 53.00	$ 10.60	$ 63.60	$ 127.20
6" Megalug	EA	4.00	$ 35.07	$ 7.01	$ 42.08	$ 168.34
6" bolt & gasket kit	EA	2.00	$ 16.34	$ 3.27	$ 19.61	$ 39.22
6" transition gasket	EA	2.00	$ 18.64	$ 3.73	$ 22.37	$ 44.74
				$ -	$ -	$ -
				$ -	$ -	$ -
				$ -	$ -	$ -
				$ -	$ -	$ -
		-		$ -	$ -	$ -
				$ -	$ -	$ -
					MATERIAL TOTAL :	$ 486.29

ELAINE ALLEN - Re: Sewer line break at Santiago's Subdivision

From: LARRY webb
To: Service, Jim
Date: 9.15.2010 5:33 PM
Subject: Re: Sewer line break at Santiago's Subdivision
CC: ALLEN, ELAINE; Alsop, Trevor; Casaus, Debbie; EricaBaca; GALLEGOS, STEVE; JIMENEZ, JAMES; LEEPER, CLIFF; SENSANBAUGHER, SCOTT; Stoliker, David; VORNHOLT, LISA

Jim, the description of the break and repair time lines are about what I understand. The route the sewage took through the subdivision in the storm drain feature is what I observed that night. The description of the flow is not how it was described to me nor in the pictures I received, I didn't have the opportunity to walk the arroyo. Can you get with Cliff Leeper and visit the location tomorrow so he understands where the sewage ended up. Cliff will call you in the morning. I will get with him tomorrow afternoon to go over the spill once again. Thanks for the description.

>>> Jim Service <JService@sscafca.com> 9/15/2010 5:05 PM >>>
Larry:
At about 10 a.m. this morning David told me about the force main break at the entrance to the Santiago's Subdivision and NM 528.

The crews on-site told Trevor and I the force main appears to be 12"-15" in diameter and has a force flow of approximately 2000gpm. The break was reported Monday, Sept. 13 and crews were on-site around 6pm that same day. The break was repaired by Tuesday, Sept. 14th around 7 a.m. If any of the above is incorrect please advise.

Unfortunately almost all of that sewage went onto hard surfaces and then either into a concrete lined channel to the east or into a 36" RCP to the north and thus into the Venada Arroyo.

At the end of the concrete lined channel is an energy dissipation concrete box at the Venada Arroyo which appears to be plugged and full of liquid waste and debris.

The sewage ran down the entire length of the Venada and collected in our water quality facility at the river end of the arroyo. It then overtopped the water quality feature and made it to the river channel.

This break is different from the August 23rd break in the Los Montoyas which was due to a storm event. The break at Santiago's was directly onto hard surfaces and then into the arroyo with no mitigating sediment or diluting run-off volume accompanying the flow.

Please advise us of the actions the city plans to take in order to address this situation.
Thank you,
Jim

James Service
Field Operations Coordinator
Southern Sandoval County
Arroyo Flood Control Authority

1041 Commercial Dr. S.E.
Rio Rancho, New Mexico 87124
505-892-RAIN (7246)
505-892-7241 (Fax)
email: jservice@sscafca.com
www.sscafca.com

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ELAINE ALLEN - Sewer line break at Santiago's Subdivision

From: Jim Service <JService@sscafca.com>
To: "Lwebb@ci.rio-rancho.nm.us" <Lwebb@ci.rio-rancho.nm.us>
Date: 9.15.2010 5:05 PM
Subject: Sewer line break at Santiago's Subdivision
CC: "ssensanbaugher@ci.rio-rancho.nm.us" <ssensanbaugher@ci.rio-rancho.nm.us>, David Stoliker <DStoliker@sscafca.com>, "CLEEPER@ci.rio-rancho.nm.us" <CLEEPER@ci.rio-rancho.nm.us>, "EALLEN@ci.rio-rancho.nm.us" <EALLEN@ci.rio-rancho.nm.us>, "JJIMENEZ@ci.rio-rancho.nm.us" <JJIMENEZ@ci.rio-rancho.nm.us>, "LVORNHOLT@ci.rio-rancho.nm.us" <LVORNHOLT@ci.rio-rancho.nm.us>, Debbie Casaus <DCasaus@sscafca.com>, EricaBaca <EBaca@sscafca.com>, "SGALLEGOS@ci.rio-rancho.nm.us" <SGALLEGOS@ci.rio-rancho.nm.us>, Trevor Alsop <TAlsop@sscafca.com>

Larry:
At about 10 a.m. this morning David told me about the force main break at the entrance to the Santiago's Subdivision and NM 528.

The crews on-site told Trevor and I the force main appears to be 12"-15" in diameter and has a force flow of approximately 2000gpm. The break was reported Monday, Sept. 13 and crews were on-site around 6pm that same day. The break was repaired by Tuesday, Sept. 14th around 7 a.m. If any of the above is incorrect please advise.

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The sewage ran down the entire length of the Venada and collected in our water quality facility at the river end of the arroyo. It then overtopped the water quality feature and made it to the river channel.

This break is different from the August 23rd break in the Los Montoyas which was due to a storm event. The break at Santiago's was directly onto hard surfaces and then into the arroyo with no mitigating sediment or diluting run-off volume accompanying the flow.

Please advise us of the actions the city plans to take in order to address this situation.
Thank you,
Jim

James Service
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APPENDIX F

ABATEMENT PLAN FOR INJECTION ACTIVITY

Amended Stage II Abatement Plan at the Former Price's Bernalillo Dairy

By
Faith Engineering, Inc.
5701 Piedra Dr. NW
Albuquerque, NM 87114

Prepared for
VG Farms, Inc.
2 Sandia Heights Dr. NE
Albuquerque, NM 87110

and the
Ground Water Quality Bureau
New Mexico Environment Department
1190 St. Francis Dr,
Santa Fe, NM 87502

January 31, 2008

FEI | Faith Engineering, Inc.
5701 Piedra Dr. NW
Albuquerque, New Mexico 87114
(505) 898-6140 • FAX (505) 898-1132
e-mail • faithinc@flash.net

January 31, 2008 **via email and US Mail**

Mr. Bart Faris
Remediation Oversight Section
Ground Water Quality Bureau
New Mexico Environment Department
5500 San Antonio NE
Albuquerque, New Mexico 87109

RE: Amended Stage II Abatement Plan
Price's Valley Gold, North Dairy
Hwy. 528, Bernalillo, Sandoval County, NM
FEI Project No. 99-08-1180

Dear Mr. Faris:

On behalf of VG Farms, Inc. (applicant), Faith Engineering, Inc. (FEI) is pleased to submit herewith the, "Amended Stage II Abatement Plan" for the subject facility. This plan is being submitted as an alternate to the Stage II Plan, which was submitted on September 18, 2007. That plan proposed the use of Monitored Natural Attenuation (MNA) as a primary remediation option with a contingent plan utilizing carbon source nutrient injection should the primary MNA plan fail to meet expected performance monitoring objectives.

After discussion with NMED staff subsequent to the above described AP submittal, VG Farms, Inc. has elected to amend the primary MNA remediation option proposed in the 9/18/07 proposal in favor of a more aggressive abatement plan utilizing in-situ denitrification.

This plan differs from the contingent plan offered in the 9/18/07 Stage II AP submittal in both the location and the rates of ground water pumping and nutrient injection. Part of the rationale for the amended primary remediation plan is the existing development schedule for the site and the desire to reach plan performance objectives in a more expeditious manner.

The 9/18/07 Stage II AP submittal provided discussion of previous investigations and the hydrogeology of the site as it pertains to contaminant distribution and transport pathways. Therefore, this amended plan provides only the technical information related to implementation, operation and monitoring of the proposed primary denitrification plan.

VG Farms is planning to begin drilling of the proposed nutrient injection wells and the ancillary replacement monitoring wells in mid February 2008. It is anticipated that the remediation system will be ready to begin operation by the end of March 2008.

Finally, VG Farms pursuant to Section 20.6.2.3106 NMAC requests approval of a temporary discharge permit to conduct this remediation effort, and has included a check payable to the Water Quality Management Fund for $150 pursuant to Section 20.6.2.3107 NMAC.

We would like to thank you again for your continued support and cooperation in this effort. Please do not hesitate to call me should you have any questions.

Respectfully submitted,
FAITH ENGINEERING, INC.

Stuart E. Faith

Stuart E. Faith, President
NM Professional Engineer No. 6396

cc: Mr. Dudley Price, VG Farms, Inc.
Mr. John Price, VG Farms, Inc.
Mr. Ron Bohannan, Terra West, LLC
Mr. Patrick Hurley, Esq.
Ms. Tessa Davidson, Esq.

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Appendix B – Injection Well Radius of Influence

1. Discussion of Enhanced In Situ Bioremediation (EISB) at the VG Farms Site

The previous Stage II AP provided a description of the geohydrologic boundary between the bluff forming Duranes Formation and the eastward lying Rio Grande Valley Fill. This boundary can be seen clearly on photo and topographic maps of the site where the bluff forming sediments meets its erosional contact with the Rio Grande. VG Farms proposes to complete a series of 4 inch diameter wells spaced fifty (50) ft. apart along the above described boundary, and to inject a solution of diluted sugar with supplemental additions of tri-sodium phosphate (TSP – an additional required nutrient) and sodium bromide (as a tracer) to stimulate native denitrifying bacterial growth. The objectives are to denitrify existing nitrate in the ground water and to establish a growth of biomass in the saturated sediments adjacent to and down gradient of the injection wells to inhibit future nitrate migration from this boundary between the Duranes gravel layer and the Rio Grande Valley Fill.

1.1 Location and Completion of Proposed Injection Wells

Figure 1 shows the approximate location of the boundary between the Duranes and Rio Grande Valley Fill sediments. Figure 2 provides an enlargement of that boundary area in the vicinity of the former unlined lagoon. Both Figure 1 and Figure 2 are taken from a July, 2007 satellite photomap (Google) and shows the lined temporary lagoon (which is now filled) that was constructed for purposes of conducting pumping tests on the Reclamation Well (RW) and a Duranes Formation test well (PW-1) in May 2007. The line of proposed injection wells and the route of the pipeline to the injection wells from the RW supply well is also shown on Figure 2. This line of injection wells is slightly east of a line between the former MW-13 and MW-19 monitoring wells, and will allow completion of wells with screened injection intervals below the Rio Grande Valley Fill static ground water elevation and above the buried portion of the Duranes Formation scarp as shown on Figure 3.

The injection wells will be completed using a truck mounted CME-75 with a 10-inch diameter hollow stem auger (HSA). Limited split spoon or continuous core soil sampling below the water table will be conducted to determine the boundary contact with the Lower Duranes Formation. The wells will be completed with 4-inch diameter PVC and No. 20 slot well screen below the water table to the contact with the Lower Duranes (apprx. 20 to 30 ft.). The wells will be sand packed with No 12 - 16 washed silica sand, a bentonite plug above the sand pack, and neat cement grout to the surface. Each well will be developed by bailing and/or pumping until returns are sediment free.

1.2 Nutrient Injection System

VG Farms has elected to use sugar as the carbon nutrient source because of its ease of mixing, storage, and ready commercial availability. Calculations for the stoichiometric concentrations of sugar required to treat 50 mg/l nitrate in ground water are provided in Appendix A, as well as concentrations of dry TSP and sodium bromide to be added to achieve 20/mg/l phosphate and XXX mg/l bromide. The calculations supporting the theoretical radius of nutrient injection solution from the injection wells are provided in Appendix B.

VG Farms proposes to mix dry sugar, TSP and sodium bromide periodically in a 1000-gallon trailer mounted mixing tank, which will be located adjacent to the injection wells. The periodic batch mixing will be accomplished by adding fresh make up water from the RW pumping well along with the dry nutrient/amendment ingredients followed by mixing with a recirculation pump mounted on the tank trailer. Flow from the tank to the injection line will be via a venturi eductor fitting and valve. This mixing system design is illustrated schematically in Figure 4 along with details illustrating the surface injection well completion. A valve at each wellhead will control the flow rate to each injection well and assist in balancing the water levels in each well. Prior to starting nutrient injection, fresh water will be pumped from the RW through the mixing valve and injection wells to determine the rate of mixing tank discharge and to balance flow between the injection wells.

2.0 Operation and Monitoring

VG Farms intends to operate the above described nutrient injection system for a nominal six month period, and expects to form an effective biomass barrier to existing and future ground water nitrate migration and to denitrify existing ground water nitrate east of the injection wells. This will then be followed by a two to five year ground water monitoring period to assure that nitrate remains below NMWQCC standards.

Replacement monitoring wells will be completed in late February to early March 2008. The location of the replacement monitoring wells is shown on Figure 5. Changes to the replacement monitoring well configuration since the 9/18/07 Stage II AP submittal include: (1) moving MW-19R to a location east of the proposed injection wells, (2) completing an off site and up gradient monitoring well MW-22 on the west side of NM Hwy. 528, and (3) making minor adjustments in the location of other replacement monitoring wells to accommodate site grading.

Additional detail regarding the operation of the nutrient injection system and future ground water monitoring are provided in the following sections.

2.1 Nutrient Injection Considerations

The pumping test conducted on the RW pumping well in May, 2007 indicates that a sustained pumping rate of 30 gpm is possible, and is the basis for calculating the mixing and nutrient injection rates for the remediation system proposed herein. A totalizing flow meter will be installed between the RW pumping well and the nutrient mixing tank as shown on Figure 4 to monitor total pumping and injection rates.

The vacuum generated by the eductor venturi mixing valve in combination with the control valve located between the mixing tank and eductor will dictate the rate at which the concentrated sucrose solution is mixed with the raw water feed from the RW well. This in turn will dictate the frequency with which the mixing tank will need to be replenished with raw sugar, TSP and sodium bromide. Additionally, periodic pumping and injection of fresh water with no nutrient or amendment additions may be necessary to ensure that the sand and gravel matrix in close radial proximity to the injection wells does not become clogged by biomass formation. Should water level increases in the injection wells suggest that the rate or severity of biomass formation in proximity to the injection wells is occurring, then consideration will be given for adding sodium hypochlorite to the injection stream to eliminate biomass formation near the injection wells. This may be done by either dosing the mixing tank or to individual wells (via the water level probe access port on each injection wellhead) exhibiting higher biofouling.

A record will be maintained of:

- the water level and dissolved oxygen (DO) in the injection wells (daily for one week, twice weekly thereafter);
- the water level and DO in the RW pumping well (daily for one week, twice weekly thereafter);
- flow totalizer reading (same frequency as above)
- water level in the mixing tank (with corresponding gallons injected – same frequency as above);
- quantity of raw sugar, TSP and sodium bromide added;
- dates and times of no nutrient/amendment injection;
- dates, times, and quantity of sodium hypochlorite added; and
- dates, times, and duration of system shutdown for maintenance or repair.

2.2 Ground Water Monitoring

The initial round of ground water sampling of the replacement monitoring wells will be conducted within one to two weeks of their completion, which is anticipated in late February to early March, 2008. All replacement monitoring wells will be surveyed by a licensed NM Surveyor. All wells will be developed by bailing and/or pumping until returns are clear of sediment and fines.

Periodic sampling will be conducted using a low flow variable speed Grundfos sampling pump after static water levels have been measured. A minimum of three well bore volumes will be purged from each well prior to sample collection. All monitor well samples will be analyzed for nitrate (NO_3), total Kjehldahl nitrogen (TKN), chloride (Cl), total dissolved solids (TDS), sodium (Na), potassium (K), magnesium (Mg), calcium (Ca), sulfate (SO_4), and bicarbonate (HCO_3). Monitor wells MW-11R, 14R, 15R, 16R, 18, and 21 will be sampled semi-annually. Monitor wells MW-1A, 6R, 8R, 13R, 19R, 20R, and 22 will be sampled quarterly. In addition to the routine analytes mentioned above, monitor wells MW-1A, 19R, 20R and the pumping well (RW) will be sampled weekly after the nutrient injection system startup, and will be analyzed for dissolved oxygen (DO), total organic carbon (TOC), iron (Fe), manganese (Mn), phosphate (PO_4), and bromide (Br).

2.3 Reporting

During operation of the nutrient injection system, VG Farms will provide monthly reports to NMED summarizing the nutrient injection parameters described in Section 2.1, monitoring results from MW-1A, MW-19R, 20R and RW as described in Section 2.2, and any proposed changes to the nutrient injection system operation. Quarterly reporting of ground water monitoring results will be provided to NMED. A summary of monitoring and reporting is provided in Table1.

3.0 Contingency

A contingency plan for the proposed MNA remediation was included in the 9/18/07 Stage II AP submittal. That contingency plan called for the construction of two pumping wells in the Lower Duranes Fine Grained Sand, the pumping and mixing of ground water from those wells with appropriate denitrification nutrients and amendments, and the reinjection of the resultant mixture into the Duranes Gravel Layer immediately west of its erosional contact with the Rio Grande Valley Fill. VG Farms proposes to keep this contingency plan as a future option should the primary nutrient injection system proposed herein require supplemental augmentation.

Additionally, consideration will be given to short term injection of denitrification nutrient solution to "hot spots" which may become evident after cessation of the primary nutrient injection system.

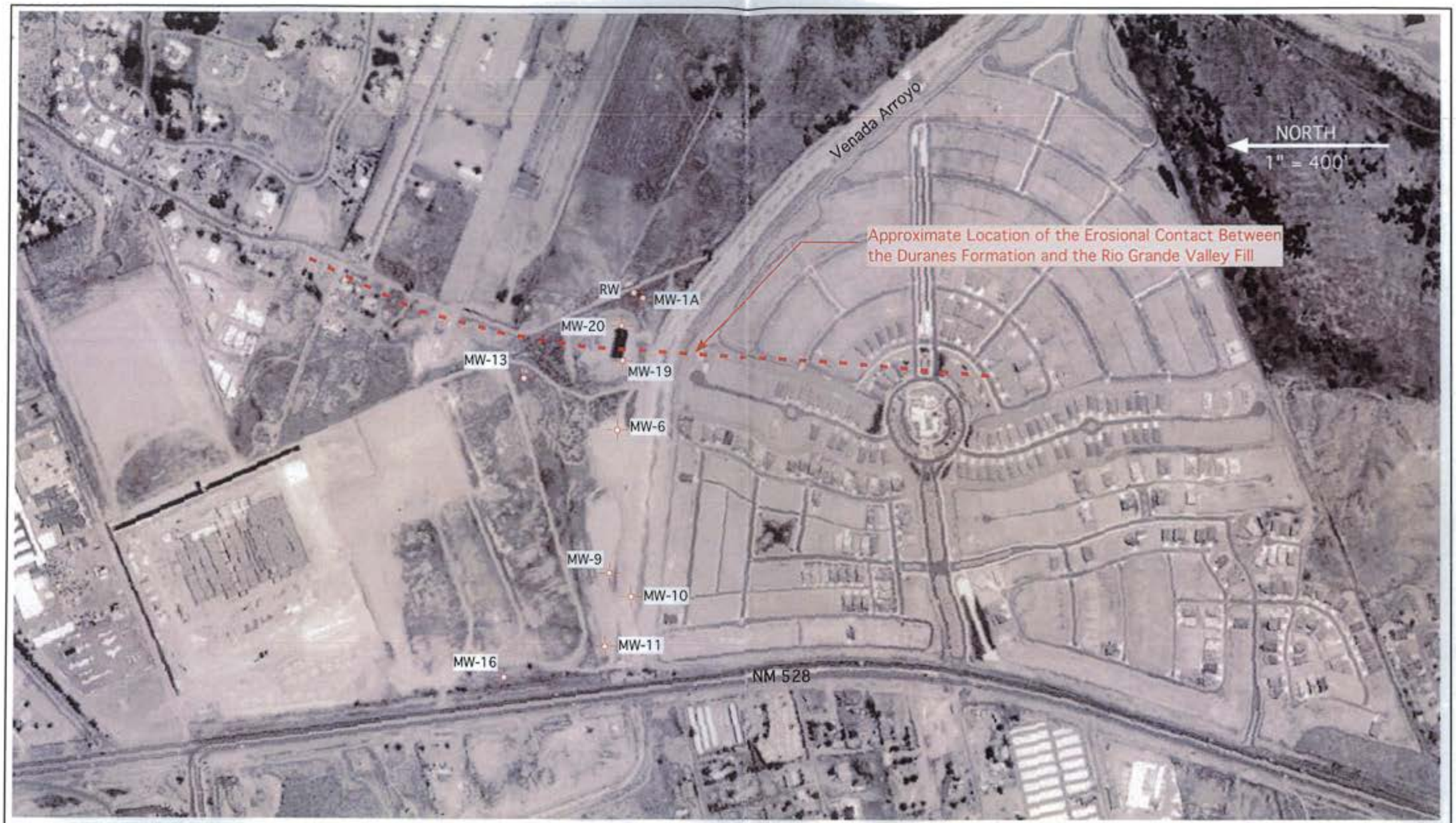
4.0 Conclusion

VG Farms offers this proposed primary and contingent Stage II AP remediation options as the most expedient and technically feasible means of achieving compliance with the NMWQCC regulations for ground water protection. VG Farms intends to proceed with the construction of both the injection and replacement monitoring wells within the next few weeks, and intends to start up the proposed nutrient injection system upon approval of the temporary discharge permit requested in the transmittal letter accompanying this proposal.

TABLE 1
SUMMARY OF MONITORING AND REPORTING FOR VG FARMS BERNALILLO DAIRY
STAGE II ABATEMENT PLAN

ITEM	MEASURE	FREQUENCY						Period
		daily for first week	twice per week	weekly	monthly	quarterly	semi-annually	
injection wells	dissolved oxygen and water level	X	X		X			6 months of remediation
RW	dissolved oxygen and water level	X	X		X			
Flow Totalizer	total flow in gallons	X	X		X			
Mixing Tank	water level	X	X		X			
Nutrient and Amendments	weight added	as added			X			
fresh water injection	flow total	as added			X			
Sodium Hypochlorite	weight added	as added			X			
System Shutdown	duration and purpose of repair or maintenance	as added			X			
MW-1A, 19R, 20R, RW	DO, TOC, Fe, Mn, PO_4, Br, Na, K, Mg, Ca, HCO_3, SO_4, NO_3			X	X			
MW-1A, 6R, 8R, 13R, 19R, 20R, 22	NO_3, TKN, Cl, TDS, Na, K, Mg, Ca, HCO_3, SO_4					X		2 to 5 years of performance monitoring
MW-11R, 14R, 15R, 16R	NO_3, TKN, Cl, TDS, Na, K, Mg, Ca, HCO_3, SO_4						X	

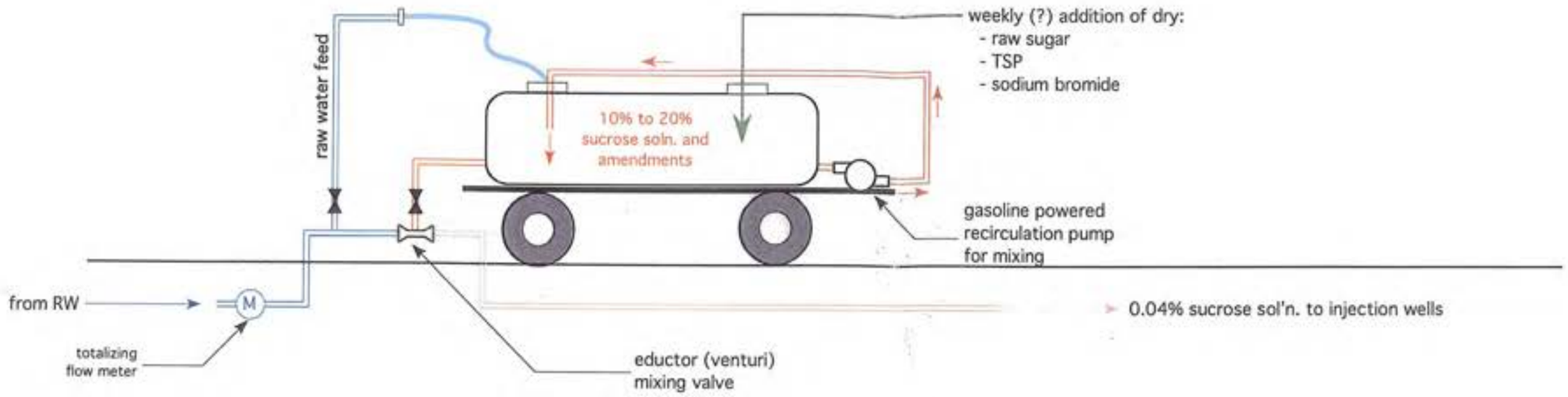
X denotes reporting frequency to NMED

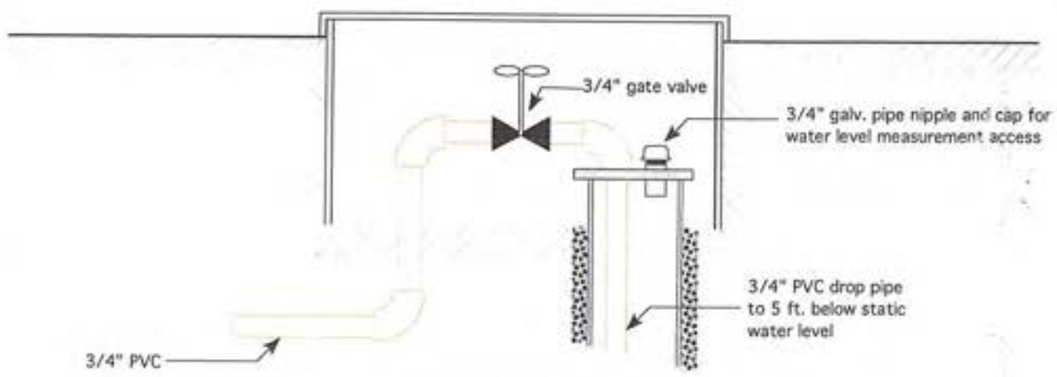


FILE: 99-08-1180 DATE: 1/31/08 DRAWN: SEF DATE OF PHOTO: July 2007	PRICE'S VG FARMS, INC. MODIFIED STAGE II AP	Figure 1 Duranes Fm. and Rio Grande Valley Fill Contact	FEI | Faith Engineering, Inc. 5701 Piedra Dr. NW Albuquerque, New Mexico 87114 (505) 898-6140 • FAX (505) 898-1132 e-mail • faithinc@flash.net

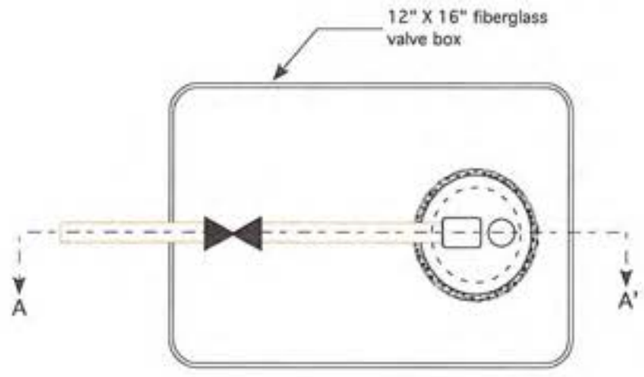
FILE: 99-08-1180 DATE: 01/31/08 DRAWN: SEF DATE OF PHOTO: July 2007	PRICE'S DAIRY Stage II Abatement Plan	Figure 2 Denitrification Nutrient Injection Wells	FEI | Faith Engineering, Inc. 5701 Piedra Dr. NW Albuquerque, New Mexico 87114 (505) 898-6140 • FAX (505) 898-1132 e-mail • faithinc@flash.net

NUTRIENT AMENDMENT MIXING DETAIL





CROSS SECTION AA'
INJECTION WELL/VALVE BOX DETAIL

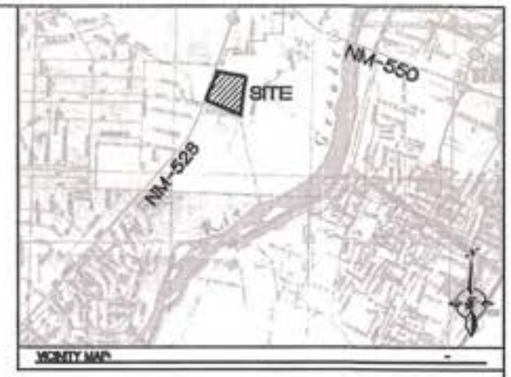


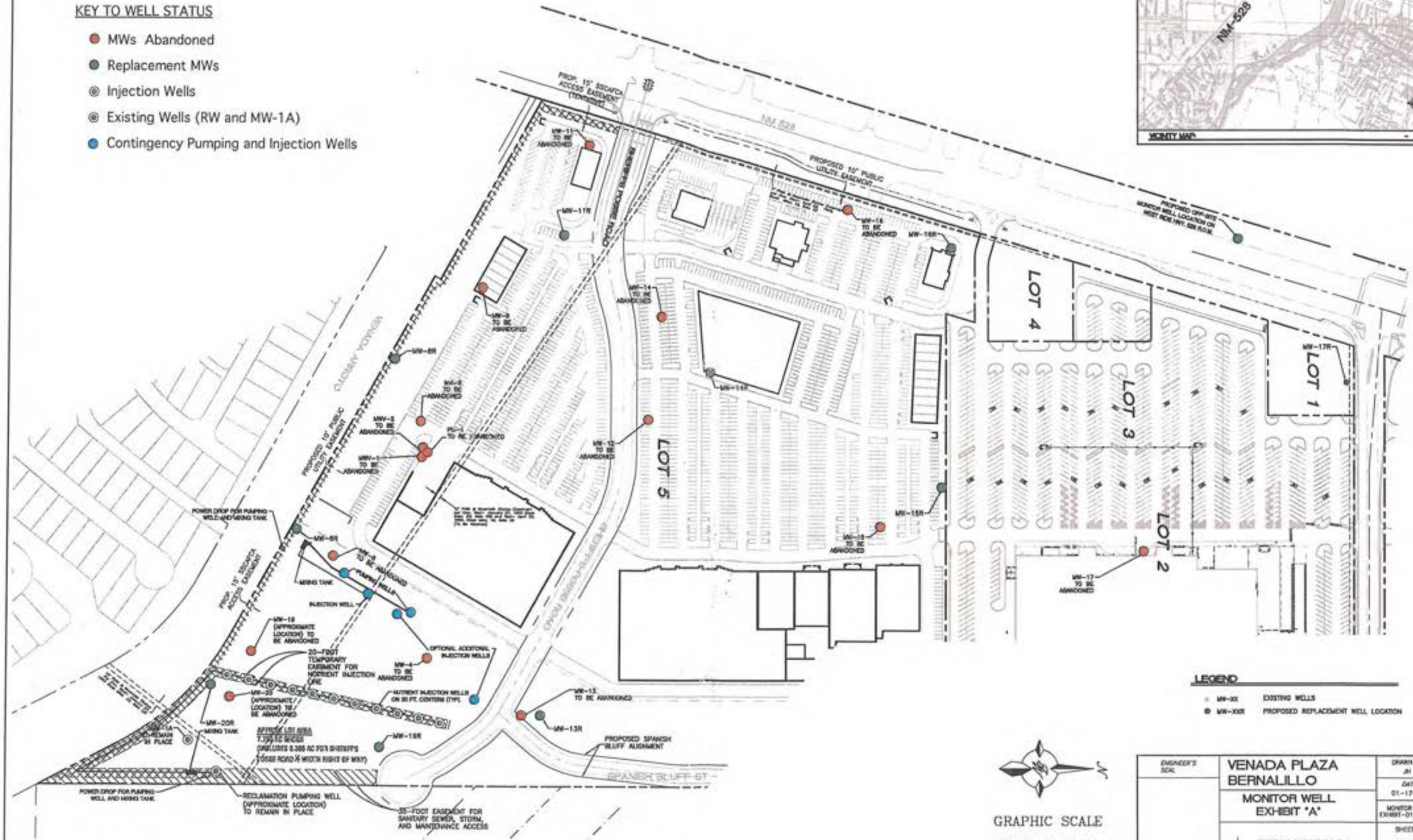
PLAN VIEW
INJECTION WELL/VALVE BOX DETAIL

FILE: 99-08-1180 DATE: 01/31/08 DRAWN: SEF NOT TO SCALE	PRICE'S DAIRY Stage II Abatement Plan	Figure 4 Mixing Tank and Injection Wellhead Detail	FEI | Faith Engineering, Inc. 5701 Piedra Dr. NW Albuquerque, New Mexico 87114 (505) 898-6140 • FAX (505) 898-1132 e-mail • faithinc@flash.net

KEY TO WELL STATUS

- MWs Abandoned
- Replacement MWs
- Injection Wells
- Existing Wells (RW and MW-1A)
- Contingency Pumping and Injection Wells





LEGEND

- MW-XX EXISTING WELLS
- MW-XXR PROPOSED REPLACEMENT WELL LOCATION

GRAPHIC SCALE

100 50 0 50 100

SCALE: 1"=100'

ENGINEER'S SEAL	VENADA PLAZA BERNALILLO MONITOR WELL EXHIBIT "A"	DRAWN BY JH DATE 01-17-08 MONITOR WELL EXHIBIT-01-17-08 SHEET # C2
RONALD R. BOHANNAN P.E. #7868	TIERRA WEST, LLC 5571 MIDWAY PARK PLACE NE ALBUQUERQUE, NM 87109 (505)858-3100	JOB # 26058

FIGURE 5

APPENDIX A

NUTRIENT DOSING CALCULATIONS

PROBLEM: How much sugar (sucrose) is required for stoichiometric reduction of 50 mg/l nitrate to atmospheric nitrogen by denitrifying bacteria?

GIVEN: (1.) molecular formula for sucrose: $C_{12}H_{22}O_{11}$

(2.) molecular weight of sucrose: (12 X 12) + 22 + (11 X 8) = 254 grams/mole

(3.) molecular weight of nitrate (NO_3): (3 X 8) + 7 = 31 grams/mole

(4.) nitrate reduction:

$$NO_3 + {}^{5}/_{48}\, C_{12}H_{22}O_{11} \rightarrow {}^{1}/_{2}\, N_2 + {}^{5}/_{4}\, CO_2 + {}^{31}/_{48}\, H_2O + OH$$

(a) molecular concentration of nitrate:

$$(50 \text{ mg/liter}) \times (1 \text{ mmole}/31 \text{ mg}) = 1.6 \text{ mmoles/liter } NO_3$$

(b) required concentration of sucrose:

$$(1.6 \text{ mmoles nitrate/liter}) \times ({}^{5}/_{48} \text{ mmoles sucrose/mmole nitrate}) \times (254 \text{ mg/mmole sucrose})$$

= 42 mg/liter sucrose

(c) daily sucrose required at pumping rate of 30 gal/min

$$(42 \text{ mg/l})(1 \text{ gr}/1000 \text{ mg})(2.205 \times 10^{-3} \text{ lb/gr})(3.78 \text{ l/gal})(30 \text{ gal/min})(1440 \text{ min/day})$$

= 14 lbs/day sugar

APPENDIX B

INJECTION WELL
RADIUS OF INFLUENCE
CALCULATIONS

CALCULATION OF NUTRIENT INJECTION WELL SPACING AND AVAILABLE TIME FOR BIO-BARRIER FORMATION AT VG FARM'S FORMER BERNALILLO DAIRY

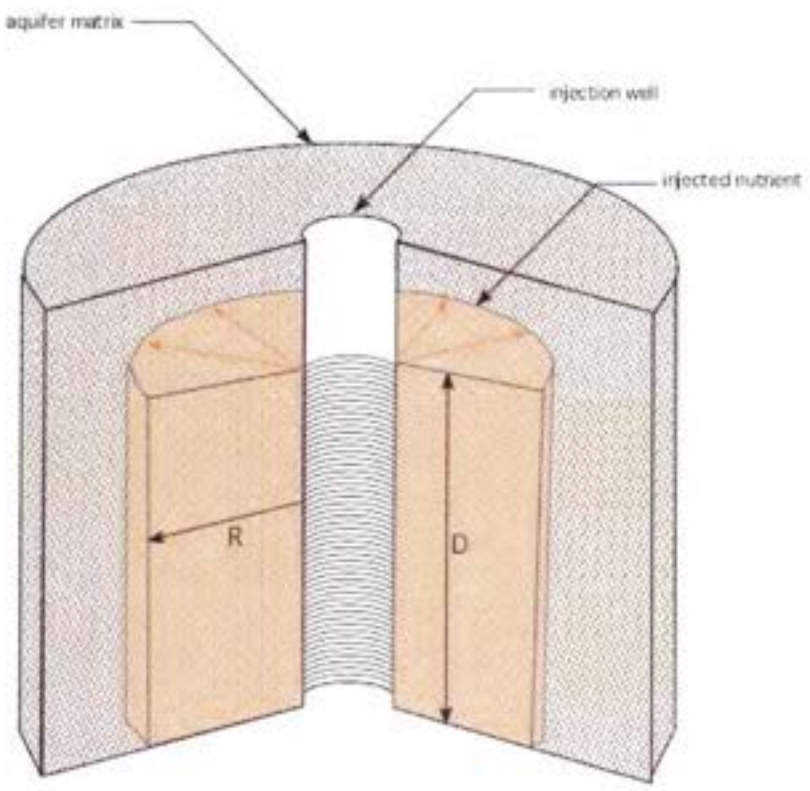
The attached figures provide a theoretical basis for determining the spacing of proposed nutrient injection wells at the former VG Farms Inc. Bernalillo Dairy. These are theoretical in that the calculations assume a uniform radial flow of injected nutrient solution away from each of the evenly spaced injection wells, which in turn assumes a uniform and homogenous sand and gravel matrix in the shallow ground water aquifer below the injection wells.

The major variables in the calculations are the aquifer porosity, the rate of nutrient injection into each well, and the length of well screen in each well. For sand and gravel aquifers, a typical range of porosity is 15% to 25%. Given the historic steady state pumping rate of the reclamation well (RW) of 30 to 35 gallons per minute (gpm) and the numbers of possible injection wells (10 to 15), an average flow to each injection well is 2 to 3 gpm. The well screen length for the line of injection wells between MW-19 and MW-13 will need to extend from the surface of the shallow ground water table in the Rio Grande fill downward to the contact with the Duranes formation, which is believed to be in the range of 20 to 30 feet.

The first figure provides the basis for calculation of the radius of injected fluid over time under the above described theoretical conditions, and the figures that follow provide radius versus time for various injection rates, well screen lengths (or depths), and porosities.

Based on these figures and the proposed 50 ft. spacing of the injection wells, it can be seen that the initial contact of injected nutrient solution between adjacent injection wells (R = 25 ft.) will occur within approximately 30 days, and complete "overlap" of injected fluid (R = 50 ft.) between adjacent wells could take up to 150 days.

Based on these calculations, it is recommended that if the injection wells are allowed to operate for the entire six months that we have proposed, that a well spacing greater than 50 ft. (70 to 80 ft.) may be appropriate, but if a shorter injection period is required to accommodate site development, then the 50 ft. spacing may be appropriate.



Radius of Nutrient Fluid Injection

(πR^2) (D) (Ø) = (Q) (1440 min/day) (1 cu ft/7.48 gal) (days pumping)

$$R = \text{sq. rt.} \quad \frac{(Q)\,(1440\ \text{min/day})\,(1\ \text{cu ft}/7.48\ \text{gal})\,(\text{days pumping})}{(D)\,(Ø)\,(\pi)}$$

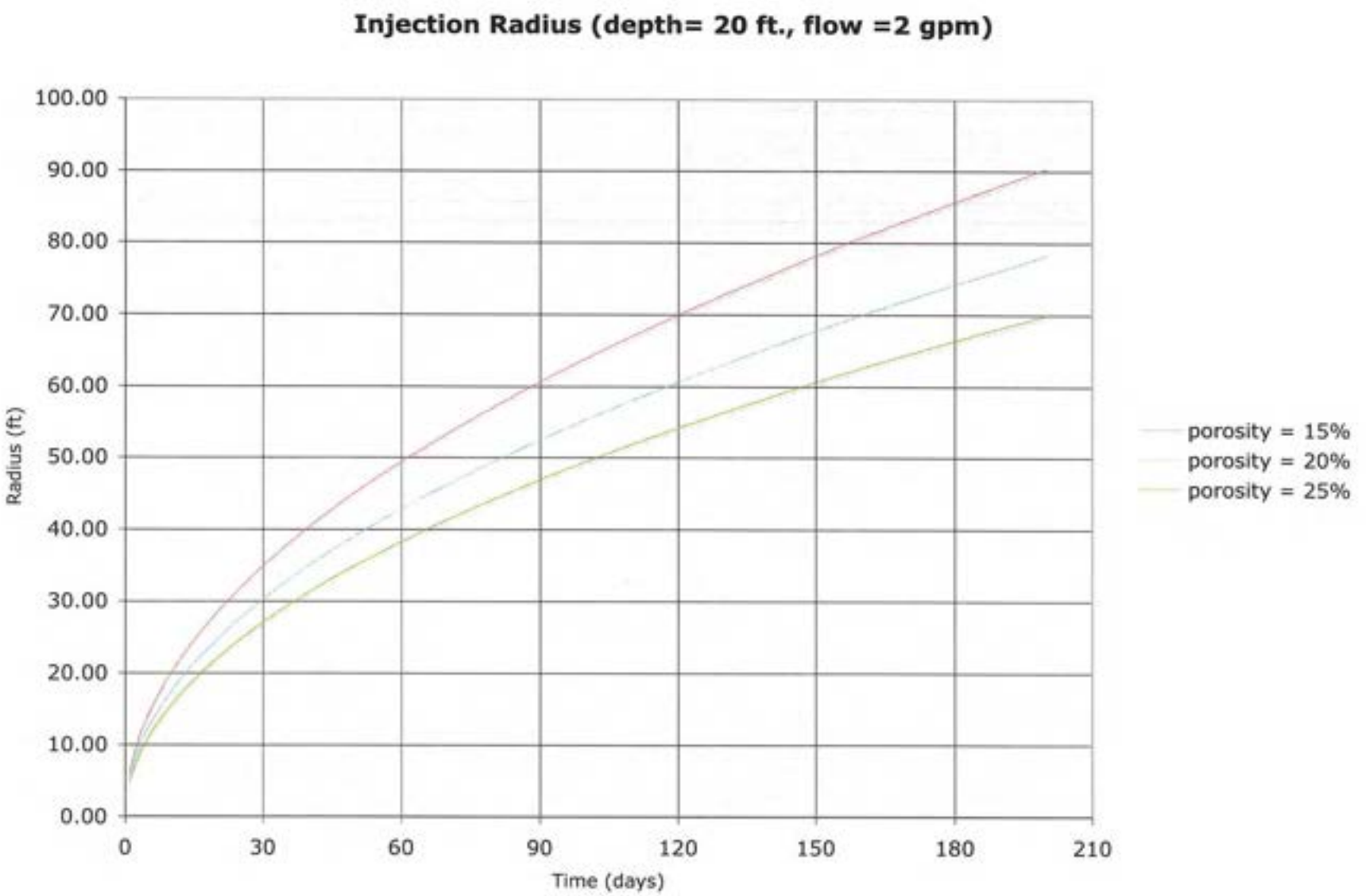
Where:

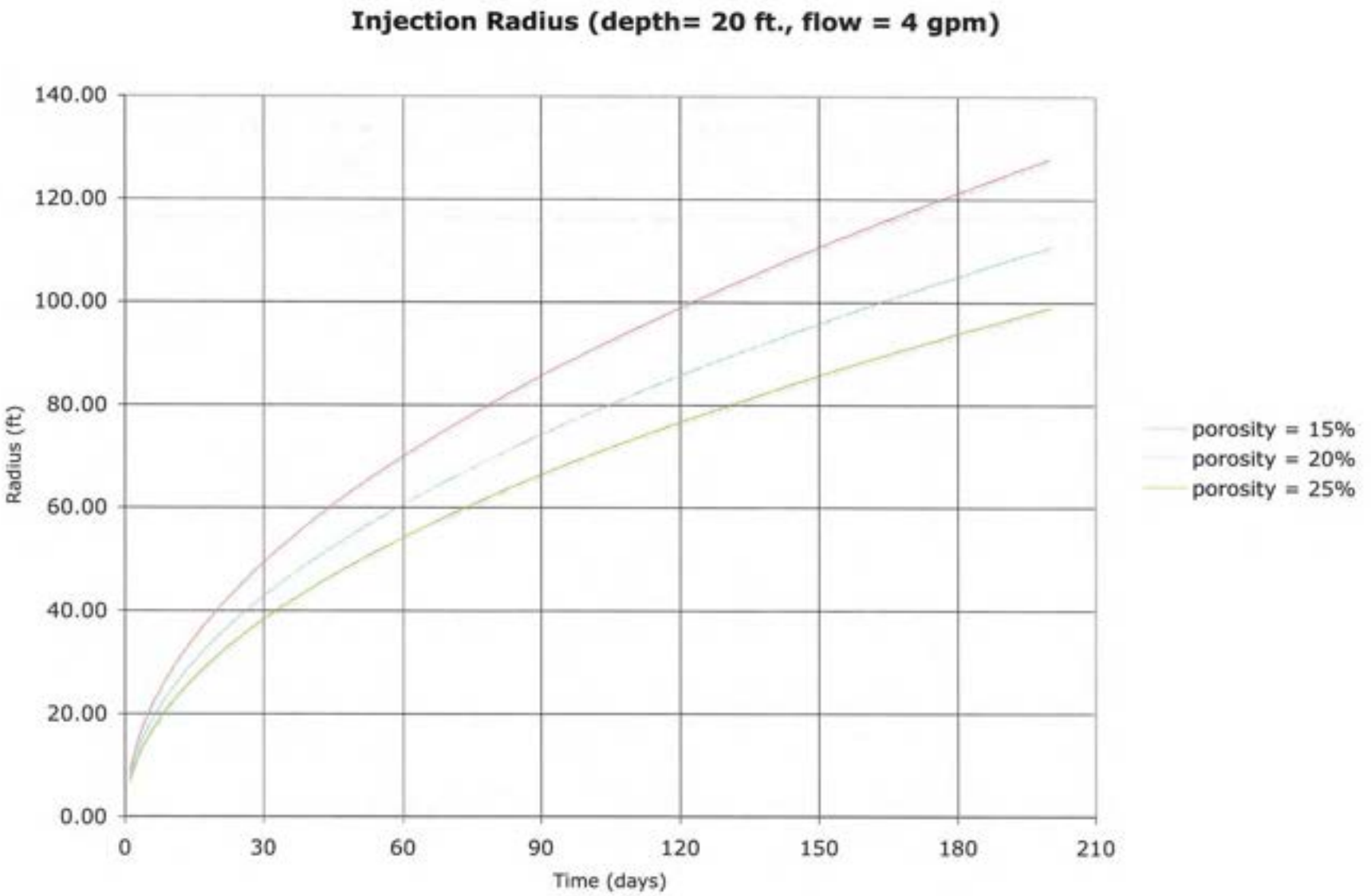
R = radius of injected fluid from injection well (ft.)

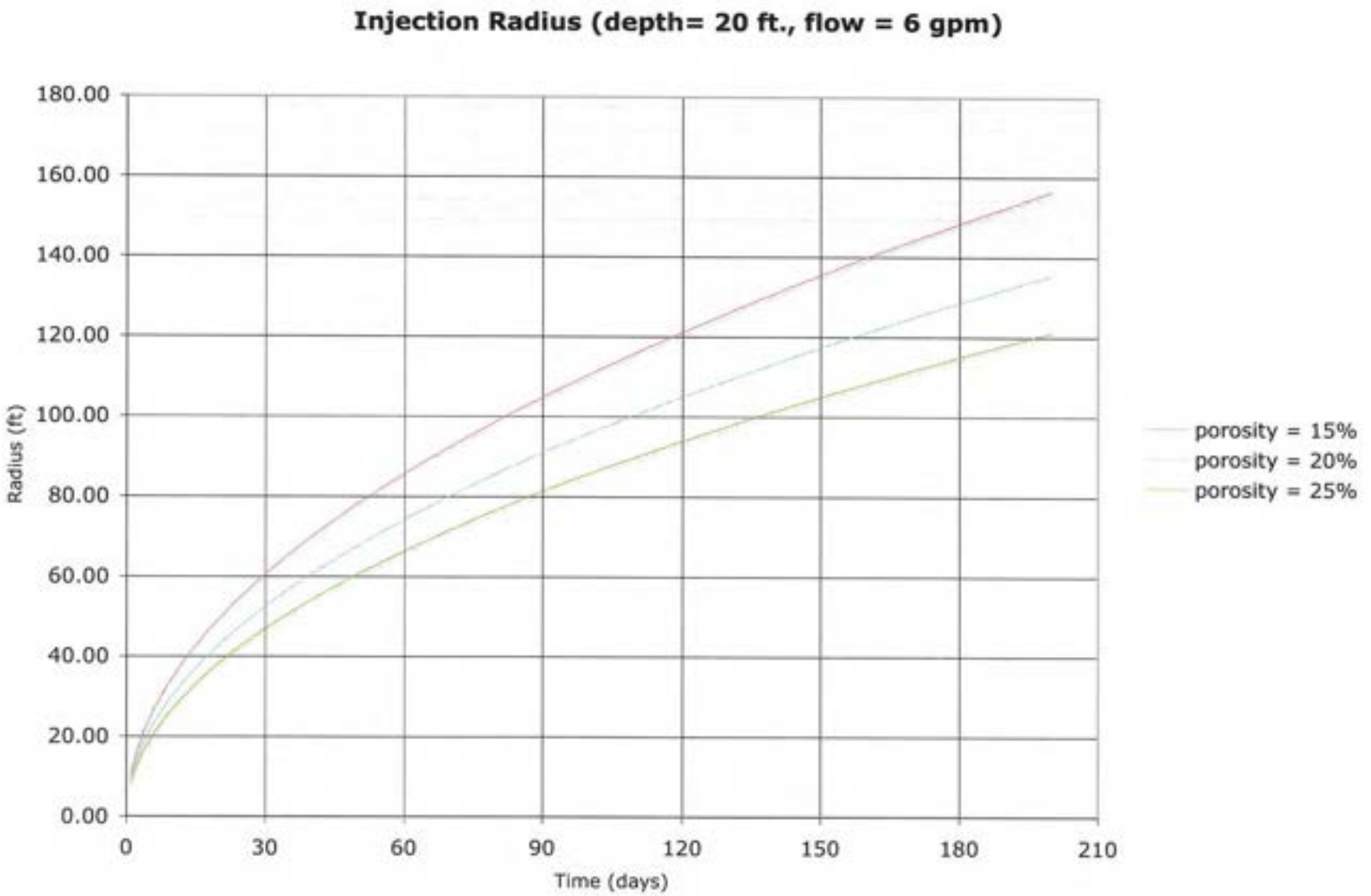
D = well screen length (ft.)

Q = injection rate (gpm).

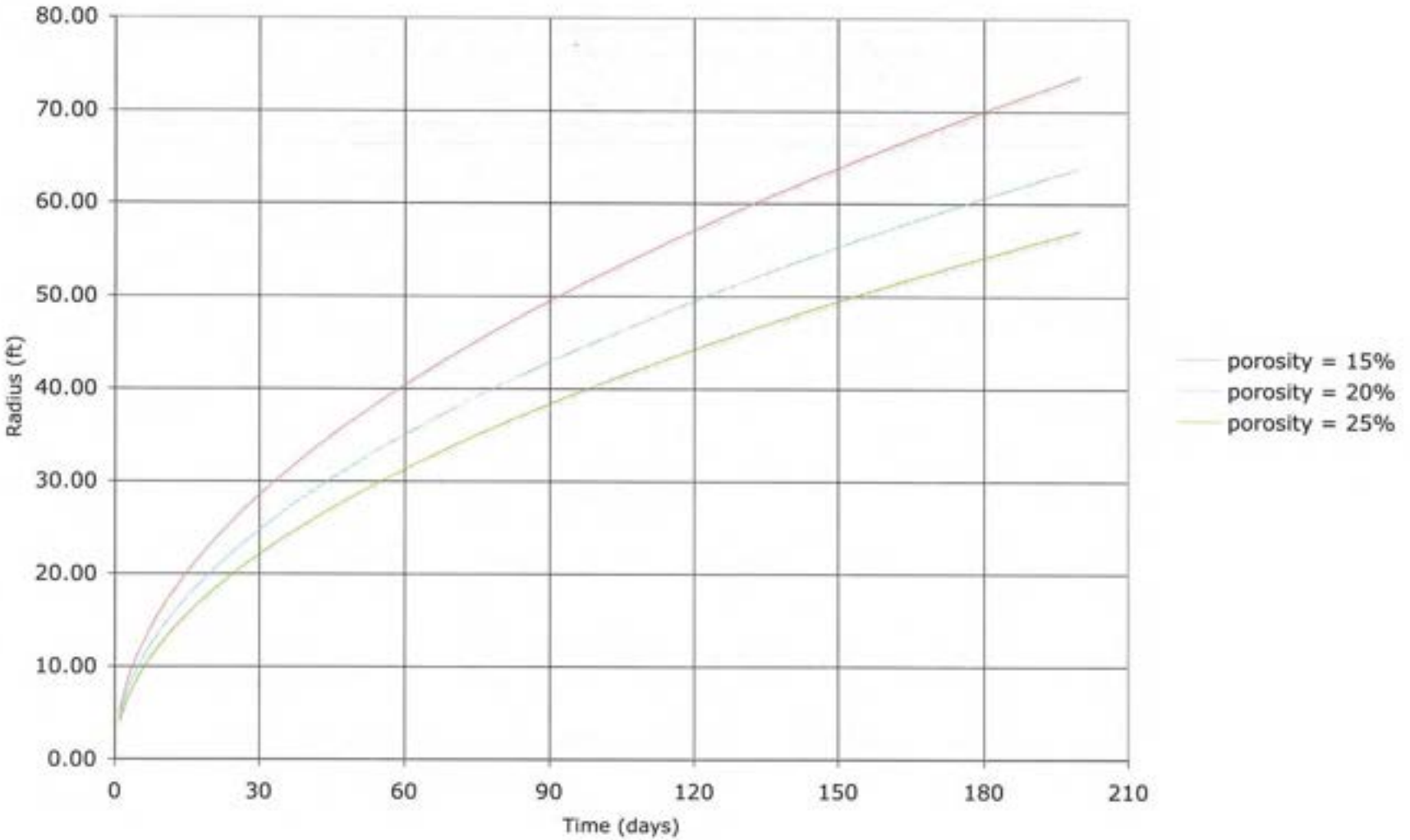
Ø = aquifer porosity (dimensionless: aquifer intersticial void percent)


Injection Radius (depth= 20 ft., flow =2 gpm)
100.00
90.00
80.00
70.00
60.00
50.00
40.00
30.00
20.00
10.00
0.00
Radius (ft)
0
30
60
90
120
150
180
210
Time (days)
porosity = 15%
porosity = 20%
porosity = 25%


Injection Radius (depth= 20 ft., flow = 4 gpm)
140.00
120.00
100.00
80.00
60.00
40.00
20.00
0.00
Radius (ft)
0
30
60
90
120
150
180
210
Time (days)
porosity = 15%
porosity = 20%
porosity = 25%


Injection Radius (depth= 20 ft., flow = 6 gpm)
180.00
160.00
140.00
120.00
100.00
80.00
60.00
40.00
20.00
0.00
Radius (ft)
0
30
60
90
120
150
180
210
Time (days)
porosity = 15%
porosity = 20%
porosity = 25%

Injection Radius (depth= 30 ft., flow = 2 gpm)



APPENDIX G

DEED RECORDATION

STATE OF NEW MEXICO
COUNTY OF SANDOVAL

DEED RECORDATION COVENANT RESTRICTING AND PROHIBITING USE OF GROUNDWATER

THIS DEED RECORDATION is made this 6th day of May, 2016 by D&HGP, a resident of Sandoval County, New Mexico, a NM limited partnership ("Owner(s)") with its principal place of business located at PO Box 850, Bernalillo New Mexico 87004, states that it is the legal fee owner and holds title to the below listed real property in Bernalillo County, the State of New Mexico;

WHEREAS, the Owner(s) has, completed the groundwater abatement at the property pursuant to an Alternative Abatement Standard approved by the New Mexico Water quality Control Commission or has an Abatement Completion Report approved by the New Mexico Environment Department and the Groundwater may contain contaminants in excess numerical of ground water quality standards set forth in 20.6.2 NMAC and related statutes and regulations;

WHEREAS, the Property, located at Lot 5-B, Venada Plaza, as such lot is depicted and described on a replat entitled "Lots 5-A and 5-B, Venada Plaza", which replat was filed in the Office of the County Clerk of Sandoval County, NM, on January 2, 2008 in Volume 3, Folio 2875-A (Book 411 Page 252); and hereby incorporated into this covenant, shall be used only for non-residential purposes and no wells or devices shall be installed on the property to use groundwater and no use of the groundwater shall be allowed;

THEREFORE, the owner of the property prohibits, for itself and all future successors or assigns of the property, installation of wells or any other device to use groundwater and any use of the groundwater is completely prohibited. This restriction and prohibition shall be recorded with the property and is binding on future successors or assigns;

IN WITNESS WHEREOF, the said Owner(s) has caused this instrument to be signed by its authorized representative on the day and year first above written.

D&HGP

By: _____
Dudley Price
General Partner

STATE OF NEW MEXICO
COUNTY OF SANDOVAL

Subscribed and sworn to before me this_____day of_____by _____

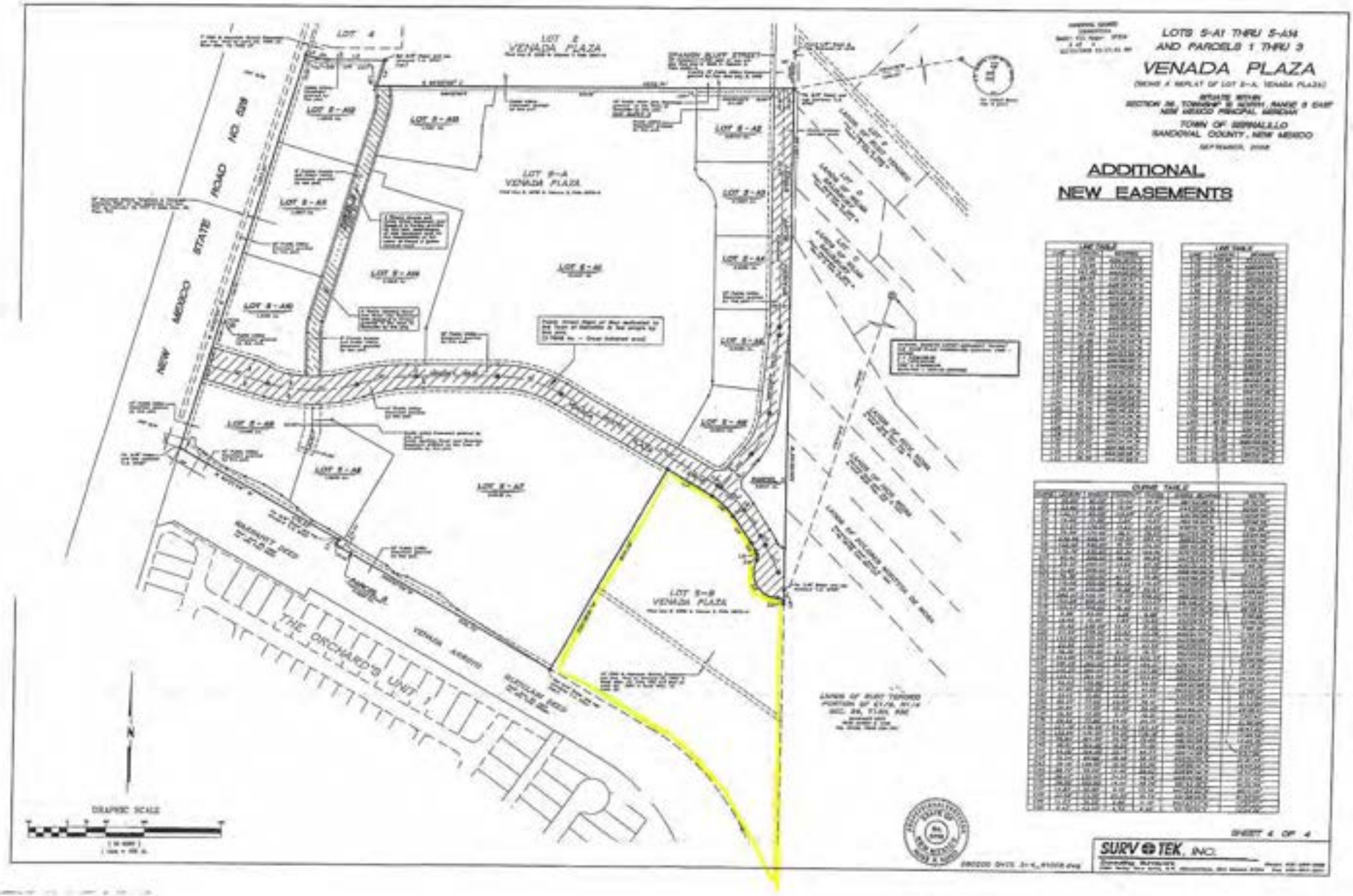
_____
Notary Public

My commission expires:

_____

APPENDIX H

PLAT OF LOT 5-B AND SHAPE FILES
(CD attached with electronic files)

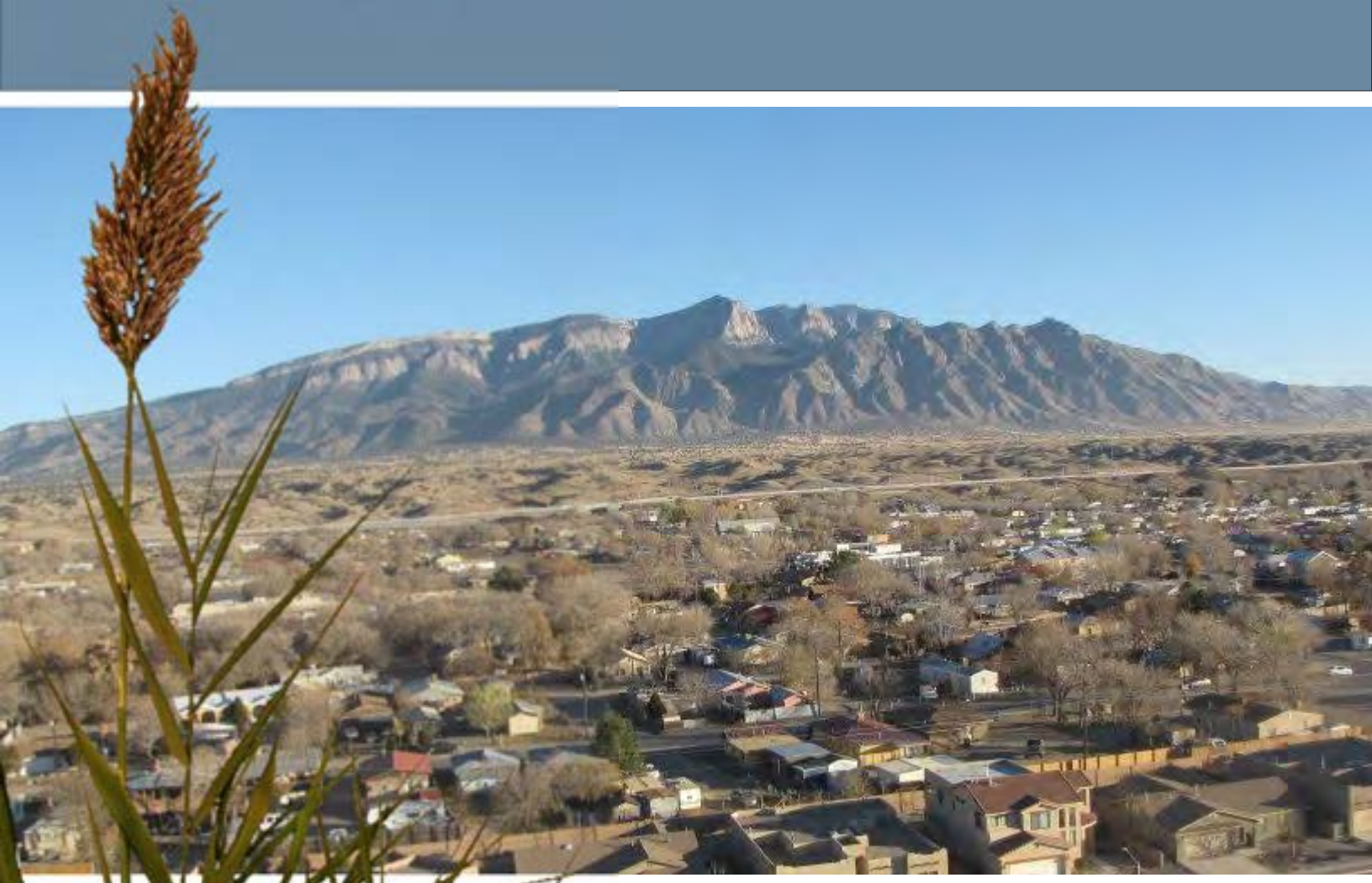

LOTS 5-A1 THRU 5-A14
AND PARCELS 1 THRU 3
VENADA PLAZA
(BEING A REPLAT OF LOT 5-A, VENADA PLAZA)
SITUATE WITHIN
SECTION 36, TOWNSHIP 16 NORTH, RANGE 3 EAST
NEW MEXICO PRINCIPAL MERIDIAN
TOWN OF BERNALILLO
SANDOVAL COUNTY, NEW MEXICO
SEPTEMBER, 2008
ADDITIONAL
NEW EASEMENTS
LOT 4
LOT 5
VENADA PLAZA
LOT 5-A
VENADA PLAZA
LOT 5-B
VENADA PLAZA
NEW MEXICO STATE ROAD NO. 528
THE ORCHARD'S UNIT 1
VENADA AVENUE
GRAPHIC SCALE
N
SHEET 4 OF 4
SURV TEK, INC.

ATTACHMENT 4

TOWN OF BERNALILLO COMPREHENSIVE PLAN

Town of Bernalillo
COMPREHENSIVE PLAN

ADOPTED
6.13.2022



Prepared By:

Consensus Planning, Inc.
302 Eighth Street NW
Albuquerque, NM 87102

TOWN OF BERNALILLO NEW MEXICO

RESOLUTION NO. 06-13-2022

A RESOLUTION ADOPTING THE TOWN OF BERNALILLO COMPREHENSIVE PLAN 2022 IN COMPLIANCE WITH THE TOWN'S EXISTING COMPREHENSIVE PLAN (RESOLUTION NO. 12-13-04) AND THE TOWN'S COMPREHENSIVE ZONING ORDINANCE (ORDINANCE NO. 310).

WHEREAS, the Town engaged consultants Consensus Planning, Inc. to assist with the development of a Comprehensive Plan; and

WHEREAS, the consultant guided a steering committee consisting of Town residents, elected officials and staff though the planning process; and

WHEREAS, the Plan update began in May 2021 and included a community survey, 3 public meetings, question and answer opportunities, and lots of "on the ground" research by the consultant; and

WHEREAS, the result is a very thorough look into the Town's history, demographics, historic development patterns, infrastructure, amenities and land use patterns. Community residents' input was instrumental in developing the recommended goals and strategies which will assist in achieving the best outcomes for the Town; and

WHEREAS, the Plan contains chapters about general demographics, community culture, land use & community character, economic development, transportation, infrastructure, community services & facilities, hazard mitigation, implementation and appendices; and

WHEREAS, this Plan is a dynamic document and guidepost for the Town, it is not "set in stone". It should be revisited every five years and amended, if necessary. Implementation strategies provide a road map to achieve the goals that are indicated in the Plan.

NOW THEREFORE, be it resolved that the Town of Bernalillo Comprehensive Plan 2022, herein attached as "EXHIBIT A", is hereby adopted this 13th day of June 2022.

Jack Torres, Mayor 6/13/2022 Date

Attest:

Ida Fierro, Town Clerk 6/13/2022 Date

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ACKNOWLEDGMENTS

Jack Torres, Mayor

TOWN COUNCIL

Dale Prairie
Sharon Torres-Quintana
Vincent Seferino Montoya
Phillip Valverde

TOWN STAFF

Ida Fierro, Town Clerk/Administrator
Stephanie Shumsky, AICP, CFM, CZO Director, Planning and Zoning
Mike Kloeppel, Director, Economic and Community Development
Terri L. Gray, Finance Director
Troy Martinez, Director, Public Works
Larry Mikkelsen, Supervisor, Wastewater Department
Mark Wooton, Supervisor, Water, Parks, and Streets
Michael Carroll, Fire Chief
Broderick Sharp, Police Chief
Joseph McKenzie, Director, Martha Liebert Public Library
Jason Soto, Director, Recreation Department
Emily Stovel, Director, Bernalillo Community Museum
Phillip Montoya, Director, Coronado Campground

OTHER AGENCIES

Theresa Greeno, Emergency Manager, Sandoval County Fire & Rescue
Desi Aragon, Supervisor, Bernalillo Senior Center
Barbara Baca, Board Member, Middle Rio Grande Conservancy District
Charles Thomas, Executive Engineer, Southern Sandoval County Arroyo Flood Control Authority

STEERING COMMITTEE

Sharon Torres-Quintana
Mike Kloeppel
Stephanie Shumsky
Juanita Duran
Racquel Petelski-Gonzales
Emily Stovel

CONSULTANT

Consensus Planning, Inc.
Jacqueline Fishman, AICP
John Shepard, AICP
Charlene Johnson
Omega Delgado

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CHAPTER 1

EXECUTIVE SUMMARY

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1.1 INTRODUCTION

The Comprehensive Plan is the Town of Bernalillo's foundational policy guide concerning the location, character, and type of growth and development in the community over the next 20 years. It seeks to enhance the qualities that make Bernalillo a special place to live and work, and celebrate the rich history and culture stemming from its settlement along the Rio Grande with the Sandia Mountains as its backdrop.

The Comprehensive Plan is a series of broad statements that reflect the community's goals and aspirations. It anticipates change to occur and provides guidance for future administrative and legislative action. The goals, objectives, and implementation strategies crafted for each of the major Plan elements interpret the community values and provide the necessary guidance for decision making regarding future land use and zoning, growth and development, and investments in capital improvements.

The Comprehensive Plan is intended to guide the creation of future planning documents and land use regulations that facilitate the community vision. It will help shape the visual appearance of the community and preserve Bernalillo's unique sense of place and cultural heritage as the community continues to grow. The Comprehensive Plan is not intended to be a static document - it should be referenced by the Town Council, Planning and Zoning Commission, Town staff, and community members and updated on a 5-year basis in response to changes in community conditions.

The planning process for updating the Comprehensive Plan was initiated by the Town of Bernalillo in May 2021. A planning consultant was engaged to lead the public engagement process and draft the Comprehensive Plan in coordination with a Steering Committee appointed by the Town. The Comprehensive Plan is designed to be action-oriented, easy to read, and functional.

1.2 KEY PLANNING THEMES

There are key planning themes that run through the Comprehensive Plan. The planning themes are based on issues identified during the planning process and have been addressed through the goals, objectives, and strategies. The result is an integrated policy document that expresses the community's shared vision.

- ***Accommodate growth through infill development.*** The Town of Bernalillo is generally landlocked by other jurisdictions, including the City of Rio Rancho, Pueblo of Santa Ana, and Pueblo of Sandia. However, Bernalillo is one of the fastest growing small towns in New Mexico and given its relative lack of annexation opportunities, this means a stronger reliance on infill development. This can be accommodated through a combination of new single-family detached and attached residential, multi-family residential, and mixed-use development, where appropriate. Bernalillo should continue to promote a greater variety of housing types that accommodate current and future demand.
- ***Strengthen Bernalillo's multi-modal transportation network.*** Bernalillo has many of the elements of a good multi-modal system with its excellent access to the regional

Gateway monument sign at the Avenida Bernalillo entry off Interstate 25.

transportation network of Interstate 25, US 550, and NM 528, as well as the Rail Runner Express and transit provided by Rio Metro. The Town has been working with the Mid-Region Council of Governments on a multi-phased trail project and self-investing in sidewalk and streetscape improvements along Camino del Pueblo. Continuing to invest in all aspects of the transportation network will help Bernalillo become a more sustainable and desirable place.

- ***Build on Bernalillo as a regional destination for dining and shopping.*** Bernalillo is at the crossroads of three major highways; US 550 brings travelers to and from northwest New Mexico, Interstate 25 carries travelers from northern, central, and southern New Mexico, and NM 528 brings travelers from Rio Rancho and northwest Albuquerque. Bernalillo benefits from the traveler-related businesses by capturing a greater share of gross receipts taxes than would be possible from the local community.
- ***Grow the manufacturing sector of the economy.*** Bernalillo's Industrial Park at the south end of the community is nearly full. Supporting new and existing businesses by identifying and promoting available land for industrial and manufacturing uses would help diversify the economy and support good paying jobs for the residents.
- ***Continue to invest in Camino del Pueblo.*** Camino del Pueblo is Bernalillo's "Main Street". The history captured in the historic buildings and the pedestrian character are some of the community's most cherished aspects. Reestablishing Bernalillo as a MainStreet community and creating a board of dedicated volunteers who share a common goal of preserving Camino del Pueblo as the community's historic retail center will provide the structure and support this area needs.

Vicinity Map.

- ***Build upon the multi-cultural opportunities.*** Bernalillo has strong cultural traditions that have been celebrated by community members for centuries. Community events, such as the Fiestas de San Lorenzo and the Bernalillo Indian Arts Festival, highlight the multi-cultural character of the Bernalillo community, which are the authentic types of experiences that both residents and visitors seek.
- ***Become a more resilient and sustainable community.*** The Town of Bernalillo is interested in making its buildings more energy efficient by installing solar panels and installing electric vehicle charging stations. Promoting alternative energy through incorporating green building techniques and approaches into its own buildings and properties is an excellent way to set an example for businesses and residential property owners to follow suit.

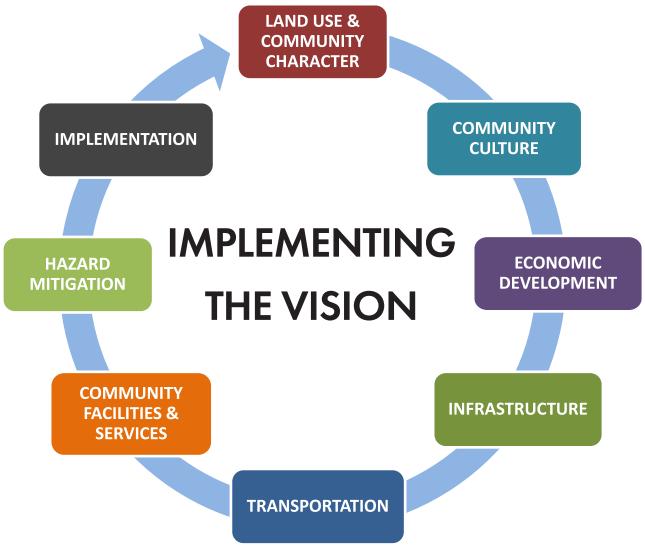
1.3 PLAN ELEMENTS

The Bernalillo Comprehensive Plan contains ten chapters, including the Executive Summary (Chapter 1); Community Profile (Chapter 2); Community Culture (Chapter 3); Land Use and Community Character (Chapter 4); Economic Development (Chapter 5); Transportation (Chapter 6); Infrastructure (Chapter 7); Community Services and Facilities (Chapter 8); Hazard Mitigation (Chapter 9); and Implementation (Chapter 10). The Comprehensive Plan is supplemented by appendices that contain a Glossary of Terms, Community Survey Results, and Funding Sources. Starting with Land Use and Community Character, and with the exception of the Implementation element, each of the major elements contain a profile of existing conditions, discussion of issues and opportunities, and goals, objectives, and implementation strategies that are intended to capture and help realize the Bernalillo community's vision for the future.

A brief summary of each of the major elements of the Comprehensive Plan follows below:

LAND USE & COMMUNITY CHARACTER

The Land Use & Community Character element (Chapter 4) provides a description of historic land use, building patterns, and properties; an inventory, detailed description, and mapping of existing land use by subarea; a description of existing zoning regulations and official zoning map; an overview of other land use plans and ordinances; a description of annexation methods and the history of annexations in Bernalillo; and identification of land use and zoning issues that should be addressed. One of the major challenges faced by the Bernalillo community is addressing how to accommodate its relatively strong growth in population given the community is generally land-locked by the City of Rio Rancho and the Pueblos of Santa Ana and Sandia. The Land Use & Community Character element addresses this issue and others in the narrative and graphically depicts how Bernalillo should grow in the next 20 years in the Future Land Use Scenario.



ECONOMIC DEVELOPMENT

The Economic Development element (Chapter 5) describes the actions that are aimed to retain and grow existing businesses, attract new businesses, and create a diversified and resilient economy; strengthen and promote outdoor recreation and tourism; and build a well-trained workforce. It includes an economic profile captured in narrative and metrics of Bernalillo's employment, industries and occupations, major employers, labor force and unemployment, income and poverty level, tax revenues, retail market, and agriculture; overview of existing organizations and initiatives geared towards economic development; summary of community assets and attractions; existing

and emerging economic opportunities including arts and artisan enterprise, film production, small-scale manufacturing, local foods and value-added agriculture, remote work, and redesignation as a MainStreet community.

TRANSPORTATION

The Transportation element (Chapter 6) promotes and strives for creating a balanced multi-modal system that serves the mobility needs of the Bernalillo community at a local and regional level. The chapter describes the general mobility characteristics of Bernalillo residents; existing street network, including functional classification; existing street conditions, including existing traffic counts, physical conditions, traffic safety, and crash data; existing passenger and freight rail services; Rio Metro transit services and routes; pedestrian and bicycle facilities, including sidewalks, multi-use trails, and ADA accessibility; existing and planned capital improvements, including regional projects listed on the Metropolitan Transportation Plan (MTP), such as the Rail Corridor Pedestrian Safety Improvements, Bernalillo Main Street Streetscape Phase 4 project, Positive Train Control, and US 550 bridge rehabilitation, and the Town's current Infrastructure Capital Improvement Plan; and a summary of Bernalillo's transportation and mobility issues. Sheriff's Posse Road is highlighted based on the concerns expressed by participants in the Community Survey and public meetings.

INFRASTRUCTURE

The Infrastructure element (Chapter 7) describes the basic municipal services provided by the Town of Bernalillo, including the water supply and distribution system, sewer collection and treatment system, and stormwater drainage system and management. It describes the three stormwater management authorities impacting Bernalillo - Middle Rio Grande Conservancy District, Eastern Sandoval County Arroyo Flood Control Authority (ESCAFCA), and the Southern Sandoval Arroyo Flood Control Authority (SSCAFCA). It also describes challenges faced with septic tanks on properties in Bernalillo that currently receive water services; water quality issues due to the naturally occurring arsenic; electric and natural gas services; renewable energy projects; telecommunications; and solid waste services and collection events.

COMMUNITY SERVICES & FACILITIES

The Community Services & Facilities element (Chapter 8) highlights the quality of life services that residents rely on for socialization, learning, and leisure time; public safety; and community health care. With the exception of community health care and public education, these are services and facilities that are provided and managed by the Town of Bernalillo. The Comprehensive Plan assumes the Town of Bernalillo has either a lead or support role in all of these important quality of life amenities that make Bernalillo a wonderful place to live and raise families. This chapter describes community facilities, such as Rotary Park, Loretto Park, Martha Liebert Public Library, and the Bernalillo Museum; public safety services, including Bernalillo Police Department and Bernalillo Fire and Rescue Department; community health metrics and services provided by UNM Sandoval Regional Health Center and Presbyterian Rust Center; and public education provided at the primary and secondary levels by Bernalillo Public Schools and at the post secondary level provided by the University of New Mexico, Central New Mexico Community College, and Highlands University.

HAZARD MITIGATION

The Hazard Mitigation element (Chapter 9) describes the process and actions needed to create resilient communities by reducing the risks and impacts to people and property during natural and human-caused disasters. The chapter provides an overview of hazard mitigation planning, policies, and best practices as extolled by the Federal Emergency Management Agency (FEMA) and the American Planning Association; emergency preparedness provided by the Sandoval County Office of Emergency Management and existing hazard mitigation plans addressing the existing hazards faced by Bernalillo, primarily flooding, wildfires, and severe weather, and also addressing newer hazards such as climate change and pandemics. The goals, objectives, and strategies provide direction on how to reduce these risks and impacts through good planning practices, training, public information, and allocation

of resources by the Town of Bernalillo, regional partners, and community members.

IMPLEMENTATION

The Implementation element (Chapter 10) contains a series of matrices that list each of the strategies that will help achieve the community's vision for the future of Bernalillo. The matrices are sorted by Plan element and identify a time frame and responsible lead entity and potential partners for accomplishing each of the strategies. The implementation time frames are defined as follows:

- 2022-2024 (short);
- 2025-2027 (medium);
- 2028-2035 (long);
- On-going (no end date).

The implementation schedule is intended to assist the Town Council, Planning and Zoning Commission, Town staff, and the community in measuring the successful progress and overall implementation of the Comprehensive Plan.

1.4 COMMUNITY ENGAGEMENT

Meaningful and inclusive community engagement is critical to creating a Comprehensive Plan that reflects the aspirations, knowledge, and culture of the community. A community engagement plan that included a steering committee, community survey, and public meetings was developed by Consensus Planning. Input from the Steering Committee and the community has been incorporated into the Comprehensive Plan.

STEERING COMMITTEE

The Town of Bernalillo appointed a Steering Committee at the start of the planning process. Members of the Steering Committee included Town staff, community members, and elected and appointed officials. Several Steering Committee meetings were held throughout the planning process.

The initial Steering Committee meeting was held online on May 25, 2021. The purpose of the meeting was to introduce the members to Consensus Planning, discuss roles and purpose of the Steering Committee, provide an overview of the Comprehensive Plan, and to discuss the Community Survey. Subsequent meetings were held with the Steering Committee to provide guidance to the consultants at key milestones in the planning process.

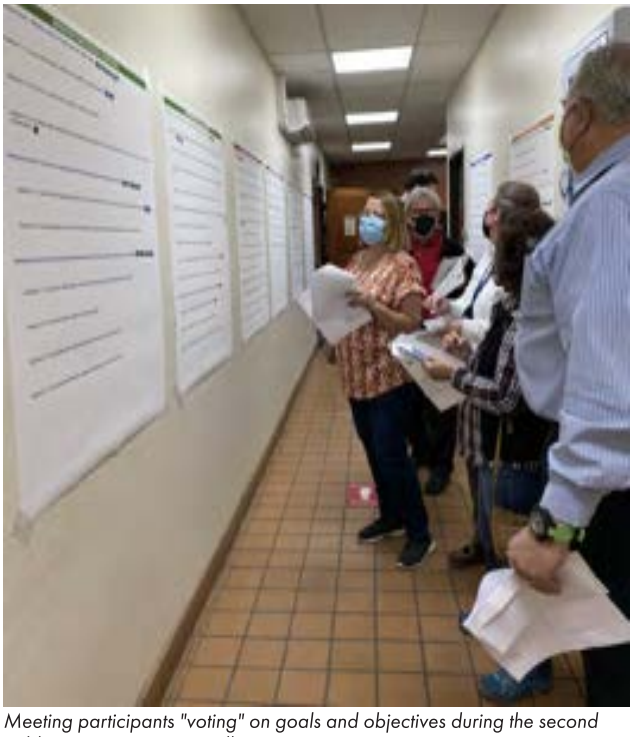
PUBLIC MEETINGS

June 23, 2021

The first public meeting for the Comprehensive Plan took place on at the Bernalillo Town Hall in the Council Chambers. The meeting was designed as a visioning session. Stephanie Shumsky, the Planning and Zoning Director, welcomed the participants and gave an overview of the Comprehensive Plan project. Jackie Fishman, Principal of Consensus Planning, gave a presentation on the planning process and described the primary elements contained in the Comprehensive Plan. Following the presentation, Ms. Fishman led the group in a series of questions designed to elicit participants' opinions of present-day Bernalillo and their vision for the future.

October 12, 2021

Consensus Planning facilitated the second public meeting at the Bernalillo Town Hall on October 12, 2021. Jackie Fishman began the meeting with a review of the planning process and a summary of the community survey. She then gave a summary of the draft goals and objectives before asking participants



Meeting participants "voting" on goals and objectives during the second public meeting at Town Hall.

to participate in an exercise to prioritize the goals and objectives.

The second part of the meeting focused on the two draft alternative land use scenarios developed by Consensus Planning, which were intended to provide a graphic representation of how Bernalillo may grow over the next 20 years. The participants were asked to compare the two alternative scenarios and chose their preferred scenario or elements from each one that best fit their vision, and provide comments. The Future Land Use Scenario presented in Chapter 4, Land Use and Community Character, is a hybrid of the two alternative land use scenarios presented during this meeting.

March 8, 2022

Consensus Planning facilitated the third public meeting at the Bernalillo Town Hall on March 8, 2022. The purpose of the meeting was to present the draft Comprehensive Plan to the Bernalillo community. Jackie Fishman gave the presentation and summarized key planning themes, each chapter of the draft Comprehensive Plan, and the implementation plan. The meeting was live streamed via WebEx. There were approximately 20 participants in the meeting who asked questions regarding the Comprehensive Plan and specifically commented on transportation, drainage, land use, and development issues.

May 3, 2022 - Planning and Zoning Commission Meeting

The draft Comprehensive Plan was presented by Consensus Planning at a regularly scheduled meeting of the Bernalillo Planning and Zoning Commission on May 3, 2022. Jackie Fishman gave a broad overview of the planning themes that run throughout the Comprehensive Plan and highlighted some of the challenges faced by the Town based on its growth rate and having little room to grow outward from the existing municipal boundary. She also explained that the Comprehensive Plan was organized around goals, objectives, and strategies, and that the Future Land Use Scenario is a graphic representation of how Bernalillo should grow over the next 20 years. The Commissioners and Ms. Fishman went through a series of questions and answers, which was followed by a vote to recommend approval to the Town Council.

May 23 and June 13, 2022 - Town Council Meetings

An overview of the draft Comprehensive Plan was presented to the Town Council by Consensus Planning and Stephanie Shumsky on May 23, 2022. The Councilors asked questions and then voted to schedule a second meeting for the adoption of the Comprehensive Plan to provide additional time for review. Consensus Planning and Stephanie Shumsky presented the Comprehensive Plan again on June 13, 2022, and the Town Council voted unanimously for adoption.

COMMUNITY SURVEY

As part of the public engagement process for the Comprehensive Plan, Consensus Planning designed and administered a Community Survey both online and in print from June 15 through July 31, 2021. The surveys were available in English and Spanish. Printed copies were placed at select locations in Bernalillo for community members that were more comfortable with that format. A total of 198 surveys were completed. A summary of the survey results is presented below and the full survey results are provided in Appendix B.

General Questions

Most of the survey respondents, 92%, live in Bernalillo. Most of the participants (40%) have lived in Bernalillo for more than 20 years. When asked what part of Bernalillo they live in, the two most common responses were east of the Rio Grande and south of US 550 (49%) and west of the Rio Grande and south of US 550 (44%). An equal number of respondents (26%) said they live in Bernalillo because they grew up there, they like the location, or they like the small-town atmosphere.

A majority of the respondents, 76%, said they were very likely to live in Bernalillo for the next 2 to 5 years. For those that said they were unlikely to continue living in Bernalillo, an equal number of responses said they would leave for higher quality of life elsewhere and due to lack of housing options (36%).

Quality of Life

When asked to rate the quality of life in Bernalillo, 76% of the respondents said good or excellent.

The three most favorite aspects of Bernalillo cited by the respondents included:

- Small town atmosphere (71%)
- Close to larger cities (57%)
- Cultural diversity (37%)

The top three local amenities respondents visited most often were:

- Eating establishments (84%)
- Bosque Trails and the Rio Grande (38%)
- Bernalillo Town Parks (30%)

The top three local amenities respondents visited least often were:

- Bernalillo State Farm Soccer Complex (94%)
- Bernalillo Senior Center (90%)
- Coronado Sports Fields (80%)

Asked what Town services or facilities should be improved or expanded, the three most common options chosen were:

- Improved landscaping and street trees (61%)
- Multi-use trails (54%)
- Open space (44%)

Most of the respondents indicated their support for improving the visual appearance of Bernalillo; 86% said they agreed or strongly agreed.

Employment

When asked about employment, 41% said they were employed. Of respondents that are not employed, 85% said they were retired and 7% said they were stay-at-home parents or caregivers.

The three most common types of employment were:

- Healthcare and social services (18%)
- Public administration, government (18%)
- Education (9%)

When asked where their jobs were located, most of the respondents said Albuquerque (31%) and Bernalillo (29%). Respondents who said they would like additional job training chose computer technology (30%) and business administration (11%) most frequently.

Economic Development

Asked what areas of economic development Bernalillo should focus on expanding, the four most common options chosen were:

- Restaurants (61%)
- Outdoor recreation (59%)
- Cultural tourism (44%)
- Healthcare services (44%)

Growth and Development

When asked if Bernalillo has adequate commercial retail/business services, 53% disagreed or strongly disagreed.

When asked what types of commercial services are needed in Bernalillo, the three most common options chosen were:

- Restaurants (66%)
- Arts and entertainment venues (60%)
- Grocery stores (44%)

Asked where they go to shop or utilize commercial services if Bernalillo does not have what they need, the three most common destinations were:

- Albuquerque (84%)
- Rio Rancho (71%)
- Online shopping (56%)

The majority of the respondents (70%) agreed or strongly agreed that Bernalillo should encourage the development of vacant or underutilized parcels and 47% agreed or strongly agreed that Bernalillo should encourage development that allows people to live and work in the same building or on the same site.

Transportation and Infrastructure

Nearly all the participants (99%) indicated that they drive a personal car or truck for transportation; however, 40% walk, 20% use bicycles, and 17% use the New Mexico Rail Runner Express.

Asked how often they use the New Mexico Rail Runner Express, 50% said a few times per year and 46% said never.

Asked what types of transportation and infrastructure improvements the Town should focus on, the three most common choices included:

- Streetscapes and landscaping (58%)
- Street maintenance (55%)
- Expansion of storm drainage systems (54%)

CHAPTER 2

COMMUNITY PROFILE

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2.1 INTRODUCTION

Bernalillo is located at the base of the Sandia Mountains in the middle Rio Grande valley of New Mexico, at the crossroads of Interstate 25 and US Highway 550, and along the historic El Camino Real trade route. The county seat of Sandoval County was established in the 1700s and has become one of the most rapidly growing places in the state in the 2000s. Even with many new residents and expanding commerce, community members value their unique small town sense of place.

2.2 COMMUNITY CONTEXT

Bernalillo was established starting with a series of haciendas clustered along the Rio Grande and El Camino Real de Tierra Adentro, the Royal Road connecting Santa Fe to Mexico. Over the years, Interstate 25 and the Burlington Northern Santa Fe (BNSF) Railway replaced El Camino Real, and US Highway 550 has become a major arterial connecting the Four Corners region to the Albuquerque and Santa Fe metropolitan areas.

Bernalillo remains a river town with the Rio Grande playing an important role in the life of the community. The municipalities of Rio Rancho and Corrales share the west side of the Rio Grande. The Pueblo of Santa Ana and the Pueblo of Sandia are significant neighbors on both sides of the Rio Grande with growing commercial development. Even with sustained growth, Bernalillo has maintained its small town character in an urbanizing and expanding metropolitan area.

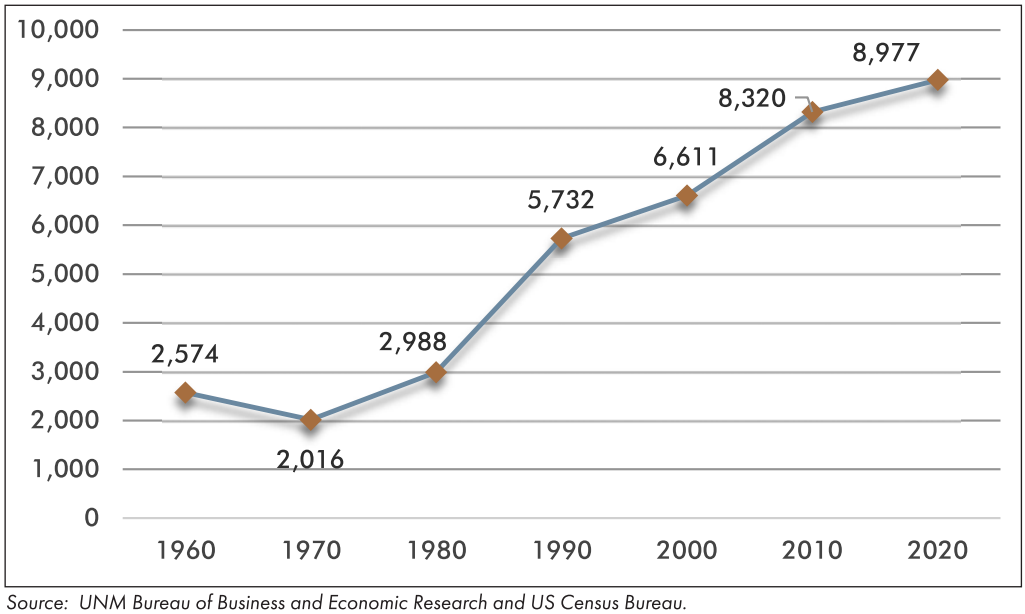
Bernalillo is located in the New Mexico Plateau ecoregion that stretches to the west. The Rio Grande Floodplain has undergone many alternations to its landscape and hydrology. The Bosque has a mosaic of riparian woodlands and shrublands, now modified by a long history of drainage and irrigation. The Albuquerque Basin has thick sedimentary soils and a mix of sand scrub and desert grassland vegetation on both sides of the Rio Grande.

2.3 DEMOGRAPHICS

POPULATION

After the Town of Bernalillo was incorporated in 1948, the Town slightly contracted in the 1960s. It has grown steadily since 1970, with a large gain in population in the 1980s. By 2010, Bernalillo had grown to 8,320 residents. While the ACS had estimated greater population growth between 2010 and 2020, the US Census reported only 8,977 residents in 2020. Sandoval County's population was reported at 148,834 in 2020. Sandoval County grew about 13.1% from 2010 to 2020. The Town of Bernalillo grew approximately 7.9% between 2010 and 2020. The discrepancy between the earlier 2019 estimate of

FIGURE 2.1: HISTORIC POPULATION OF BERNALILLO



Source: UNM Bureau of Business and Economic Research and US Census Bureau.

TABLE 2.1: BERNALILLO POPULATION			
	2010	2019	Change
Total Population	8,320	9,669	16.2%
Male	4,201	4,722	12.4%
Female	4,119	4,947	20.1%
Age			
Under 5 years	543	511	-5.9%
5 to 9 years	555	429	-22.7%
10 to 14 years	548	462	-15.7%
15 to 19 years	581	606	4.3%
20 to 24 years	548	686	25.2%
25 to 34 years	984	1,401	42.4%
35 to 44 years	1,030	1,030	0.0%
45 to 54 years	1,256	1,237	-1.5%
55 to 59 years	621	633	1.9%
60 to 64 years	541	722	33.5%
65 to 74 years	692	1,215	75.6%
75 to 84 years	302	615	103.6%
85 years and over	119	122	2.5%
Median Age	**38.8**	**42.4**	-

Source: US Census, 2010; ACS 5-Year Estimates, 2015-2019.

9,669 and the reported population of 8,977 in 2020 may be due to an undercount in the Redistricting Data report or the earlier estimates may have overstated the actual number of new residents in Bernalillo. The MRMPO projects the population of the Town will grow to approximately 13,000 by 2040.

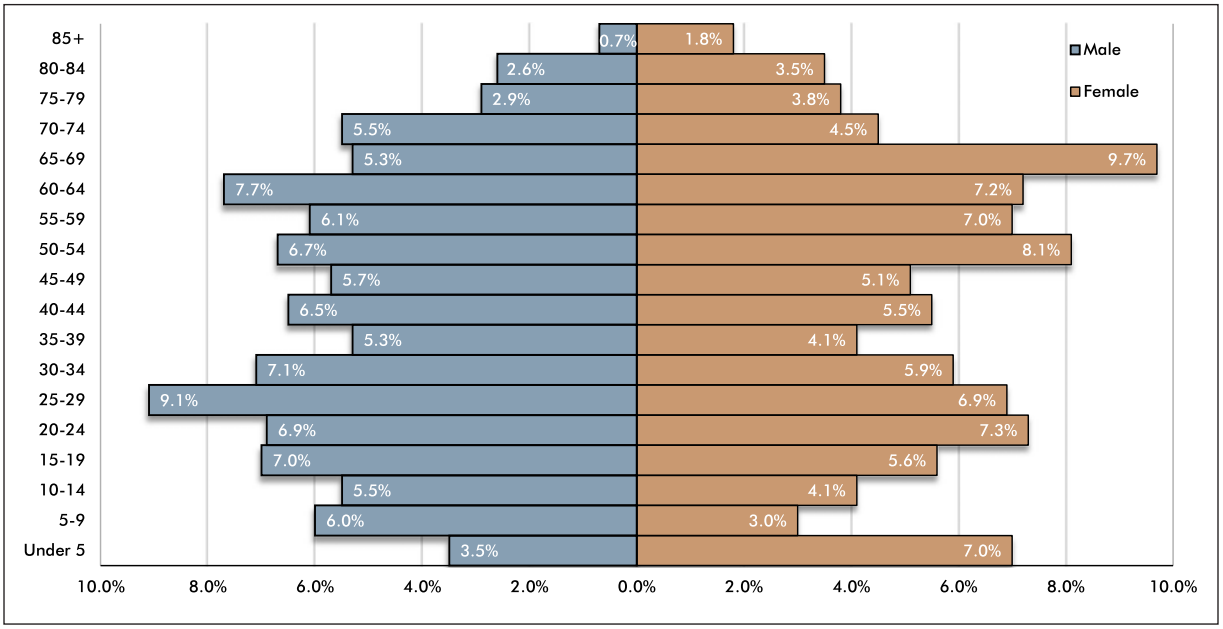
Age, Gender, and Birth Rates

The ACS 2019 reports provide the most recent demographic information available for Bernalillo. The US Census Bureau is expected to release more detailed 2020 demographic data, including age and gender, in the summer of 2022 after delays due to the COVID-19 pandemic.

The median age of Bernalillo's population was 38.8 years in 2010 and 42.4 years in 2019. In comparison, the median age of New Mexico was younger for both years; 36.7 years in 2010 and 37.8 years in 2019. The largest age cohort in Bernalillo in 2019 was 25 to 34 years old *(see Table 2.1)*. The largest male cohort was 25-29 (9.1%) and the largest female cohort was 65-69 (9.7%) *(see Figure 2.2)*.

According to the New Mexico Department of Health, there were 98 births to women who resided in Bernalillo in 2019 *(Source: New Mexico Selected Health Statistics Annual Report)*. This was down from 114 in 2010. Bernalillo's birth rate of 10.1 per 1,000 persons is slightly lower than the average New Mexico birth rate of 10.9 per 1,000 persons.

FIGURE 2.2: BERNALILLO AGE DISTRIBUTION, 2019



Source: ACS, 5-Year Estimates, 2015-2019.

Race and Ethnicity

The US Census Bureau follows standards established by the US Office of Management and Budget in classification of race and ethnicity in surveys, which are based on self-identification. Categories for race are not prescribed, but are chosen by the respondent in correspondence with their chosen identity, and people can choose more than one race. Ethnicity is different than race - a person may consider themselves Hispanic or Latino, and White, Black, or another race. In New Mexico, the majority of Hispanics define their race as "White".

In 2019, 67.6% of the Town of Bernalillo's population identified as White, compared to 77.5% in New Mexico statewide. There were 11% of residents who identify as American Indian, similar to 10.8% in New Mexico overall. Approximately 65% of Bernalillo's population identified as Hispanic or Latino, which is higher than New Mexico as a whole (48.8%).

Of Bernalillo's population age 5 years and over, 56% speak only English; 38% speak Spanish. In New Mexico overall, 66% speak only English while 27% speak Spanish.

TABLE 2.2: BERNALILLO RACE & ETHNICITY

Population	2010	2019
White	67.9%	67.6%
Black or African American	1.9%	1.4%
American Indian	10.1%	11.0%
Asian	0.1%	0.6%
Native Hawaiian/Pacific Islander	0.3%	0.2%
Some other race	22.8%	21.7%
Ethnicity		
Hispanic or Latino (any race)	69.8%	64.7%
Not Hispanic or Latino	20.2%	35.3%

Source: ACS, 5-Year Estimates, 2006-2010 and 2015-2019.

Veterans

Among Bernalillo's residents age 18 years and over in 2019, 6.0% were veterans, a lower rate than in Sandoval County (10.1%) or in New Mexico (9.1%). Bernalillo's veterans served in the Vietnam era (57.3%), the Gulf Wars (22.6%), Korean War (3.4%), and World War II (5.1%). About 60% of veterans were aged 65 and older.

Persons with Disabilities

There were 1,602 Bernalillo residents with a disability in 2019. The share of men (17.2%) and women (17.3%) who were disabled is similar. Among Bernalillo's population 75 years and over, 59.7% had a disability, which is higher than the statewide rate of 54.3% but within the margin of error.

TABLE 2.3: DISABILITY CHARACTERISTICS, 2019

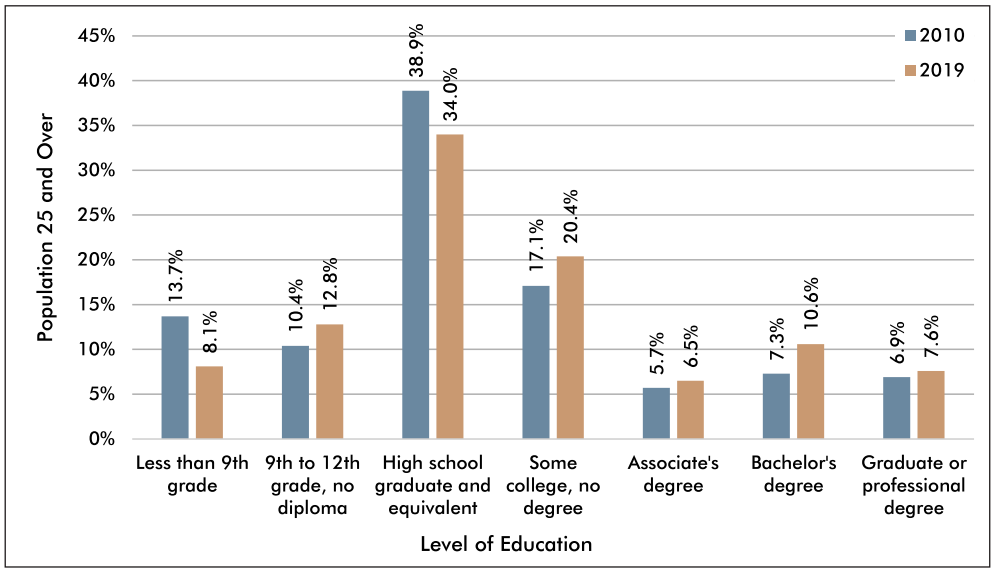
	Total	With a Disability	% of Total
Total Civilian Non-Institutionalized Population	9,284	1,602	17.3%
Gender			
Male	4,433	762	17.2%
Female	4,851	840	17.3%

Source: ACS, 5-Year Estimates, 2015-2019.

Migration

The US Census Bureau estimates county-to-county migration patterns based on the ACS. In the most recent sample for the five years ending in 2018, Sandoval County had the largest net migration from Cibola County (Grants), Doña Ana County (Las Cruces), and Bernalillo County (Albuquerque). Sandoval County experienced the largest net loss to Maricopa County and Pinal County in the Phoenix, Arizona metropolitan area. The ACS estimated that approximately 13% of Bernalillo's population had moved into the community only within the previous year.

FIGURE 2.3: BERNALILLO EDUCATIONAL ATTAINMENT



Source: ACS, 5-Year Estimates, 2006-2010 and 2015-2019.

2.4 EDUCATIONAL ATTAINMENT

Approximately 79% of Bernalillo's residents 25 years and over have graduated from high school, lower than the 86% rate for New Mexico overall (see *Figure 2.3*). The share of population with a Bachelor's degree or higher (18.2%) is also lower than for New Mexico state-wide (27%).

The relative share of Bernalillo residents with higher degrees of education grew from 2010 to 2019. There was an expansion in the percentage of residents with a Graduate or professional degree, Bachelor's degree, Associate's degree, and some college without a degree.

TABLE 2.4: HOUSEHOLDS

	2010	2019	Change*
Total households	2,738	3,624	32.4%
Average household size	2.86	2.60	-10.5%
Family Households	1,815	2,200	21.2%
Average family size	3.44	3.36	-2.3%
Non-family households	923	1,424	54.3%
Households with one or more people under 18 years	1,095	873	-20.3%
Households with one or more people 60 years and over	871	1,801	106.9%
Householder living alone	780	1,152	47.7%
65 years and older	76	150	95.9%

Source: ACS, 5-Year Estimates, 2006-2010 and 2015-2019.

2.5 HOUSING

HOUSEHOLD CHARACTERISTICS

As shown in Table 2.4, the number of households in the Town of Bernalillo grew by 32.4% between 2010 and 2019. The average household size contracted by 10.5%, from 2.86 to 2.60. The number of households with children under 18 years old declined by 20%, from about 1,095 in 2010 to 873 in 2019. The number of households with a member 60 years or over increased by 107%, from 871 to 1,801 in 2019.

Housing Units and Occupancy

There were 4,005 housing units in Bernalillo in 2019, an increase of 34% from 2010 *(see Table 2.5)*. While the vacancy rate increased to 9.5% in 2019, this was much below the New Mexico vacancy rate of 16.8%.

TABLE 2.5: HOUSING UNITS

	2010	2019	Change*
Total housing units	2,993	4,005	33.8%
Occupied housing units	2,738	3,624	32.4%
Owner-Occupied	2,057	2,604	26.6%
Renter-Occupied	681	1,020	49.8%
Vacant housing units	255	381	49.4%

Source: ACS, 5-Year Estimates, 2006-2010 and 2015-2019.

Housing Age and Type

Over 66% of Bernalillo's housing stock has been constructed since 1980, compared to 54% in New Mexico overall. The greatest number of homes, 840, were built from 1980 to 1989 (21%). The share of homes built in the 1970s and 1980s in Bernalillo exceeds the statewide average, as it has since 2000 (*see Figure 2.4 below*).

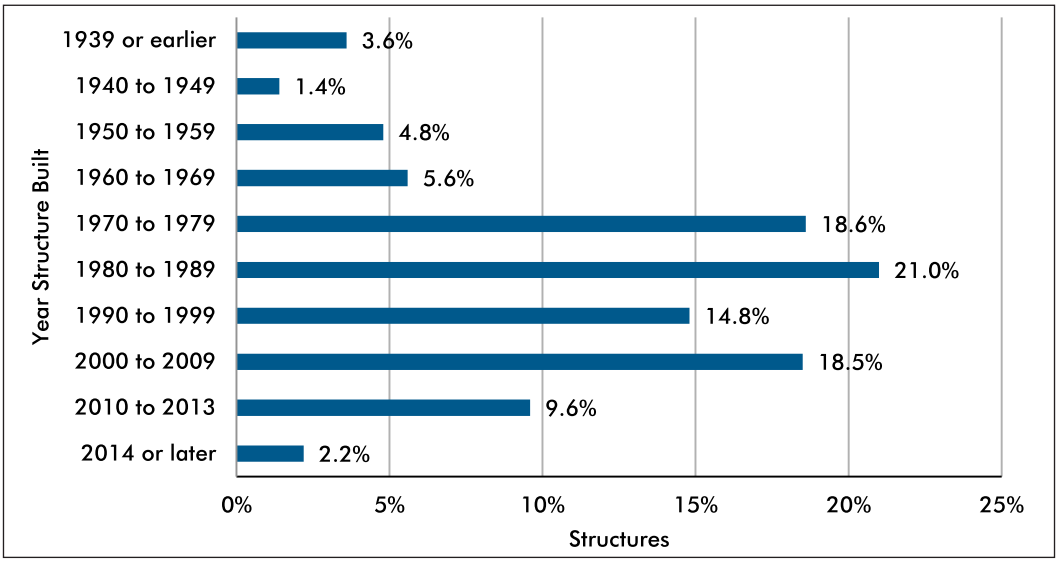
Most housing units in Bernalillo are single-family homes and mobile homes. In 2019, 1-unit, detached homes comprised 59% and mobile homes 30% of all housing units. The share of mobile homes is higher than the New Mexico average where mobile homes were 17.1% of all housing units.

TABLE 2.6: HOUSING UNITS IN STRUCTURE

	2010	2019	Change*
Total housing units	2,993	4,005	33.8%
1-unit, detached	1,639	2,351	43.4%
1-unit, attached	126	134	6.3%
2 units	13	55	323.1%
3 or 4 units	13	62	376.9%
5 to 9 units	45	156	246.7%
10 to 19 units	58	18	-69.0%
20 or more units	8	28	250.0%
Mobile home	1,084	1,197	10.4%
Boat, RV, van, etc.	7	4	-42.9%

Source: ACS, 5-Year Estimates, 2006-2010 and 2015-2019.

FIGURE 2.4: HOUSING AGE



Source: ACS, 5-Year Estimates, 2006-2010 and 2015-2019.

Property Values

In 2019, owner-occupied housing valued between $200,000 to $299,999 comprised 21.5% of the housing stock in Bernalillo. The median value for owner-occupied housing was $161,300, which was lower than the New Mexico average of $171,400.

TABLE 2.7: BERNALILLO PROPERTY VALUES

	2019	% of Total
Owner-Occupied units	2,604	100.0%
Less than $50,000	344	13.2%
$50,000 - $99,999	439	16.9%
$100,000 - $149,999	419	16.1%
$250,000 - $199,999	330	12.7%
$200,000 - $299,999	560	21.5%
$300,000 - $499,999	456	17.5%
$500,000 - $999,999	29	1.1%
$1,000,000 or more	27	1.0%
Median (dollars)	$161,300	-

Source: ACS, 5-Year Estimates, 2015-2019.

Housing Costs

In 2019, the median monthly housing costs for occupied housing units in Bernalillo was $725. The largest number of households, 748 (20.6%), experienced $500 to $799 in monthly housing costs.

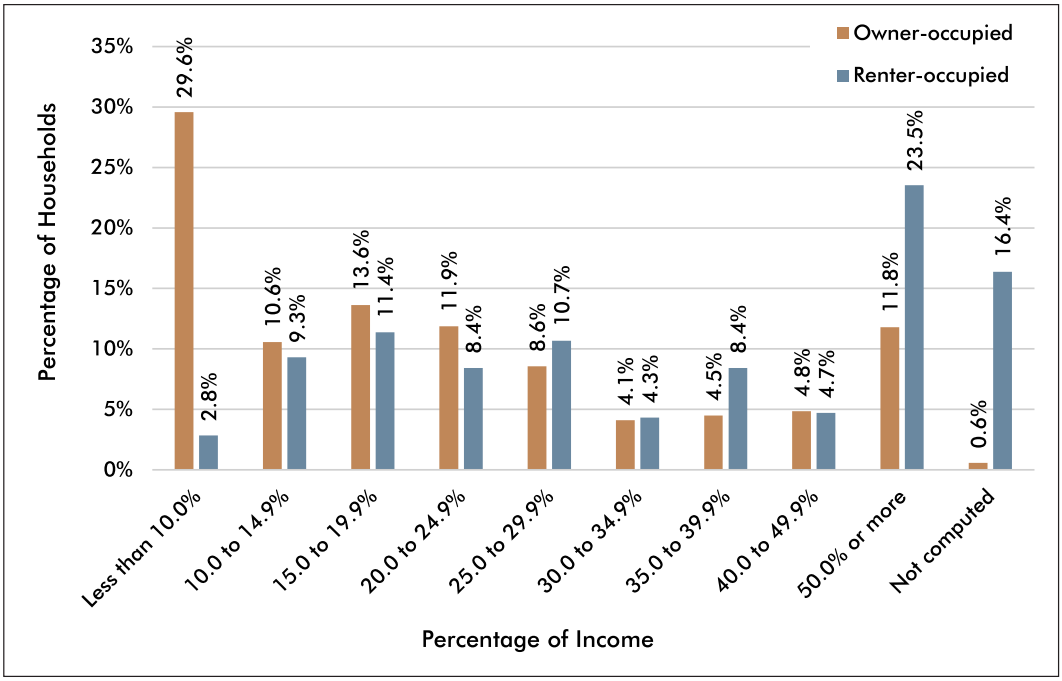
TABLE 2.8: BERNALILLO MONTHLY HOUSING COSTS

	2019	% of Total
Less than $300	609	16.8%
$300 to $499	535	14.8%
$500 to $799	748	20.6%
$800 to $999	368	10.2%
$1,000 to $1,499	673	18.6%
$1,500 to $1,999	318	8.8%
$2,000 to $2,499	158	4.4%
$2,500 to $2,999	20	0.6%
$3,000 or more	40	1.1%
No cash rent	155	4.3%
Median (dollars)	$725	-

Source: ACS, 5-Year Estimates, 2015-2019.

The US Department of Housing and Urban Development (HUD) considers a household "cost-burdened" when 30% of monthly gross income is dedicated to housing costs including utilities. Households with 50% of monthly gross income dedicated to housing and utility costs are considered "severely cost-burdened". There were 41% of Bernalillo renter-occupied households considered cost-burdened in 2019. There were 25% of owner-occupied households considered cost-burdened in the same year (see *Figure 2.5*).

FIGURE 2.5: BERNALILLO HOUSING COSTS AS PERCENTAGE OF HOUSEHOLD INCOME, 2019



Source: ACS, 5-Year Estimates, 2015-2019.

Town of Bernalillo Housing Plan

The Town of Bernalillo Housing Plan (Sites Southwest, 2013) serves as the Housing element in the Comprehensive Plan. The Housing Plan identified affordable housing needs and barriers to residential development, and identified goals and implementation steps aimed at increasing affordable housing in Bernalillo. The Housing Plan is organized into six sections; a community profile, housing profile and assessment, land use and policy review, and quantifiable goals, objectives, and action steps.

The Community Profile documented the demographic and economic characteristics in Bernalillo in 2013, including age, race, employment, and the estimated percentage of households by Average Median Income (AMI). The Community Profile revealed that Bernalillo had a higher Hispanic population and much lower income level than surrounding Sandoval County. It also showed that Bernalillo had a small population of unhoused or people with special needs. This Comprehensive Plan provides an update on demographics and economic characteristics *(see Section 2.3 for demographic characteristics and Section 5.2 for economic characteristics)*.

The Housing Profile and Analysis section included a profile of neighborhood and housing conditions and a housing needs assessment. The housing needs assessment found that Bernalillo had a tremendous gap in affordable housing, as well as a lack of market-rate entry-level housing. Needed types of housing and housing programs included the following:

- Market rate rental housing, including duplexes, 4-plexes, townhouses in larger multi-family complexes, or accessory dwelling units.
- Subsidized senior housing for seniors on a fixed income and resources to help senior homeowners with routine maintenance.
- Subsidized rental housing for individuals and families facing poverty, including developments with a mix of market-rate and subsidized rental units.
- Rehabilitation and repair programs especially in the Town's core areas and amongst seniors and low-income families, including homes on permanent foundations and mobile homes.
- Emergency homeless shelter to provide temporary overnight shelter.
- Transitional housing and residential treatment programs developed in partnership with Sandoval County as a regional program.
- Long term supportive housing as a continuum of care to prevent homelessness.

The Land Use and Policy Review identified the policies and physical characteristics that present constraints and barriers to housing development. The Plan identified governmental policy constraints on affordable housing and recommended the following actions:

- Expansion of multi-family as a permissive use in more zones and allowing accessory dwelling units, which was subsequently completed in the 2020 Comprehensive Zoning Ordinance update.
- Include affordable housing in the Subdivision Ordinance. The Subdivision Ordinance has not been updated yet.
- Uphold the policies in the Transit -Oriented Development Plan to incorporate affordable housing into mixed-income and mixed-use neighborhoods.
- Address the lack of adequate infrastructure on the north side of Bernalillo.

Issues that affect affordable housing developments that are not a result of Town policy or ordinance were also reviewed and categorized as non-governmental issues including:

- Being landlocked due to surrounding jurisdictional boundaries.
- Traditional neighborhood values of keeping land in families, thereby reducing the amount of land available for development.
- Perceived lack of market demand for multi-family within Bernalillo due to competition with new developments in Rio Rancho.
- Negative public perception of affordable housing developments.

The Land Use analysis identified the following specific properties for potential future housing development including:

- The Calle Los Mayores neighborhood (in 2015, the Village at the Bosque was developed, a 98-unit affordable housing project).
- The NMDOT site near the Downtown Rail Runner stop.
- Transit-Oriented Development (TOD) housing in proximity to the Downtown Rail Runner Station area.
- TOD housing in the US 550 Rail Runner Station area.
- Potential sites west of the Rio Grande.

The Housing Plan also identified a number of sites within existing neighborhoods for infill development and lots within the older Rio Grande neighborhood that could support larger housing developments.

The Goals and Recommendations section provided the quantifiable objectives to facilitate Bernalillo reaching its affordable housing goals. Table 2.9 provides a list of various housing types and housing unit goals based on Bernalillo's existing capacity at that time.

TABLE 2.9: BERNALILLO AFFORDABLE HOUSING PLAN - SUMMARY OF OBJECTIVES

Type of Housing	Total Need	Goal Based on Existing Capacity
Entry Level Home Ownership Opportunities	Current: 48 units Future: 560 units	25 to 30 units per year
Market Rate Rental Units*	Current: 67 units Future: 120 units	24 to 30 units per phase, with subsequent phases to begin as prior phase is fully leased. A total of up to 200 units.
Subsidized Senior Housing*	Current: 76 units Future: 150 to 180 units	150 to 180 units, potentially in phases as funding and incentives are available.
Housing Choice Vouchers	Current: 83 vouchers Future: 100 vouchers	Increase vouchers available to cost-burdened Bernalillo households by 10 to 15 per year.
Subsidized Rental Housing, including housing choice vouchers and new construction*	305 total units Future: up to 350 new units	New construction of up to 300 units in 24 to 30 unit phases with the following unit mix: ◂ 35% 1-BR ◂ 35% 2-BR ◂ 20% 3-BR ◂ 5% 4-BR
Housing Rehabilitation (focus on owner)	294 mobile homes 413 single-family units 16 multi-family units	3-6 units per year
Emergency Homeless Shelter	10-15 beds	15 beds
Transitional Housing	10-15 units or beds	15 beds/units
Long Term Supportive Housing	10-15 units	Increase vouchers by five units per year or provide 10 to 15 units in a single complex.

Source: Bernalillo Housing Plan, 2013.
**New multi-family projects will be built in phases, with each phase representing a multi-year goal.*

CHAPTER 3
COMMUNITY CULTURE

Photo source: Our Lady of Sorrows National Register of Historic Places Nomination.

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3.1 INTRODUCTION

The Town of Bernalillo has proudly retained its small-town character and traditional culture. Bernalillo's cultural heritage has been influenced through the Spanish and Mexican traditions of agriculture, food, language, celebration, and religion. The settlement and growth of Bernalillo have been influenced by its neighbors, the Pueblo of Sandia and the Pueblo of Santa Ana. As a melding of cultural influences, Bernalillo's cultural practices epitomize the interculturalism present throughout New Mexico.

3.2 HISTORY of BERNALILLO

The area of Bernalillo is the ancestral homeland of the Tiwa-speaking Pueblo people, the ancestors of the Pueblo of Sandia, and the Keres-speaking people of Tamaya, the modern-day Pueblo of Santa Ana. The ancestors of the Tiwa tribes resided in the northernmost village of Kuaua and settled in the Bernalillo area around AD 1325. Approximately 1,200 people occupied Kuaua, a prosperous irrigated farming community, during the first Spanish encounter with Francisco Vasquez de Coronado in 1540. The ruins of the Kuaua Pueblo are preserved at the Coronado Historic Site just north of Bernalillo, which also commemorates the nearby location of the Coronado expedition encampment *(see Section 5.4 for more information on the Coronado Historic Site).*

In 1598, another Spaniard, Juan de Oñate, established Santa Fe as the capital of "New Spain" and gave land grants to several families in the Bernalillo area, including the Bernal, Perea, Gonzales, and Chavez families. These families built haciendas along the Rio Grande and established ranches and agriculture.

The residents of Bernalillo established good relations with the neighboring Pueblo of Sandia on the south and Pueblo of Santa Ana to the north. In 1680, residents in the area were warned of the impending Pueblo Revolt which prompted them to flee south to El Realito de San Lorenzo, a small town now El Paso, Texas. In 1693, Diego de Vargas led the Reconquista leading the Spanish back into New Mexico. Land grants were given to Felipe Gutierrez and Jose Perea, whose haciendas eventually became the center of the Town of Bernalillo, formally established in 1701. Bernalillo was the county seat of Bernalillo County in 1878 to 1883, and then became the county seat of Sandoval County when the counties were split in 1905.

Throughout its history, the Bernalillo area has been a regional trading center. Before the 16th century, the Rio Grande Pueblo Indian Trail, which extended from El Paso to the upper Rio Grande, traversed the Bernalillo area. This trail was part of a network of ancient Indian trails used to exchange important trade goods between the southwestern tribes and Mexico. When the Spanish took control of New Mexico, the Rio Grande Pueblo Indian Trail became the upper part of the El Camino Real, which stretched from Mexico City to Santa Fe with Bernalillo being a stop along the route. In the 20th century, the north-south vehicle commerce came through Route 66, US Highway 85 (Camino del Pueblo). During the 1940s, US 85 was the only road between Albuquerque and Santa Fe, bringing tourists and visitors to Bernalillo driving the local economy. In 1958, Interstate-25 was built next to Bernalillo, diverting much of the tourist traffic, and US 85 is now NM 313.

Coronado Historic Site, ladder into the kiva.

The establishment of family compounds and small clusters of buildings along the

highway evolved over time. Rather than a large central plaza as a focal point, the community has developed containing traditional Spanish/Mexican haciendas with internal patios and compounds strung along a regional travel route (known as "cordillera" village, meaning string or chain).

3.3 RIO GRANDE and ACEQUIA INFLUENCE

Bernalillo is nestled in the Rio Grande Valley, downstream from the confluence of the Rio Jemez and the Rio Grande. As a riverside community, Bernalillo benefits from the scenic resources of the Rio Grande Valley and the nearby Sandia Mountains to the east. Bernalillo's agricultural origins and physical development is influenced by the Rio Grande that runs from north to south bisecting the Town. Historically, Bernalillo's landscape was lined with a system of small ditches called "desaguas", which conveyed water from the Sandia Mountains to the Rio Grande. Remnants of the desaguas are visible from the ancient cottonwoods in the older neighborhoods.

The Rio Grande Bosque, the riverside forest of cottonwoods and willows lining the Rio Grande, provided fuel wood and shelter for the original settlers of Bernalillo. The timber along the riverbanks provided firewood for the Pueblo and Spanish cooks and bakers. It is thought that the billowing smoke from the hornos (beehive ovens) was the source of the name of Las Cocinitas (Little Kitchens), which is a historical neighborhood in Bernalillo that contains some of the Town's oldest existing structures.

Given its proximity to irrigation ditches and the Rio Grande, Bernalillo has a rich farming and ranching history. The Pueblos in the area had irrigated their fields planted with squash, beans, and maize when Coronado arrived. As the Spanish settled New Mexico, an increasing number of farms and ranches were established on lands enriched by the Rio Grande's periodic flooding. Irrigation water was drawn from the Rio Grande by means of acequias. Long rectangular lots adjacent to the acequias are typical of Spanish settlements. This pattern is evident in Bernalillo to this day despite the subdivision of familial lots. The Bernalillo acequias are still used for irrigation of agricultural land today but are also used for walking trails and flood control.

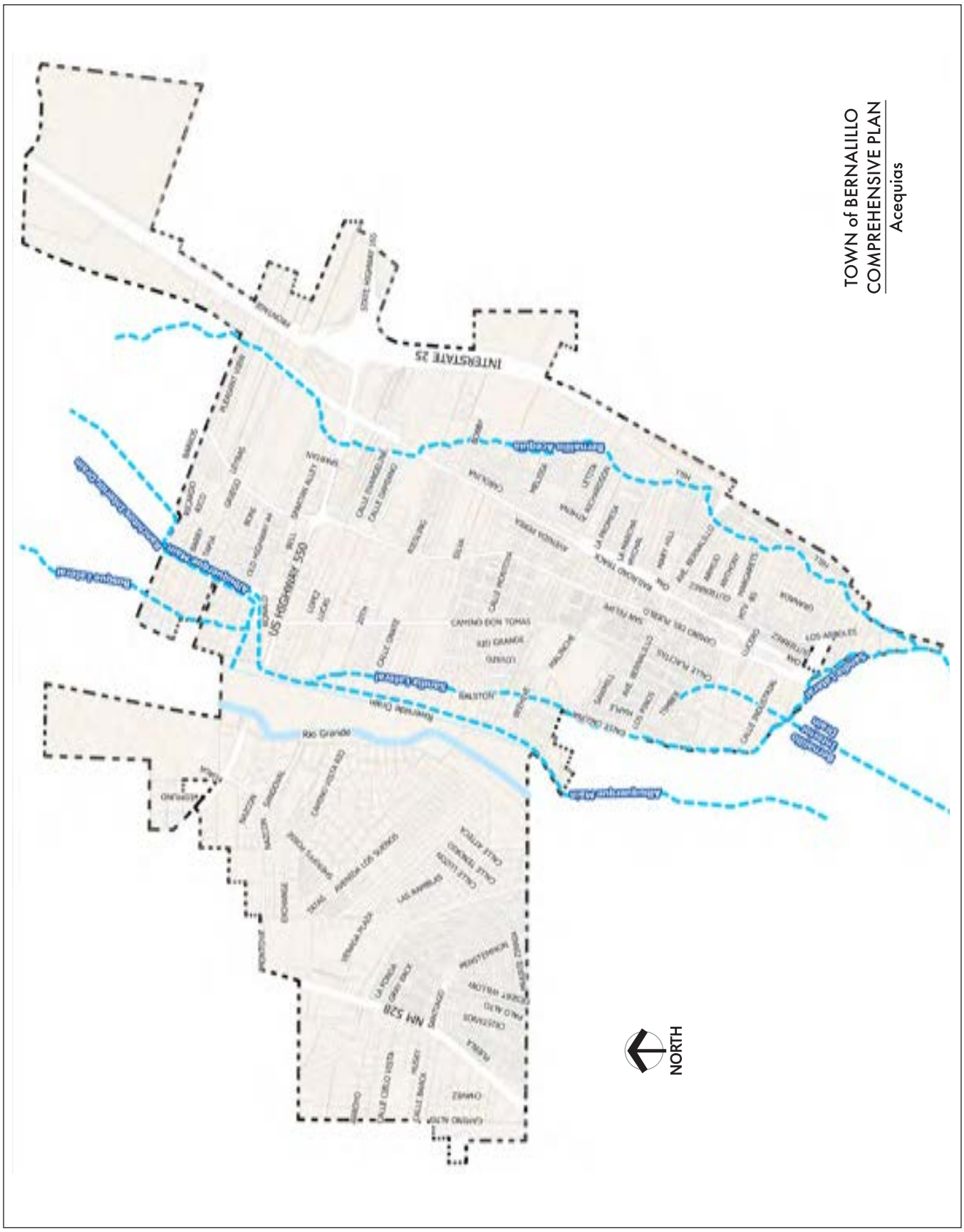
3.4 OUR LADY of SORROWS CATHOLIC CHURCH and SANTUARIO de SAN LORENZO

The Catholic Church has served the community of Bernalillo since the late-1600's when the Spanish explorers first established settlements along the east side of the Rio Grande. The Church of San Francisco, the first church in Bernalillo, was destroyed during the Pueblo Revolt. In 1857, the original Our Lady of Sorrows church building was constructed, and the parish was established under the auspices of Archbishop Jean Baptiste Lamy. A dedicated group of Bernalillo residents cleaned up the original building when it fell into disrepair, and in the 1990's it was re-dedicated to Bernalillo's patron saint, San Lorenzo. The Santuario de San Lorenzo is today maintained by Mayordomos, who are responsible for the upkeep of the church, chapel, and relics.

The Santuario de San Lorenzo was added to the historic register in 1977 *(see Section 4.2 for more information on historic structures)*. The Chapel is an example of French architecture made with native New Mexican materials. The Chapel has 4-foot thick adobe walls, 12-inch vigas, a front balcony, and an earthen floor. The white and blue steeples prominently rise above the Bernalillo landscape and reflect the community's perseverance and resilience.

3.5 FIESTAS de SAN LORENZO

The Fiestas de San Lorenzo is an integral part of Bernalillo's cultural identity. The Fiestas are a celebration of the safe retreat of the Spanish out of Bernalillo during the Pueblo Revolt on August 10, 1680, and the safe passage back to New Mexico in 1693. The Bernalillo exiles learned the dance of the Matachines in Realito de San Lorenzo and brought the tradition back to Bernalillo. Don Diego de Vargas, the Spanish Conquistador that led the Resettlement, made a "promesa" (promise) that anyone returning to Nuevo Mexico would commemorate August 10th to mark the day of the Pueblo Revolt and giving thanks for the survivors' safekeeping during exile. Bernalillo residents


TOWN of BERNALILLO
COMPREHENSIVE PLAN
Acequias
INTERSTATE 25
US HIGHWAY 550
NM 528
Rio Grande
NORTH

incorporated the Matachine dances into their annual commemoration to give thanks to God and San Lorenzo, Bernalillo's adopted patron saint. Bernalillo residents take great pride in the celebration and dance that have been performed continually since 1693.

The three-day Fiestas de San Lorenzo takes place from August 9th to August 11th. It is both sacred and celebrational and includes processions, prayers, velorios or vigils, feasts, and dances. Throughout the three-day celebration, Danzantes perform several dances through the streets of Bernalillo and at the homes of the Mayordomos. The Mayordomos have several duties, including being the caretakers of the Danzantes, preserving the rituals of the fiestas, and protecting the statue of San Lorenzo for one year in their home. Mayordomos rotate annually.

The Fiestas de San Lorenzo culminates on August 10th, the feast day of San Lorenzo and a municipal holiday in Bernalillo. La Danza is performed on this day. It is a drama dance involving several characters of different ages that tells the story of the conversion to Christianity of Monarca (the leader) by his daughter, Malinche. La Danza is dramatic as the characters are converted to Christianity and chased by El Toro (the Bull).

The Bernalillo Matachines continuously engage the younger generation in the practice and reserve many roles for the youth, thus passing down the tradition for generations. While visitors are welcome to the Fiestas de San Lorenzo, the celebration remains an internal ritual passed on from generation to generation of Bernalillo residents since 1693. Los Matchines de Bernalillo were invited by the Smithsonian Center for Folklife and Cultural Heritage to perform at the Smithsonian Folklife Festival in Washington DC in 1992. The Bernalillo Matachines were also featured in the 10-year American Encounters Exhibit at the Smithsonian. In 1997, the Bernalillo Matachines were inducted into the New Mexico Hispanic Traditional Folk Musicians Hall of Fame.

Matachine dancers.

3.6 BERNALILLO COMMUNITY MUSEUM

The Bernalillo Community Museum was launched in July 2019. The Museum represents the vision grassroots coalition of community members that wanted to create a community-focused museum to engage the people and provide a space for local capacity building, multi-vocality, and civic engagement. The Bernalillo Community Museum exhibits are intended to capture significant themes of community relevance, providing a platform for local conversations, storytelling, and history-making.

MUSEUM ADVISORY COUNCIL

The Bernalillo Community Museum prides itself on the community governance model implemented through the Museum Advisory Council. The Museum Advisory Council is comprised of twelve members that function

as the Governance Body, which aims to build strong relationships between the Museum and the Bernalillo community.

The Advisory Council has identified the following Draft Values:

- **Multi-Vocality:** We prioritize multiple and underrepresented voices.
- **Building Local Capacity:** We explicitly offer internship, volunteer, and collaborative opportunities to residents in surrounding communities.
- **Community Voices:** Members of the public add to exhibits after consultation with the Museum Advisory Council.
- **Community Gathering Space:** Community members see the Museum as a gathering space to accomplish their own goals.
- **Reflection:** Visitors have a chance to reflect on their past and think about their future, informed by the stories found in our exhibits.

The community gathering space could be realized and supported by a "Cultural Campus" that includes the Martha Liebert Public Library, Town Hall, and W.D. Carroll Elementary School *(see Chapter 8, Community Services and Facilities for more detail on the Cultural Campus)*.

The Bernalillo Community Museum is seeking 501(c)(3) status through its fiscal sponsor, the New Mexico Community Foundation. The fiscal sponsorship will allow the Museum Advisory Council to focus on governance for the life of the institution and ensure voices are central to the Museum's decision-making.

EXHIBITS and PROGRAMMING

The Covid-19 pandemic delayed the opening of the Bernalillo Community Museum to the public. However, the Museum launched an inaugural interactive exhibit in May 2021. The Community Voices Project was aimed at creating conversations between generations about storytelling, food, and dance traditions among families. The interactive exhibit consisted of short, animated videos posted on YouTube and Facebook, accompanied by an activity booklet that could

be downloaded on the website and through the Museum's Facebook page. The exhibit was designed to encourage multi-generational conversations.

The first outdoor exhibit was completed in partnership with the Gutierrez-Hubbell House and Cultural Center, Bernalillo Clerk's Office, and Sandoval County Clerk's Office to celebrate the 100-year anniversary of the 19th Amendment to the US Constitution awarding women the right to vote. The Museum received lodgers' tax funding to develop the Museum's first indoor exhibit, which focuses on the history of Bernalillo.

Collaboration with the Bernalillo Public Schools and other cultural programming in the area is essential for future initiatives. The intimate aspect of the Museum is also very important. The Museum Board intends to create small group conversations with local leaders and interactive exhibits in collaboration with existing cultural assets in the Town.

Building local capacity through internships and educational experiences will be a focus of future programming. To assist the Museum in achieving these goals, in 2021, the Bernalillo Community Museum was a recipient of funding from the New Mexico Economic

Development Department Outdoor Equity Fund. The grant was awarded to recruit high school juniors and seniors to serve as sustainable tourism interns.

CHAPTER 4

LAND USE & COMMUNITY CHARACTER

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4.1 INTRODUCTION

One of the fundamental roles of the Comprehensive Plan is to guide and plan for growth in a manner that helps the community achieve its vision. An important component of the planning process is to gain an understanding of how Bernalillo's establishment and growth over time was shaped by its location adjacent to the Rio Grande, between the Pueblos of Santa Ana and Sandia, and along the regional trade route of El Camino Real. The community has grown from a few homes and irrigated farm lands to a vital small town with a wide array of residential, commercial, industrial, and institutional land use and development. Understanding its history, character, and use of land will help guide Bernalillo's future growth and development while ensuring that its charm and small town character is retained for current and future generations.

4.2 COMMUNITY CHARACTER

The residents of Bernalillo value their agricultural heritage, historic traditions, and small town sense of place. Bernalillo has maintained its distinctive character on the banks of the Rio Grande even as it has become one of the fastest-growing municipalities in New Mexico. Bernalillo's character provides a challenge and an opportunity to build a unique community that will embrace the past, present, and future.

HISTORIC LAND USE

Bernalillo's community character is unique and provides a strong sense of place built from its historic roots and development. Spanish settlement began with large hacienda ranches stretching from the Sandia Mountains to the Rio Grande Bosque. Smaller farms were established with parcels running perpendicular to the Rio Grande as settlers needed access to water to grow crops and provide for livestock. Homes were built at the edge of long lots and fields laid out in "varas", thereby maintaining access to the acequias. From the first historic references to Bernalillo in 1696 through the 1700s, the community was known for its ranches, vineyards, and winemaking.

The historic El Camino Real trade route connected Santa Fe to Mexico along the Rio Grande. The route was developed as a wagon road that eventually became El Camino del Pueblo in Bernalillo. The Atchison, Topeka and Santa Fe (ATSF) Railway arrived in 1880. Over time, small shops, services, and public buildings were built in clusters rather than at one central location. As noted in Section 3.2, this pattern of development is known as a "cordillera" village (meaning string or chain). The first cluster grew to be known as Las Cocinitas, located near the current location of Bernalillo Town Hall. Another cluster grew up on Camino del Pueblo around the current location of Our Lady of Sorrows Church and El Zócalo Plaza.

The Pueblo people used canals to irrigate their fields of corn, beans, squash, and cotton. Farmers from Spain and Mexico built acequias (*Spanish for irrigation canals*) along the east side of the Rio Grande in Bernalillo, running parallel to the Rio Grande. The acequias were managed cooperatively by the users and a Mayordomo that was put in charge of maintenance and irrigation flow. The irrigated farm fields can still be found throughout the community, including on Leybas Lane north of Bernalillo High School, along the Rio Grande levee, and between Gutierrez Road and S. Hill Road south of Avenida Bernalillo. The acequias running through Bernalillo contribute to the community's strong sense of place.

Today, the acequias are managed by the Middle Rio Grande Conservancy District (MRGCD). The MRGCD Albuquerque Main Canal diverts irrigation water from the Rio Grande near Algodones and runs

Bibo General Merchandise Store, c.1903. Source: Southwest Jewish Archives.

along the Rio Grande through Bernalillo, feeding the Bosque Lateral in north central Bernalillo north of Old Highway 44. The Sandia Acequia is fed from the Albuquerque Main Canal south of US 550 and runs west of Rotary Park and then forms the southern municipal limits, joining the Bernalillo Acequia before it enters the Pueblo of Sandia. The Bernalillo Acequia is the oldest irrigation channel in the community. It runs along the railroad tracks, coming into Bernalillo on the west side of the railroad then crossing to the east near the Sandoval County/US 550 Station.

As Bernalillo grew, large parcels were divided to keep land in the family, while continuing to provide access to irrigation water from the acequias where agriculture continued. This practice created a land use pattern of long, narrow lots without always ensuring regular access. The resulting land pattern can be seen in northern Bernalillo near the Rio Grande in the El Llanito neighborhood, in the Rio Grande neighborhood between Camino del Pueblo and Camino Don Tomas south of US 550, and on either side of Avenida Bernalillo between Interstate 25 and the railroad tracks.

In the center of the community, land in the Las Cocinitas neighborhood was divided in an informal manner over time with very narrow access ways. These land use patterns are very distinctive of a traditional New Mexico community.

BERNALILLO'S BUILDING PATTERNS

The architectural palette of New Mexico is drawn from the people who have called the state home and their cultural traditions. These building patterns are the result of adaptation to the natural environment, materials, and lifestyles that contribute to the character of Bernalillo.

The Pueblos were built with the traditional materials available to the builders, including stone and adobe walls, and wooden vigas supporting flat earthen roofs. As noted by the State Historic Preservation Office (SHPO), *"The architecture of the Puebloan peoples is the foundation for the predominant architectural style in New Mexico."* Structures were built incrementally over time, and many had multiple stories.

Early residents of Bernalillo and the Rio Grande valley adapted these materials to Spanish Colonial building traditions from Europe and Mexico. Structures featured walls of adobe blocks, enclosed patios, and portales (porches) supported by sturdy posts and elaborate corbels. Families often had multiple buildings on one site, combining home and business in one location.

An adobe building is vulnerable to moisture and requires vigilant maintenance. In some cases, families built new homes on top of the foundations of older adobe structures. In other cases, new subdivisions have replaced the traditional development pattern.

Territorial Style

Territorial Style architecture arrived in New Mexico as the territory became part of the United States. The Territorial style adapted elements of Greek Revival style popular in the east United States at that time, such as double-hung windows, wooden trim, and fired bricks shipped from Midwest manufacturers. Peaked roofs, already common in mountainous Northern New Mexico, were adopted to better manage rain fall. Dedicated commercial structures first appeared during this era, in particular after milled lumber and plate glass became available by railroad after 1880.

Elements of Territorial style and later revivals can be seen on Camino del Pueblo today. Many commercial

El Zócalo (left) and the Salazar building (right) along Camino del Pueblo.

buildings feature a false front façade screening a peaked roof. Homes and businesses showcase wooden trim around doors and windows, often brightly painted in New Mexico's traditional turquoise and earth tones. El Zócalo Plaza, with properties built from the 1870s through 1920s, shows the evolution and adaptation of the Territorial style by Bernalillo builders.

Spanish-Pueblo Revival Style

The Spanish-Pueblo Revival style combined elements in revivals of the Pueblo and Spanish Colonial traditions, with adaptation of modern building techniques. The Coronado State Monument Museum & Visitor Center, designed by John Gaw Meem and constructed in 1940, is an understated example of Spanish-Pueblo Revival with adobe construction and prominent vigas focused on a patio and porch showcasing the riverside location. The Roosevelt School on Calle Malinche was also designed in the Spanish-Pueblo Revival style.

At several locations along Camino del Pueblo, commercial structures are grouped around a patio or central parking plaza in a revival of the Spanish Colonial style. New stores were later added to these clusters. In other locations, a family may have added a smaller accessory dwelling or casita at the rear of a lot for family members or guests. Many older homes and commercial buildings were built close to the street with porches characteristic of the Spanish Colonial and Territorial style design.

These building styles welcome in New Mexico's dry air and bright light while keeping the occupants safe and comfortable. Even some of the newer franchised and corporate retail and service buildings on US 550 have adapted elements of local building styles.

The structures that were designed to incorporate a human scale have typically been set close to the street and sidewalk, and utilize natural building materials. These architectural styles strengthen the historic land use pattern and character that gives Bernalillo its unique sense of place.

El Santuario de San Lorenzo, c. 1857.

HISTORIC PRESERVATION

The community of Bernalillo has a long history stretching back over 300 years. However, only a few of the oldest structures have survived into the 21st century.

The New Mexico Historic Preservation Division (HPD) administers the National Register of Historic Places, which lists properties of national historic significance, and New Mexico's State Register of Cultural Properties, which lists properties of statewide significance. For nomination and acceptance, a property must be at least 50 years old, look much the way it did in the past, and be associated with events, activities, or developments of importance. Nominated properties may be single buildings, sites, structures, objects, or an entire district. Listing on the National Register is voluntary and provides a first step towards eligibility for historic tax credits. HPD offers a variety of resources covering New Mexico's architectural history and techniques for rehabilitation and revitalization of historic property.

Historic Districts

A National Historic District is an area possessing a significant concentration of historic properties united by past events or aesthetically by plan or physical development. One of the functions of HPD is to review and nominate eligible historic property and districts. There are two historic districts in Bernalillo, including

the Abenicio Salazar and the Las Cocinitas historic districts.

The Abenicio Salazar Historic District is located on Camino del Pueblo between Calle de Escuela and Riesling Road, and is listed on both the National Register of Historic Places and State Register of Cultural Properties (*see Table 4.1: Historic Properties*). Abenicio Salazar (1857-1941) was a prolific adobe builder in Bernalillo and the surrounding area who, with his son, built four of the structures in the historic district. Only nine principal structures remain of the thirteen that existed when the historic district was nominated to the National Register in 1980.

Institutional and commercial buildings in the Abenicio Salazar Historic District, going from north to south on Camino del Pueblo, include:

- **Our Lady of Sorrows Convent** *(now El Zócalo Building):* Built in 1874 and listed on the State Register individually.
- **Our Lady of Sorrows High School** *(now Salazar Building):* A two-story adobe structure used as a parochial school from 1922-1966, and currently managed as an office building at El Zócalo Plaza.
- **Accessory Structures:** Two 1-story adobe structures located at the rear of El Zócalo Plaza.
- **Commercial Structure:** A one-story structure located south of the Salazar building, which was the home of a candy and soda shop for over 30 years.

Residential buildings in the Abenicio Salazar Historic District include:

- **Adobe House:** Built in the 1920s or 1930s;
- **Francisco C. de Baca House:** Built in 1905-1907 in the Classical Revival style;
- **Mallet Winery:** Built around 1908 and later converted to a house on the historic site of the 1870s Bibo store; and
- **Mallet Barn:** Built around 1908 and later converted to a house. It is now separated from the rest of the historic district by Riesling Road.

The Las Cocinitas Historic District, meaning "The Little Kitchens", was listed on the State Register of Cultural

Abenicio Salazar Historic District boundary.

Properties in 1969. The Las Cocinitas neighborhood is located in the heart of the Bernalillo community on the west side of Camino del Pueblo between Calle Don Francisco and Avenida Bernalillo, and is the site of the oldest buildings in Bernalillo. For many years, there was a small plaza and church in this area.

In 1964, many of the historic commercial buildings on Camino del Pueblo were demolished or reduced in size when the road, then designated as US Highway 85, was expanded to four lanes after the construction of Interstate 25. At about the same time, noted New Mexico architect, George Pearl, studied the remaining buildings in Las Cocinitas. The nomination noted that many of the homes contained Spanish and Pueblo-style architectural elements indicating continuous use since the original settlement in the 1700s.

Historic Properties

There are two individual buildings and one site listed on both the National Register of Historic Places and the State Register of Cultural Properties:

- **Kuaua Ruins:** Located at the Coronado Historic Site and preserves the Pueblo of Kuaua, which was occupied from approximately 1300 A.D. until the Pueblo Revolt of 1680. Archaeologists excavated over 1,200 rooms in the ruins in the 1930s, which were later backfilled to preserve the site. Several of the kivas contained murals that were preserved for viewing. The Visitors' Center is listed individually on the State Register *(see Section 5.4 for more information on the Coronado Historic Site).*
- **Our Lady of Sorrows Church** *(now Santuario de San Lorenzo):* Built of adobe bricks on a stone foundation in 1857 as part of a church-building initiative of Archbishop Jean Baptiste Lamy. The 120-foot by 65-foot structure was remodeled in 1892, adding a sloped metal roof with modifications to the front façade including a round window in the Territorial-style. The structure was rededicated as Santuario de San Lorenzo and has had limited use since a modern brick church was built between the historic structure and Camino del Pueblo in 1971.
- **Roosevelt School** *(now Martha Liebert Public Library):* Constructed in 1935 under the Depression-era Federal Emergency Relief Administration (FERA). The Spanish-Pueblo Revival-style structure is built of reinforced concrete, adobe bricks, and hand-hewn wooden vigas donated by the US Forest Service. The school originally offered four classrooms along a single corridor and a full basement.

The following three additional locations in Bernalillo are listed on the State Register of Cultural Properties:

- **Coronado State Monument Museum & Visitor Center:** A single-story Pueblo Revival-style building. It opened in 1940 and was most recently renovated in 2006.
- **Our Lady of Sorrows Convent**: Now part of Sandoval County's El Zócalo Plaza Events Center. Jose Leandro Perea, a local merchant and proprietor of a large land grant, built the structure in 1874 for the Sisters of Loretto. The adobe building is a one-story Territorial-style structure built around a central courtyard.
- **Pueblo of Santiago:** An archaeological site partially located in the Santiago Subdivision in southwest Bernalillo. The Spanish Entrada Site historic marker and the majority of the historic Pueblo of Santiago are located just outside of the Bernalillo municipal limits. This was the likely location of the Coronado Expedition's base of operations in the winter of 1540-41, with over 1,000 members camped along the Rio Grande. Archaeologists excavated the site in 1957. The Willow Creek Open Space now protects the site as conservation property and offers public access to the Bosque and Rio Grande.

Given Bernalillo's colorful history, there are likely other buildings that would qualify for nomination to the National or State registers. Aside from recognition, listing on the National or State registers provides for tax credits and other incentives to the property owner.

TABLE 4.1: HISTORIC PROPERTIES

Name	Location	Date Built	Register Listing
Abencio Salazar National Register Historic District	Camino del Pueblo	1873-1950	National & State
Coronado State Monument Museum and Visitor Center Building	US 550	1940	State
Kuaua Ruins *(Coronado State Monument)*	US 550	c.1300-1700	National & State
Las Cocinitas Historic District	Camino del Pueblo	c.1690	State
Our Lady of Sorrows Church *(Sanctuario de San Lorenzo)*	Camino del Pueblo	1857	National & State
Our Lady of Sorrows Convent *(El Zócalo Building)*	Camino del Pueblo	1874	State
Pueblo Santiago	Santiago Subdivision	c.1400-1600	State
Roosevelt School *(Martha Liebert Public Library)*	Calle Malinche	1935	National & State

Source: NM Historic Preservation Division.

4.3 EXISTING LAND USE

LAND USE INVENTORY

Consensus Planning conducted a windshield survey of existing land uses in Bernalillo in June 2021. The survey noted existing uses and vacant land. The identification of vacant land presents an opportunity for future development.

Bernalillo's predominate land use is medium-density, single-family residential development laid out in older neighborhoods with narrow streets. Newer neighborhoods with curvilinear streets and cul-de-sacs are characteristic of development on the west side of Bernalillo. There are only a few multi-family sites and mobile home parks scattered throughout the Town. Commercial uses are found along Camino del Pueblo, US 550, and NM 528. Industrial and manufacturing uses are located along Hill Road and Interstate 25, and in the southern part of the Town near the railroad. Descriptions of each land use category follows below:

Residential-Agriculture

Low-density residential/agricultural use represents about 10.6% of Bernalillo's area *(see Table 4.2)*. Mostly located on the edges of the community, these areas have residential homes on larger lots with a more rural character and may have septic systems. Many of these lots have on-site accessory agricultural uses.

Residential

Typical residential use represents about 22.4% of Bernalillo's land area. The majority of these residential areas are medium-density single-family lots. There are a mix of neighborhoods that developed incrementally over time and larger subdivisions developed more recently. A portion of these are mobile homes or manufactured homes on individual lots. There are some older neighborhoods that contain older homes in need of rehabilitation. Some of the new developments are gated subdivisions with larger homes than have been traditionally available in Bernalillo.

High-Density Residential

High-density and multi-family development makes up less than 1% of land use in Bernalillo. Two multi-family apartment complexes are located along Camino Don Tomas. The Villa Elena apartments provide 54 units of affordable housing off Camino del Pueblo. The Village at the Bosque (a Bernalillo Housing Authority project) is located northeast of Rotary Park and two small multi-family developments are located south of Avenida de Bernalillo. There are a limited number of duplexes or townhomes in Bernalillo.

TABLE 4.2: EXISTING LAND USE

Land Use	Acres	Percentage
Residential/Agricultural	326	10.6%
Residential	691	22.4%
High-Density Residential	29	0.9%
Mobile Home Park	19	0.6%
Commercial	181	5.9%
Industrial	139	4.5%
Public/Institutional	194	6.3%
Agriculture	67	2.2%
Open Space/Drainage	355	11.6%
Park	141	4.6%
Utilities	2	0.1%
Vacant	933	30.3%
Total Area*	**3,077**	**100.0%**

**Excludes rights-of-way. Source: Consensus Planning, June 2021*

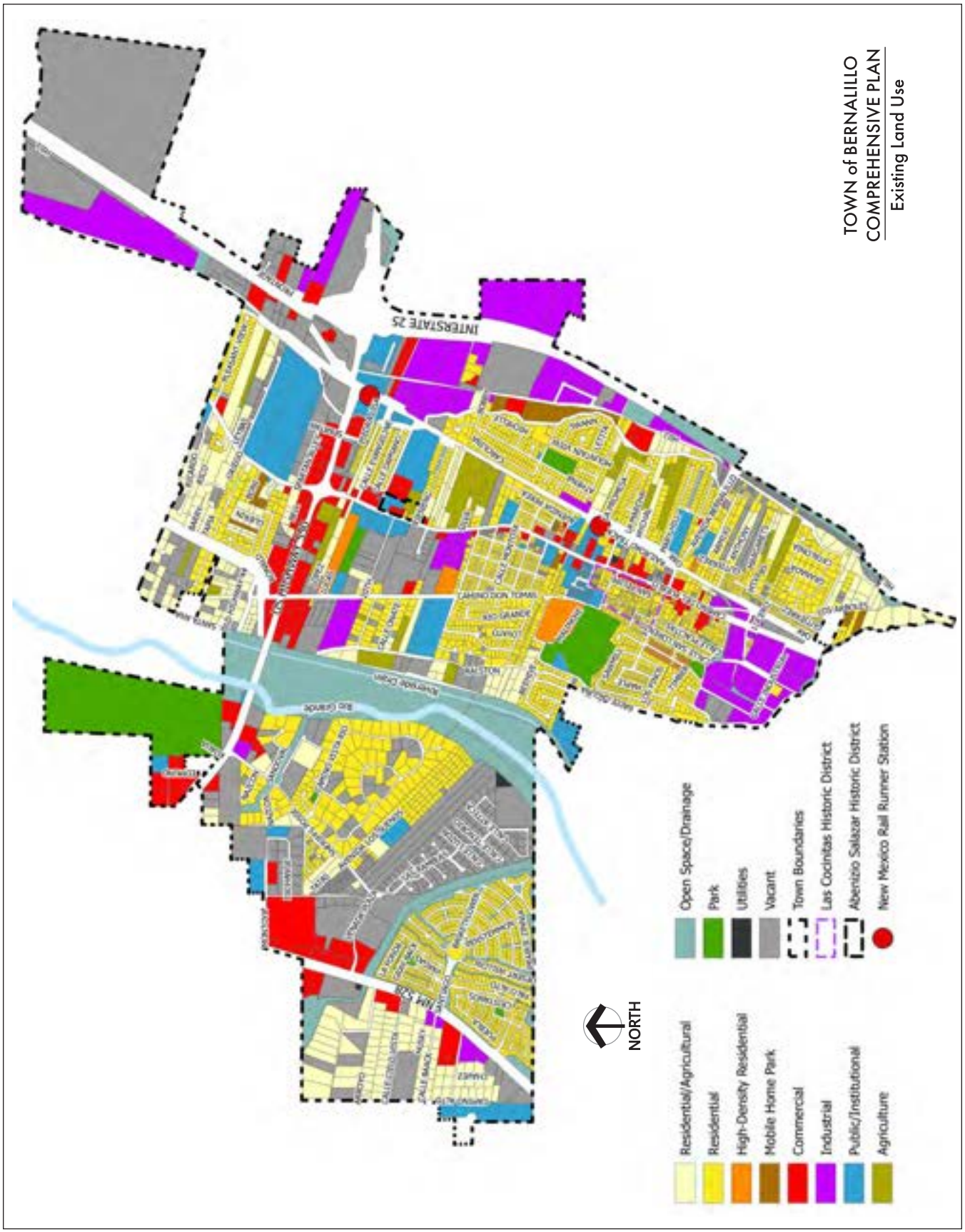
Mobile Home Park

Mobile Home Park accounts for approximately 0.6% of the land area in Bernalillo. Mobile Home Parks are characterized by multiple mobile homes or manufactured homes on one parcel. Many of these sites have been in place for a long time, including locations along and near Old Highway 44, South Hill Road, Calle Presidente, and Los Arboles Road.

Commercial

Commercial land use accounts for approximately 5.9% of Bernalillo's land area. Commercial use is mostly located along major corridors including Camino del Pueblo, US 550, and NM 528. There are a mix of locally-owned shops and national chains on the historic Camino del Pueblo corridor, including shopping and retail establishments, sit-down restaurants, health and wellness services, banking and finance, and other services.

Commercial development along US 550 and NM 528 are typical of fast-growing suburban areas with a variety of convenience stores and commercial establishments. US 550 functions as a regional


TOWN of BERNALILLO
COMPREHENSIVE PLAN
Existing Land Use
INTERSTATE 25
NORTH
Residential/Agricultural
Residential
High-Density Residential
Mobile Home Park
Commercial
Industrial
Public/Institutional
Agriculture
Open Space/Drainage
Park
Utilities
Vacant
Town Boundaries
Las Cocinitas Historic District
Abenizio Salazar Historic District
New Mexico Rail Runner Station

commercial corridor with restaurants (sit-down, fast/casual, and drive-through), lodging, general retail, and automotive services. A Walmart Supercenter is located on NM 528, with a complement of fast food and automotive services, landscaping, and storage uses.

Industrial

Industrial land use accounts for approximately 4.5% of Bernalillo's land area. The more intensive industrial uses are mostly located along the railroad and Hill Road (west of Interstate 25). A large concentration of industrial use is located at the south end of Town where Camino del Pueblo and the railroad tracks converge near the Pueblo of Sandia. The locations of the industrial sites are largely driven by the major transportation corridors. There are also industrial sites scattered throughout the Town along Camino del Pueblo, Camino Don Tomas, and along NM 528. Industrial sites are characterized by metal fabricators, manufacturing, building material suppliers, and similar uses.

Institutional

Institutional uses account for approximately 6.3% of Bernalillo's land area. Several public and institutional uses, including Town Hall, Martha Liebert Public Library, and the Bernalillo Community Museum, are located in the town center along Calle Malinche near Camino del Pueblo. The historic Sandoval County Courthouse and the US Post Office are located just to the north at Calle Corte/Calle de Presidente. Another important institutional node along Camino del Pueblo includes the Lady of Sorrows Catholic Church, The Potter's House Church, St. Vincent de Paul Society, PB & J Family Services, Loretto Park, and Sandoval County's El Zócalo Plaza, located between Villa Elena and Riesling Road.

Bernalillo has several public school facilities, including Bernalillo High School, Bernalillo Middle School, Bernalillo Elementary School, and W.D. Carroll Elementary School. The new Sandoval County Government Complex and Thirteenth Judicial Court are located west of NM 528, north of Idalia Road. The Coronado Historic Site and Coronado Campground are important attractions for visitors to Bernalillo.

Agriculture

Agriculture land use accounts for approximately 2.2% of the land area. Agricultural sites are located adjacent to acequias and are typically long, narrow lots oriented in a east-west direction. Agricultural sites within Bernalillo are located east and west of the railroad along Lermuseaux Lane and Silva Lane, and a small agricultural area is located parallel to the Rio Grande. Typical uses include irrigated alfalfa fields and small-scale agriculture.

Open Space and Drainage

Open space and drainage accounts for 11.6% of the land area. The Rio Grande and Bosque account for a majority of the open space area. Drainage-ways include arroyos that feed the Rio Grande and the acequia system.

Park

Park use accounts for approximately 4.6% of the land area in Bernalillo. The largest public park facility is the 15-acre Rotary Park, located west of Camino Don Tomas along Calle Don Francisco. The 7.5-acre Loretto Park is located on Camino del Pueblo next to Our Lady of Sorrows church. Athena Pond Park (a 1.0-acre integrated drainage facility) is located east of the railroad. Other small neighborhood parks are located within the Santiago community along NM 528.

Utilities

Utilities account for approximately 0.1% of Bernalillo's land area. This includes the Town's water distribution and sewer collection facilities, electric power sub-stations, and other property used for public and private utilities.

Vacant

Vacant land account for approximately 30.3% of the land area in Bernalillo. Vacant land ranges from small parcels in the residential areas to larger parcels within industrial and commercial areas. A large vacant parcel is located on the east side of Interstate 25, which was the subject of a 2007 approval by the Town Council for development of a mostly residential project with some commercial along the Frontage Road. The vacant parcels represent future development opportunities for Bernalillo.

EXISTING LAND USE SUBAREAS

To better understand existing land use, the Comprehensive Plan delineates six geographic subareas in Bernalillo. These include two subareas that focus on the major transportation corridors of Camino del Pueblo and US 550 and four subareas identified in accordance with the north, east, west, and central areas of the community, which are described below:

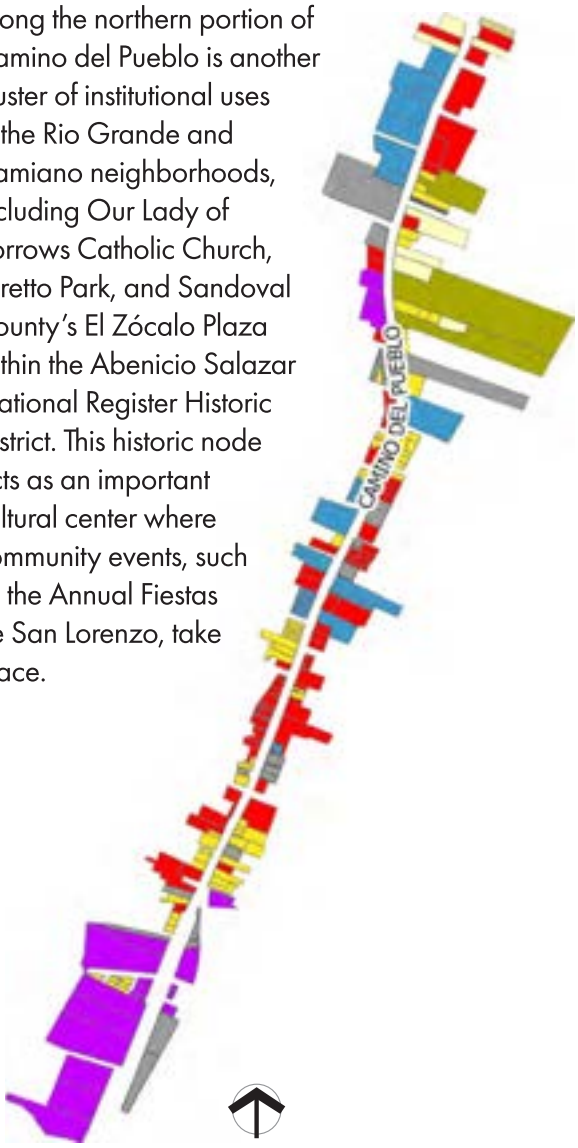
Camino del Pueblo "Main Street" Corridor

Camino del Pueblo was known as Main Street in Bernalillo before the 1960s. Embodying the heart and soul of Bernalillo, the corridor runs the length of Town north to south, between the railroad to the east and Camino Don Tomas to the west. Camino del Pueblo is the modern successor to the historic trade and commerce routes between Santa Fe and Mexico and continues to serve as an important commercial and cultural corridor.

Much of Camino del Pueblo is walkable and characterized by smaller buildings located at the street edge with parking located on the side or in the rear. Pedestrian-oriented development is the predominant development pattern.

Land use along Camino del Pueblo is primarily characterized by commercial and institutional development. In the central portion of Camino del Pueblo, institutional uses are clustered around the Town of Bernalillo offices, with older commercial buildings lining the street bordering the historic Las Cocinitas and Old Town neighborhoods. There are a mix of commercial buildings and houses that were converted to commercial uses located north of the historic Sandoval County Courthouse. There is also vacant land and light industrial uses on the west and agricultural uses on the east side of Camino del Pueblo. A mix of newer and older commercial buildings are located closer to US 550.

Along the northern portion of Camino del Pueblo is another cluster of institutional uses in the Rio Grande and Damiano neighborhoods, including Our Lady of Sorrows Catholic Church, Loretto Park, and Sandoval County's El Zócalo Plaza within the Abenicio Salazar National Register Historic District. This historic node acts as an important cultural center where community events, such as the Annual Fiestas de San Lorenzo, take place.



Camino del Pueblo "Main Street" Corridor

Looking north on Camino del Pueblo.

US 550 Regional Commercial Corridor

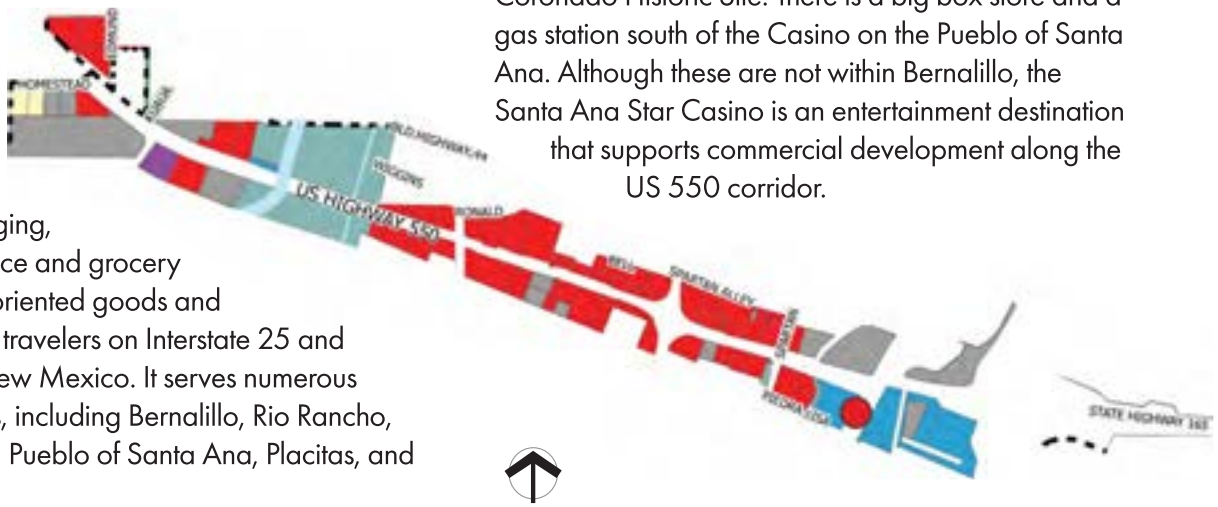
The US 550 Regional Commercial Corridor is located between Interstate 25 and NM 528. It bisects Bernalillo from east to west in the northern area of the community and has been in a state of nearly constant reconstruction since 2009.

This commercial activity area provides goods and services (lodging, dining, convenience and grocery stores, and auto-oriented goods and service shops) for travelers on Interstate 25 and from northwest New Mexico. It serves numerous local communities, including Bernalillo, Rio Rancho, Pueblo of Sandia, Pueblo of Santa Ana, Placitas, and Algodones.

US 550 goes west from the bridges over Interstate 25, railroad tracks, and the Bernalillo Acequia to a signalized intersection of Spartan Alley/Rail Runner Avenue. To the north, Spartan Alley provides access to Bernalillo High School. There are fast-food and casual dining restaurants, a gas station, and a strip mall along US 550. To the south, Rail Runner Avenue provides access to the Sandoval County/US 550 Rail Runner station located between the east end of Piedra Lisa Road and South Hill Road. The station brings a daily influx of vehicular traffic to the commercial corridor.

The intersection of US 550 and Camino del Pueblo is one of the busiest intersections in Bernalillo, with approximately 11,000 vehicles a day from the south and over 50,000 vehicles a day to the west *(see Section 6.4 Street Conditions for information on traffic counts and congestion)*. The intersection of US 550 and Camino Don Tomas is also very busy, with approximately 6,000 vehicles a day from the south. There are two motels north of US 550 at Camino del Pueblo, with restaurants and retail stores on the north side of the road. There are a mix of older retail buildings, vacant lots, and a newer gas station on the south side of the road. A mix of restaurants and retail buildings occupy both sides of US 550 between Camino Don Tomas and the Rio Grande bridge. West of the Rio Grande, several commercial properties in Bernalillo have been recently developed, including Bosque Brewing overlooking the Rio Grande Bosque.

The Santa Ana Star Casino is located just west of the Coronado Historic Site. There is a big box store and a gas station south of the Casino on the Pueblo of Santa Ana. Although these are not within Bernalillo, the Santa Ana Star Casino is an entertainment destination that supports commercial development along the US 550 corridor.



US 550 Regional Commercial Corridor

- Residential/Agricultural
- Residential
- High-Density Residential
- Mobile Home Park
- Commercial
- Industrial
- Public/Institutional
- Agriculture
- Open Space/Drainage
- Park
- Utilities
- Vacant
- Town Boundaries
- Las Cocinitas Historic District
- Abenicio Salazar Historic District
- New Mexico Rail Runner Station

US 550 commercial corridor.

North Bernalillo

The north Bernalillo area, known as the El Llanito neighborhood, is bounded by Pueblo of Santa Ana on the north, Placitas on the east, US 550 on the south, and the Rio Grande on the west. This area includes the north side of the US 550 corridor, Bernalillo High School, and the heavy industrial sites of American Gypsum and Vulcan Materials Company. Along Interstate 25 frontage, there is existing industrial development and opportunities for additional industrial on vacant property. The Sandia Mountain #1 Dam, located south of NM 165 and east of Interstate 25, provides protection from flash flooding from the east.

North of US 550, the land use is predominantly low-density and medium-density single-family development and a few agricultural fields. The area is characterized by single-family homes on larger lots, manufactured or mobile home subdivisions, rural residential lots, some mobile home parks, and a small amount of commercial development. There are vacant lots between Bernalillo High School and the US 550 corridor with infrastructure in place for development. There is also a large vacant parcel east of Interstate 25 that was previously approved by the Town Council as a156-acre Planned Development Area (PDA), primarily with residential use and some commercial use along the Interstate 25 frontage.

The area west of Camino del Pueblo has a more rural character, with the Bosque Lateral Number One, Rancheritos Drain, and Rancheritos Canal traversing north and northeast from the Bernalillo Riverside Drain and the Bernalillo Acequia bisecting North Bernalillo west of North Hill Road. Old Highway 44 still serves this area as a residential street. Vacant lots along the acequias were used in the past for irrigated agriculture or grazing, and are developing with large residential lots. There are opportunities to improve housing conditions through rehabilitation and renovation of homes in this area.

Looking west towards Bernalillo High School campus.

East Bernalillo

East Bernalillo is bounded by the US 550 commercial corridor on the north, the railroad on the west, Interstate 25 and Placitas on the east, and the Pueblo of Sandia on the south. The land use in this area is influenced by the transportation routes, including Avenida Bernalillo west of Interstate 25. Important destinations include the Sandoval County/US 550 Rail Runner station and the Downtown Bernalillo station located between Calle Duranes and Calle Don Francisco along Railroad Track Road.

The northeastern edge of this area is predominately industrial, with some commercial development, a mobile home park, residential uses, and drainage. The industrial development includes manufacturing and building supply enterprises. Commercial use in this area includes the Albuquerque North/Bernalillo KOA and self-storage. There is a large vacant site on the east side of S. Hill Road with visibility from Interstate 25 that could be developed for industrial or commercial use.

Residential development is predominantly characterized by low to medium-density, single-family units and mobile homes. The Bernalillo Acequia provides separation between the industrial and higher intensity uses to the east and the residential uses to the west. West of the Bernalillo Acequia, development is predominately characterized by medium density single-family development and some rural residential development in fair condition. The Gutierrez neighborhood on the south end is primarily rural residential in character with small agricultural operations amongst single-family and mobile home subdivisions.

MCT Industries on the east side of S. Hill Road.

Housing conditions south of Avenida Bernalillo are mixed and some in deteriorated condition. There are several vacant parcels that could be redeveloped with new housing. There is also a row of small vacant lots along Interstate 25 that have severe slopes with poor access that would be challenging for future development.

East Bernalillo

Residential/Agricultural	Open Space/Drainage
Residential	Park
High-Density Residential	Utilities
Mobile Home Park	Vacant
Commercial	Town Boundaries
Industrial	Las Cocinitas Historic District
Public/Institutional	Abenizio Salazar Historic District
Agriculture	New Mexico Rail Runner Station

Central Bernalillo

Central Bernalillo includes the historic Las Cocinitas and Old Town neighborhoods and newer Sawmill and Rio Grande neighborhoods. The area is bounded by US 550 on the north, the railroad on the east, Pueblo of Sandia to the south, and the Rio Grande on the west. Camino del Pueblo bisects the area. There are a number of activity nodes within Central Bernalillo, including:

- US 550 corridor at Camino del Pueblo and Camino Don Tomas;
- Our Lady of Sorrows Catholic Church, Loretto Park, and El Zócalo Plaza at Camino del Pueblo and Calle del Escuela;
- Rotary Park and Recreation Center at Camino Don Tomas and Calle Don Francisco;
- The concentration of commercial and institutional uses located in the vicinity of Calle Don Francisco and Camino del Pueblo;
- Rail Runner Downtown Bernalillo station on Railroad Track Road; and
- Bernalillo Industrial Park at the south end of Town.

The residential land use in Central Bernalillo is mostly medium-density, single-family development with neighborhoods that contain curvilinear streets and cul-de-sacs. Housing conditions are good to fair, with pockets of deteriorated units near the railroad and Avenida Bernalillo. Medium-density residential development is mostly concentrated south of Calle del Norte, north of the Bernalillo Industrial Park. The west area along the Rio Grande includes low-density and rural residential development and vacant parcels.

There is high-density residential development located along Calle Don Tomas, including the Village at the Bosque, a Bernalillo Public Housing Authority project north of Rotary Park. Other high-density residential developments are located further north at Calle Montoya and Alfredo Aragon Lane. There is vacant land located on both sides of Camino Don Tomas in the northern portion of Central Bernalillo that could support new single-family and multi-family residential development. There is also a good opportunity for mixed-use development along Camino del Pueblo near the Downtown Bernalillo station.

The industrial uses in this area are concentrated at the Bernalillo Industrial Park. There are some vacant buildings and a limited amount of land available for new industrial development.

Central Bernalillo

Residential/Agricultural	Open Space/Drainage
Residential	Park
High-Density Residential	Utilities
Mobile Home Park	Vacant
Commercial	Town Boundaries
Industrial	Las Cocinitas Historic District
Public/Institutional	Abenizio Salazar Historic District
Agriculture	New Mexico Rail Runner Station

Bernalillo Industrial Park sign (left) and Village in the Bosque multi-family development.

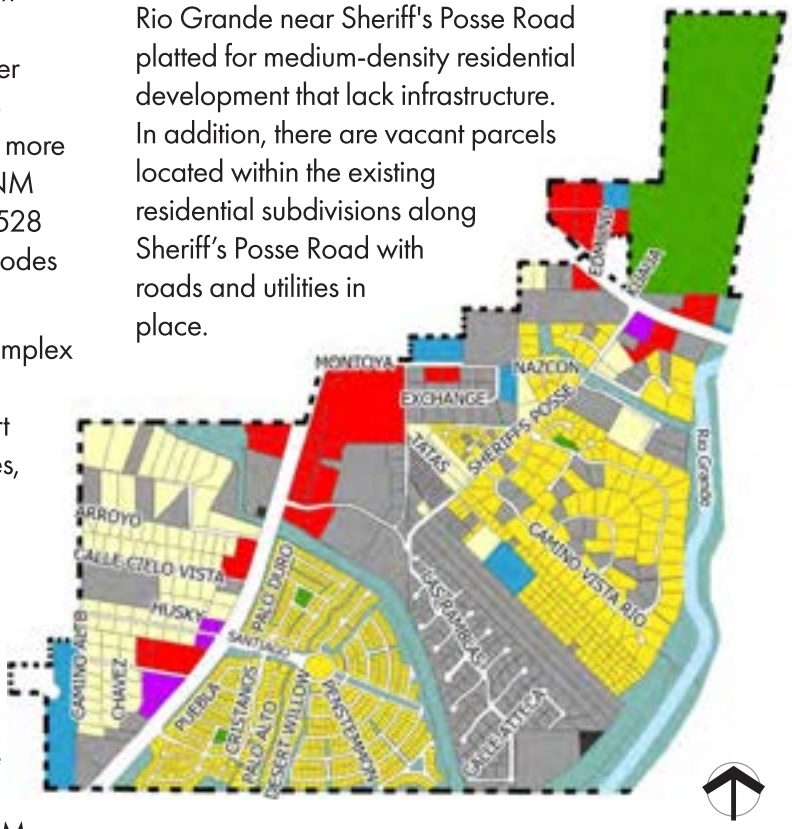
West Bernalillo

West Bernalillo includes the area west of the Rio Grande, bounded by the Pueblo of Santa Ana on the north and the City of Rio Rancho on the west and south. This area is more suburban in character with the newer Bosque Encantado and Santiago subdivisions, and a large commercial center. The more rural Thatcher neighborhood is located west of NM 528. The area is bisected north to south by NM 528 and east to west by US 550. Important activity nodes within this area include:

- The new Sandoval County Government Complex and the Thirteenth Judicial Court;
- A large commercial center with the Walmart Supercenter, banking and financing services, restaurants, auto-oriented goods and services; and the Sandoval County Jail;
- Sheriff's Posse Rodeo Grounds; and
- Coronado Historic Site and Coronado Campground.

The residential land use is mostly medium-density, single-family development, including the Santiago and Bosque Encantado subdivisions located between NM 528 and the Rio Grande. Many of these homes are newer and larger than in other areas of Bernalillo. Low-density and rural residential development is located west of NM 528, with a mix of newer and older homes. Commercial and industrial uses line the highway.

West Bernalillo has a large amount of vacant land near the existing commercial land along NM 528 and US 550. There are opportunities for mixed-use and multi-family development on the vacant parcels east of NM 528 south of the Walmart shopping center, and for commercial and multi-family development east of the Walmart. There are vacant parcels located west of the Rio Grande near Sheriff's Posse Road platted for medium-density residential development that lack infrastructure. In addition, there are vacant parcels located within the existing residential subdivisions along Sheriff's Posse Road with roads and utilities in place.



West Bernalillo

Residential/Agricultural	Open Space/Drainage
Residential	Park
High-Density Residential	Utilities
Mobile Home Park	Vacant
Commercial	Town Boundaries
Industrial	Las Cocinitas Historic District
Public/Institutional	Abenizio Salazar Historic District
Agriculture	New Mexico Rail Runner Station

Single-family homes in Santiago, east of NM 528.

4.4 EXISTING ZONING

The Bernalillo Comprehensive Zoning Ordinance was revised and adopted by the Board of Trustees in 2020 as Ordinance No. 310. State statutes (Chapter 3 Articles 19-21, NMSA 1978) require that local regulations must "be in accordance" with the Comprehensive Plan. The Zoning Ordinance established zone districts, enumerated definitions and standards, and provided processes for applications and approvals.

ZONE DISTRICTS

Section 6 of the Zoning Ordinance provides for the Official Zoning Map and processes for zone changes and interpretations. Section 7 describes nine zone districts. There are four residential districts, one combined commercial and residential district, two commercial-industrial districts, a special use district, and a Planned Unit Development district. The most-current Official Zoning Map *(see page 47)* includes two categories that are not defined by the Zoning Ordinance - No Zoning and EXPT (exempt) - for certain parcels owned by government agencies.

The minimum lot area required by the New Mexico Environment Department applies if on-site sewage treatment is used. Minimum lot sizes for domestic wells are as required by state requirements. Single-family dwellings are permitted in all zones except the M-1 Light Industrial Zone. Accessory Dwelling Units (ADUs) are a conditional use in residential zone districts. Institutional uses, such as churches, clinics, or schools, are permitted in most zones as conditional uses.

R-R Rural Residential Zone

The R-R zone district is intended to "provide for large lot and low-density residential uses that are conducive to a rural atmosphere." Mobile homes not more than 30 years old are permitted in this zone district. The minimum lot size is 12,000 square feet, except where septic systems are required, and require a minimum lot width of 70 feet. Agricultural uses are permitted on lots over 0.5 acres in size, including temporary farm stands. There are limits on the number of animals based on the size of the lot.

R-1 Single Family Residential Zone

The R-1 zone district is intended for "a low density of population in which the principal land use is single-family dwellings." Up to seven hens, but no roosters, are permitted in a secure enclosure. The minimum lot size is 6,000 square feet, with a minimum width of 60 feet.

R-1A Mixed Single-Family Residential Zone

The R-1A zone district is intended for "a mixture of single-family dwellings, including mobile homes, manufactured homes, and conventional housing units." As in the R-R zone district, mobile homes not more than 30 years old are permitted in this zone district. The minimum lot size is the same as in the R-1 zone.

R-2 Multiple-Family Residential Zone

The R-2 zone district is intended for "a more diverse mix of housing options, including single-family and multifamily dwelling units." Duplexes, townhomes, and apartments are permitted; however, townhomes are limited to four attached dwelling units per structure.

The minimum lot size for townhouses and other zero lot line development is 4,000 square feet, with a minimum width of 30 feet. The minimum lot size for single-family dwellings is 6,000 square feet, with a minimum width of 60 feet. The minimum lot area for apartments is only restricted by requirements for parking and usable open space.

C-R Commercial Residential Zone

The C-R zone district is intended for "single-family and multi-family dwellings as well as limited commercial activities." As in the R-2 zone district, duplexes, townhomes, and apartments are permitted. Office, retail, service, and church buildings smaller than 10,000 square feet are permitted uses, as is a Bed and Breakfast Inn. Mixed-use development, on the same site or in the same building, is permitted with a Conditional Use Permit.

The minimum lot size for residential uses is the same as in the R-2 zone. There is no minimum lot area or floor/area ratio (FAR) for non-residential uses.

C-1 Commercial Zone

The C-1 zone district is intended for "those commercial and business activities that serve the community on a day-to-day basis." Single-family dwellings,

duplexes, and apartments are permitted uses, but not townhouses. A variety of commercial uses are permitted, including those permitted in the C-R zone district. Mixed-use development, indoor amusement, auto sales, lumber yards, and landscape materials sales are allowed with a Conditional Use Permit. Much of the property on Camino del Pueblo, US 550, and NM 528 is zoned C-1 Commercial.

The minimum lot size for residential uses in the C-1 zone is the same as the R-2 zone. For single family development, the minimum lot size is 6,000 square feet, with a minimum width of 60 feet along the front setback. For townhouses, the minimum lot size is 4,000 square feet, with a minimum width of 40 feet. For mixed-use, the minimum lot size is 6,000 square feet, with a minimum 200 square feet of usable open space per dwelling unit. There is no minimum lot area or FAR for non-residential uses.

M-1 Light Industrial Zone

The M-1 zone district is intended to "permit heavy commercial and light manufacturing uses which do not endanger the health and safety of the community". Manufacturing and warehousing are permitted uses. More intensive uses, such as an auto wrecking yard, public utility transmission, or a "similar use which is compatible with the general nature and intent of this zone" are allowed with a Conditional Use Permit. A watchman's dwelling is also allowed with a Conditional Use Permit. The Bernalillo Industrial Park and much of the property along Hill Road is zoned M-1 Light Industrial.

There is no minimum lot size. Screening is required where an M-1 lot abuts a residential use or a residentially-zoned lot.

S-U Special Use Zone

The S-U zone district "permits only those uses which require special consideration because of their unusual nature, frequency of occurrence, effect on surrounding property or similar reason." The S-U zone is not intended for residential use. Larger office, retail, and service buildings, generally over 20,000 square feet, are only permitted by rezoning property to the S-U zone district. RV Parks are also only allowed in the S-U zone district, along with several other listed uses.

The Walmart Supercenter and newer commercial development on US 550 is zoned S-U. An application for a change to the S-U zone district must be accompanied by a site development plan that controls the specific use of the property.

PUD Planned Unit Development Zone

The PUD zone district "is intended to accommodate master planned developments." A PUD may include a mix of commercial and residential uses, a range of residential densities, or more innovative layout and design than may be possible in other standard zone districts.

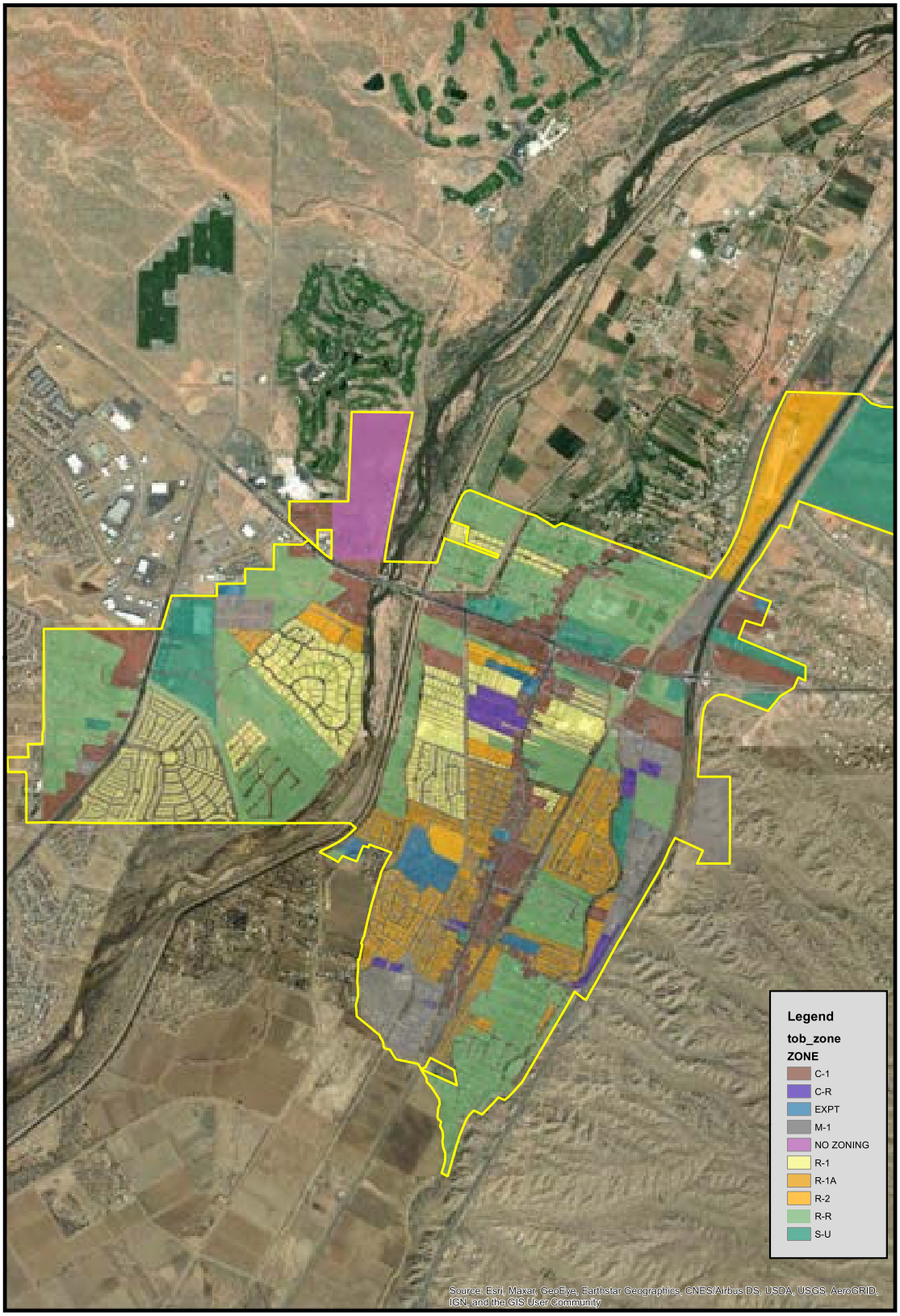
MainStreet Overlay Zone

An overlay zone supplements requirements of the underlying zoning in certain areas. The MainStreet Overlay Zone is intended to promote and protect the special character and human scale of development along Camino del Pueblo, formerly known as "Main Street" in Bernalillo. The MainStreet Overlay Zone applies to "all land which has frontage along South Camino del Pueblo between the US Highway 550 (formerly NM Highway 44) intersection and the Avenida Bernalillo intersection". The specific boundaries of the MainStreet Overlay Zone are not shown on the official zoning map, but are described in Section 17.A.1 of the Zoning Ordinance.

The MainStreet Overlay District Design Guidelines were adopted by reference as part of the Zoning Ordinance. The guidelines address setbacks; massing; height; parking; accessory structures and utility facilities; fences and walls; porches, portales, and awnings; architectural features; landscaping; building materials; openings in street facing walls; signs; and security. The guidelines also include a recommended planting list. Elements, such as the "build-to" lines with a maximum setback from the street, help to maintain the walkable character of the corridor, while qualitative elements seek to conserve the traditional building pattern that makes Bernalillo's core unique.

Context-sensitive development is a challenge on this relatively long corridor with a mix of historic clusters and more modern strip-commercial development patterns. The Design Guidelines should be reviewed to ensure they still meet the community's expectations.

TOWN OF BERNALILLO 2022 ZONING MAP



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ZONING STANDARDS

The Zoning Ordinance includes minimum lot areas (noted above for each zone district) and setbacks. There are also general requirements listed for home occupations, off-street parking, and signage.

Home Occupations

Section 18 of the Zoning Ordinance designates two types of home occupations. Home occupations are generally permitted uses if they "do not generate noticeable external impacts." Home occupations are considered conditional uses when clients or employees visit the property, or if signage is necessary. Any home occupation is limited to no more than 25% of the floor area of a home, nor more than 600 square feet of accessory buildings.

Off-Street Parking

Section 20 of the Zoning Ordinance lists minimum parking requirements. Single-family dwellings must have two parking spaces per dwelling unit. Apartments with five or fewer units must have two parking spaces per dwelling, while apartments with more than five units must have three spaces per dwelling. Typical commercial parking requirements are listed. This section of the Zoning Ordinance includes parking design standards and off-street loading requirements.

Signs

Section 21 of the Zoning Ordinance contains general sign regulations. The number, type, and size of on-premise signs is regulated in each zoning district where allowed. In general, new billboards are prohibited. Off-premise signs, where allowed, require a Conditional Use Permit. All signs must comply with the Night Sky Protection Act (§74-12-1 to §74-12-11 NMSA 1978).

Review and Approval Process

The Zoning Officer reviews all zoning applications, and makes a final decision on applications for a Permitted Use, Certificate of Nonconformance, and Zoning Interpretation. The Planning & Zoning Commission makes the final decision on applications for a Conditional Use Permit (CUP), Variance, demolition in the MainStreet Overlay Zone, and appeal of Zoning Officer Decision. The Town Council makes the final decision, with recommendation by the Planning and Zoning Commission, on applications for a zone change, zone text amendment, annexation, and appeals of Planning and Zoning Commission decisions.

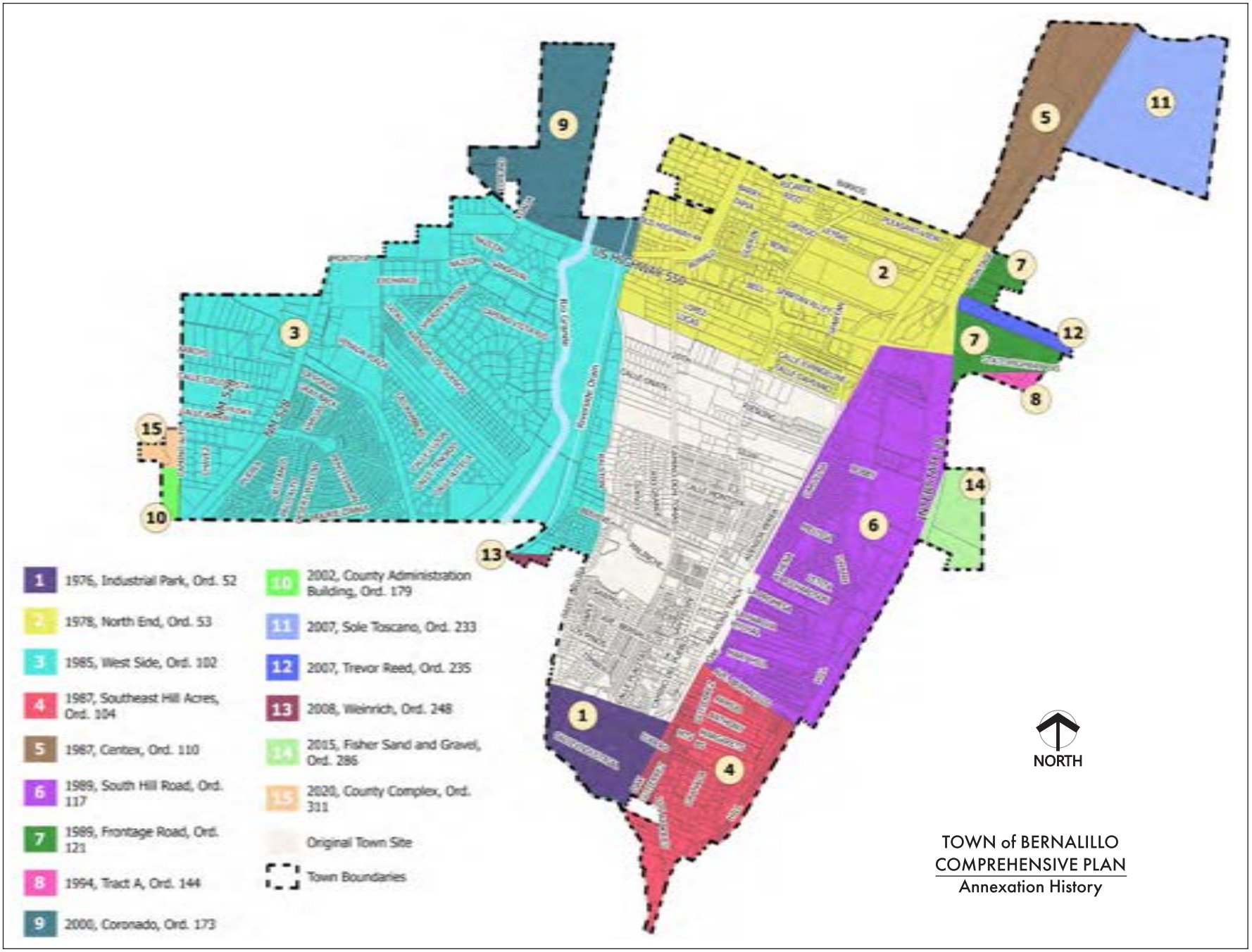
4.5 ANNEXATION

The process and procedures for annexation of land to the Town of Bernalillo is provided in the Bernalillo Comprehensive Zoning Ordinance (No. 310). Zoning is established concurrently with annexation.

The State of New Mexico grants the authority to annex territory to a municipality by Section 3, Article 7 of the New Mexico Statutes. There are three methods for a municipality to include adjacent unincorporated land. Annexation can be used as a tool to ensure that land use and development standards in adjoining areas are consistent with land use within the municipality. Annexation can also ensure new development is in accordance with the goals and objectives of the community as expressed in the Comprehensive Plan. Areas to be considered for annexation must be contiguous with the municipal boundary and the municipality must be able to demonstrate the ability to provide services.

Each of the following methods has its own merits, and each illustrates different degrees of legislative delegation of power to municipalities:

- **Arbitration Method (Sections 3-7-5 through 3-7-10 NMSA 1978):** This method allows a municipality to annex contiguous territory if the municipality can declare that the benefits of annexation can be made within a reasonable time frame to the desired territory.
- **Municipal Boundary Commission Method (Sections 3-7-11 through 3-7-16 NMSA 1978):** This method establishes an independent commission to determine annexation of a territory to the municipality. The Municipal Boundary Commission will meet whenever a municipality petitions to annex a territory or if a majority of the landowners of a territory petition the Commission to annex the territory into the municipality.


1 1976, Industrial Park, Ord. 52
2 1978, North End, Ord. 53
3 1985, West Side, Ord. 102
4 1987, Southeast Hill Acres, Ord. 104
5 1987, Centex, Ord. 110
6 1989, South Hill Road, Ord. 117
7 1989, Frontage Road, Ord. 121
8 1994, Tract A, Ord. 144
9 2000, Coronado, Ord. 173
10 2002, County Administration Building, Ord. 179
11 2007, Sole Toscano, Ord. 233
12 2007, Trevor Reed, Ord. 235
13 2008, Weinrich, Ord. 248
14 2015, Fisher Sand and Gravel, Ord. 286
15 2020, County Complex, Ord. 311
Original Town Site
Town Boundaries
NORTH
TOWN of BERNALILLO
COMPREHENSIVE PLAN
Annexation History

- **Petition Method (Section 3-7-17, NMSA 1978):** This method requires a petition signed by the majority of property owners in a contiguous territory supporting annexation into a municipality.

The original townsite of Bernalillo was incorporated in 1948 including the area between the railroad tracks and the Sandia Acequia, with Calle del Escuela on the north and Camino del Bosque on the south. There have been 15 annexations, with the most recent in 2020 bringing the north portion of the County Complex into the Town limits.

4.6 OTHER LAND USE PLANS and ORDINANCES

TRANSIT-ORIENTED DEVELOPMENT PLAN

Transit-oriented development (TOD) is a form of development that combines commercial, office, and residential uses in proximity to a transit station. Convenient access to transit supports more dense, walkable, mixed-use neighborhoods. The Federal Transit Administration encourages communities to support TOD through updates to planning, zoning, and building codes.

The Bernalillo Town Council adopted the Bernalillo Transit-Oriented Development (TOD) Plan in 2007 as a supplement to the Comprehensive Land Use Plan. The goals of the TOD plan included: "creating a sense of place around each station; aligning TOD principles and the Town's vision for each area; improving multi-modal connectivity throughout the Town; reducing the need for driving; energizing the local business community; and providing a range of housing types".

The planning process examined the areas within a .25 and .5-mile radius of each commuter rail station. The TOD plan provided recommendations in four topic areas:

- Transportation circulation and connections, including several new street connections, enhancements to existing streets, new bike routes, and new pedestrian paths;
- Specific improvements in the Downtown Station Area;
- Specific improvements in the Sandoval County/ US 550 Station Area; and
- Expansion of housing types allowed by zoning, such as townhouses, mixed-use lofts, courtyard housing, plaza housing, and accessory dwelling units.

The Piedra Lisa Subdivision started out as a TOD project; however, the project was modified for single-family homes. Otherwise, there have been no specific TOD projects proposed since the plan was completed, the goals and recommendations remain relevant for future development in Bernalillo.

SUBDIVISION ORDINANCE

The Bernalillo Subdivision Regulations were adopted in 1997 by Ordinance No. 155. The Subdivision Regulations apply to the division of land within the Town of Bernalillo and for a distance of three miles beyond its corporate limits (or a partial distance when another municipality is also within three miles). The Town of Bernalillo is currently updating its Subdivision Ordinance at the time of this writing.

Subdivision review begins with a pre-application procedure, which gives a subdivider the opportunity to receive advice and assistance of the Town's staff early to informally review a sketch plan. The Subdivision Regulations provide for the Planning and Zoning Commission to review preliminary plats at a public hearing. The Planning and Zoning Commission then reviews final plats for conformance with any conditions of the preliminary plat, prior to recording with Sandoval County. An alternate summary procedure is available to combine preliminary and final plat review for certain small divisions of land.

Ordinance No. 231 amended the Subdivision Regulations for the transfer of water rights. An applicant for subdivision approval is required to make water rights available to the Town for consumptive use. Provisions are included for developments that include water conservation features.

Subdivision Design Standards are attached to the Subdivision Regulations. The Design Standards cover technical items, such as easements and survey monuments; street and sidewalk design; water and

sewer system design; drainage and flood control; street lighting and signage; and encroachments.

FLOODPLAIN ORDINANCE

The Flood Damage Prevention Ordinance was adopted in 2008 as Ordinance No. 247. The regulations implement the Flood Insurance Study for Sandoval County and incorporated areas and the Flood Insurance Rate Maps (FIRM), dated March 18, 2008. The Bernalillo Planning & Zoning Director is appointed by the Town Council as the Floodplain Administrator. A Floodplain Development Permit is required in flood hazard areas *(see Section 7.4 for more information on stormwater and flooding).*

PROPERTY STANDARDS

Building and Property Standards were updated in 2021 and adopted by Ordinance #318. The Ordinance adopts the current version of New Mexico building codes by reference. The New Mexico Construction Industries Division currently administers building permits in the Town of Bernalillo.

The Nuisance and Abatement Ordinance #197 was adopted in 2005. The ordinance applies to residential buildings, including space and occupancy standards. A "substandard" building may have inadequate sanitation; structural hazards; hazardous wiring, plumbing, or mechanical equipment; or have fire hazards. Any building considered substandard as defined are to be declared a nuisance to be abated. Bernalillo also has ordinances to control weeds, litter, and noise.

4.7 LAND USE and ZONING ISSUES

PRESERVATION of COMMUNITY CHARACTER

Bernalillo's unique community character is based on the community's location on the Rio Grande and an historic land use pattern built on generations of acequia culture. The "varas" development pattern with narrow streets and long-narrow lots perpendicular to the Rio Grande and the acequias is a challenge and an opportunity for Bernalillo. The acequias need to be protected from encroachments while they continue to provide irrigation for agriculture and informal walkways along the ditch banks.

The cordillera pattern of commercial and institutional clusters along the sidewalks close to Camino del Pueblo lends itself to preservation of existing structures and new development at a pedestrian scale. Traditional Spanish-Pueblo and Territorial revival style architecture distinguishes historic building patterns that are distinctive of the communities along the Rio Grande.

Certified Local Government Program

An option to better integrate historic preservation into local planning and development review is the Certified Local Government (CLG) Program, a National Park Service initiative administered by the HPD. A CLG is eligible to apply for federal historic preservation grants and can request technical assistance from HPD. There are currently nine CLGs in New Mexico.

ACCOMMODATING GROWTH

Bernalillo has been among the fastest growing municipalities in New Mexico. Much of this growth has taken place on property that was annexed and subsequently developed. There are a limited number of parcels adjacent to municipal limits in unincorporated Sandoval County that are served by municipal water and may be appropriate for annexation; however, rather than actively promoting annexation, the Town of Bernalillo prefers to respond to annexation requests by property owners.

Given these limitations, new growth and development will mostly be accommodated within the existing Town limits through infill. The TOD plan provides recommendations to take the greatest advantage of Bernalillo's two commuter rail stations, even though no TODs have yet been completed. Additional "Missing Middle" housing types identified in the TOD Plan would provide new options for current and future Bernalillo residents between single-family homes and larger apartment complexes.

HIGHWAY CORRIDORS

The large volume of regional traffic on US 550 has attracted new commercial development along the regional commercial corridor. The Walmart Supercenter has also attracted new commercial development to NM 528. These corridors contain a mix of local and national retailers and services, with

a number of small businesses competing with big box and chain stores.

While these commercial developments increase Bernalillo's Gross Receipts Tax revenue, they have not necessarily contributed to Bernalillo's sense of place and community character. Some builders have adopted typical local building patterns of small buildings set near the street. Even national organizations (e.g. Wells Fargo bank) have tried to adapt to local conditions. Other buildings have kept the standard suburban building plans used in many other cities across the country. Respondents to the Community Survey suggested that new commercial buildings should be built in traditional New Mexico architectural styles to better distinguish Bernalillo.

REVIEW and UPDATE LAND USE ORDINANCES

The Comprehensive Zoning Ordinance, Subdivision Ordinance, and Floodplain Ordinance should be regularly reviewed for conformance with amendments to state statutes, changing community conditions, and expectations for best practices in land use development. For example, some participants in the Community Survey suggested that freestanding signage should be limited to monument signs. As Bernalillo's growth continues to rely on infill development, there may be a need to accommodate greater flexibility in the Zoning Ordinance. As such, it may be appropriate to add additional provisions for "Missing Middle" housing to residential zoning districts.

As previously mentioned in this chapter, the Town of Bernalillo is in the process of updating its Subdivision Ordinance. There was lengthy discussion at the third public meeting regarding traffic studies, which are currently not required by the Subdivision Ordinance. The Town of Bernalillo has expressed the preference for development agreements with developers of larger projects. The development agreement should address potential traffic and drainage improvements to be completed by the developer.

As previously noted, the MainStreet Overlay District along Camino del Pueblo was established to preserve and protect the unique historic and traditional building patterns. However, the Overlay District is not currently shown on the Town's Official Zoning Map. As such, the Zoning Map should be modified to show the Overlay District and the existing Design Guidelines should be evaluated and modified, if necessary, to incorporate context-sensitive development standards that are appropriate for this important historic corridor.

Official Zoning Map

The Official Zoning Map is established in the Zoning Ordinance with a process to approve zone map amendments. The categories shown on the Official Zoning Map and those established by the Zoning Ordinance should match. The EXPT (exempt) district and No Zoning are not currently defined in the Zoning Ordinance. It is difficult to decipher the different districts on the Zoning Map, which should be corrected to help increase its readability.

Zoning categories should be periodically reviewed for parcels that may have changed use or have continued as a non-conforming use. For example, the American Gypsum Co. manufacturing plant between the railroad and Interstate 25 is zoned R-2 rather than a commercial or industrial zone. It may be appropriate for the Town to work with property owners on rezoning such parcels to better align land use and zoning.

Mural in progress at the south end of Camino del Pueblo; the first panel depicts Our Lady of Sorrows.

CODE ENFORCEMENT

While most Bernalillo property owners maintain their buildings, there are aging structures in the community that are in obvious need of maintenance and repair. There are also properties where discarded materials or junk has accumulated over time, which become a nuisance

to adjacent properties and cause public safety concerns. While staff is limited, enforcement of City codes is an important task, and requires skill, tact, and determination.

Maintenance of properties and removal of junk is a strong concern expressed by participants in the Community Survey and at public meetings. In response to the questions "The visual appearance of the Town should be improved", 86.4% of respondents to the Community Survey agreed or strongly agreed. Comments noted the need to clean up property across the community.

4.8 FUTURE LAND USE SCENARIO

The Future Land Use Scenario provides a graphic representation of how the Town of Bernalillo expects growth and development to occur over the next 20 years. The Scenario reflects existing conditions and community preferences expressed in the Community Survey and public meetings. It should be noted that the Future Land Use Scenario is intended for illustrative planning purposes; it is not intended to imply that the Town of Bernalillo will be purchasing private property or changing the zoning without the consent of the property owner.

Existing land use, zoning designations, and community conditions and concerns provided the basis for two alternative future land use scenarios. Preferred land uses were identified for vacant properties that currently comprise approximately 30% of Bernalillo's land area. The Future Land Use Scenario is a hybrid of both alternative land use scenarios.

The Future Land Use Scenario is intended to provide general direction for future decisions regarding land use and zoning. Since Bernalillo's recent growth is not expected to abate, future development will be focused on infill within the existing Town limits. Table 4.3 provides the acreage and relative percentage for existing and future land uses, followed by a description for each category.

LAND USE

Residential/Agricultural

Areas of low-density residential homes with accessory agricultural uses will continue to be present in Bernalillo, in particular on lots that do not have access to the sewer system. Residential/Agricultural areas make up approximately 12.3% (379 acres) of the land area within Bernalillo.

Residential

Residential areas at typical medium density will grow from approximately 22.4% (691 acres) to 27.1% (835 acres) under the Future Land Use Scenario. These areas are predominately single-family housing, including site-built and manufactured homes on fee-simple lots. Accessory dwelling units now provide new housing options in residential zoning districts. Some of these areas contain platted vacant lots that require completion of infrastructure before new homes can be built.

High-Density Residential

High-density residential development increases from less than 1% (29 acres) to 2.6% (80 acres) of Bernalillo's land area. This includes duplexes, tri-plexes, four-plexes, and larger apartment and condominium projects. New housing areas are shown

TABLE 4.3: EXISTING and FUTURE LAND USE

Land Use	Existing		Future	
	Acres	Percentage	Acres	Percentage
Residential/Agricultural	326	10.6%	379	12.3%
Residential	691	22.4%	835	27.1%
High-Density Residential	29	0.9%	80	2.6%
Mixed Use	-	-	75	2.4%
Planned Development Area	-	-	156	5.1%
Mobile Home Park	19	0.6%	10	0.3%
Commercial	181	5.9%	323	10.5%
Industrial	139	4.5%	371	12.1%
Public/Institutional	194	6.3%	196	6.4%
Agriculture	67	2.2%	121	3.9%
Open Space/Drainage	355	11.6%	388	12.6%
Park	141	4.6%	141	4.6%
Utilities	2	0.1%	2	0.1%
Vacant	933	30.3%	-	-
Total Area*	**3,077**	**100.0%**	**3,077**	**100.0%**

Excludes rights-of-way

for currently vacant property near NM 528, on Camino Don Tomas, and near Bernalillo High School. This category responds to the need for new market rate and affordable multi-family housing in Bernalillo.

Mixed-Use

Mixed-use represents approximately 2.4% (75 acres) of Bernalillo's land area. This includes the traditional community center along Camino del Pueblo and locations near US 550 and NM 528. Mixed-use development can include combining residential and commercial uses on one site, or on different floors of a single building. Mixed-use development is an essential element of Transit-Oriented Development (TOD) in the vicinity of the Downtown and Sandoval County/US 550 New Mexico Rail Runner commuter rail stations.

Planned Development Area

Planned Development Areas contain a mix of residential and commercial uses that are master planned by a private developer. The Future Land Use Scenario identifies a previously approved 156-acre development east of Interstate 25 in the northeast corner of Bernalillo that is planned for a mix of residential densities with a limited amount of commercial use along the Frontage Road.

Mobile Home Park

Mobile Home Park represents 0.3% (10 acres) of the Future Land Use Scenario. Mobile Home Parks are an affordable housing alternative.

Commercial

Commercial use expands from 5.9% (181 acres) to 10.5% (323 acres) under the Future Land Use Scenario. The additional commercial areas are primarily in-fill of currently vacant areas along the major commercial corridors of Camino del Pueblo, US 550, and NM 528. There are several sites available for commercial development visible from Interstate 25. Future commercial development will range from small buildings for retail and services to larger buildings serving customers from across the region. There are also opportunities for redevelopment and rehabilitation of current commercial property throughout Bernalillo as the community continues to grow.

Industrial

Industrial land use increases from 4.5% (139 acres) to 12.1% (371 acres). Industrial land use provides locations for new job creation and retention of existing jobs. Providing industrial jobs closer to home may also help reduce highway congestion. In addition to the Bernalillo Industrial Park on the south end of Camino del Pueblo, additional industrial area is shown along Hill Road and Interstate 25.

Public/Institutional

Public and institutional uses are anticipated to stay relatively stable over the next 20 years, with 6.4% (196 acres) of the Future Land Use Scenario area. Private institutional sites will likely redevelop as the community's needs change in the future.

Agriculture

Agriculture increases from 2.2% (67 acres) to 3.9% (121 acres) of Bernalillo's land area. It is anticipated that lots with access to the acequias will continue to be used for irrigated agriculture, in addition to dry-land agriculture.

Open Space/Drainage

Area for open space and drainage expands from 11.6% (355 acres) to 12.6% (388 acres). Additional areas are shown adjacent to current open space and drainage facilities. The Future Land Use Scenario also shows the MRGCD proposed river access at the US 550 Rio Grande bridge.

Park

Park use remains stable at 4.6% (141 acres) of Bernalillo's land area. It is assumed that future large subdivisions will provide parks and green space to serve the subdivision residents.

Utilities

Land used for utilities is shown on the Future Land Use Scenario remaining stable at 0.1% (2 acres) of the land area of Bernalillo.

Coronado Historic Site
Rio Grande
Riverside Drain
ALBUQUERQUE MAIN CANAL
RALSTON
CAMINO DON TOMAS
CALLE DEL NORTE
CALLE DE VARGAS
CALLE DE ONATE
CALLE MONTOYA
CALLE DON LORENZO
CALLE DON VICENTE
CALLE DON TOMAS
CALLE DON FELIPE
CALLE DON JUAN
CALLE DON ANTONIO
CALLE DON DIEGO
CALLE DON PEDRO
CALLE DON ALONSO
CALLE DON GARCIA
CALLE DON MARCOS
CALLE DON PABLO
CALLE DON JOSE
CALLE DON MIGUEL
CALLE DON RAMON
CALLE DON SANCHO
CALLE DON ESTEBAN
CALLE DON CARLOS
CALLE DON ENRIQUE
CALLE DON FERNANDO
CALLE DON GONZALO
CALLE DON HERNANDO
CALLE DON IGNACIO
CALLE DON JAIME
CALLE DON LUIS
CALLE DON MANUEL
CALLE DON NICOLAS
CALLE DON PEDRO
CALLE DON RAFAEL
CALLE DON SALVADOR
CALLE DON TOMAS
CALLE DON VICENTE
CALLE DON ALONSO
CALLE DON GARCIA
CALLE DON MARCOS
CALLE DON PABLO
CALLE DON JOSE
CALLE DON MIGUEL
CALLE DON RAMON
CALLE DON SANCHO
CALLE DON ESTEBAN
CALLE DON CARLOS
CALLE DON ENRIQUE
CALLE DON FERNANDO
CALLE DON GONZALO
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CALLE DON IGNACIO
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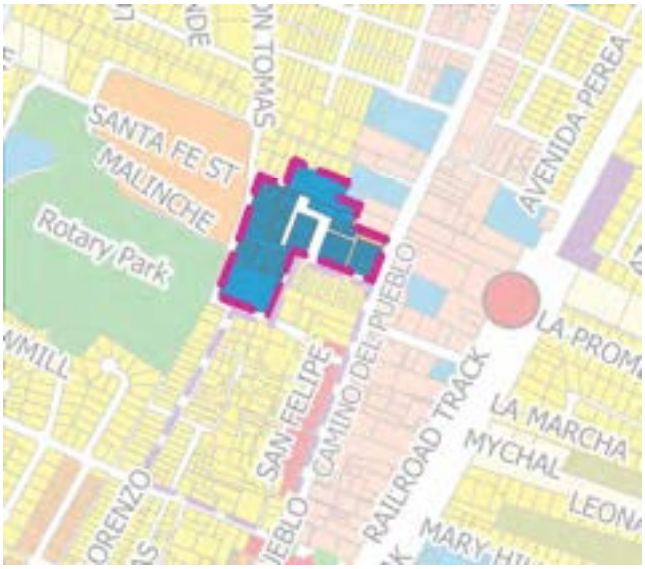
CALLE DON NICOLAS
CALLE DON PEDRO
CALLE DON RAFAEL
CALLE DON SALVADOR
CALLE DON TOMAS
CALLE DON VICENTE

SPECIAL FEATURES

Cultural Campus

Community members identified a need for a shared gathering space in proximity to the Bernalillo Community Museum and Martha Liebert Public Library. The Bernalillo Town Hall, Bernalillo Community Museum, Martha Liebert Public Library, and the former W.D. Carroll Elementary School are located near each other, thus creating an activity center on Calle Malinche, west of Camino del Pueblo. This area is proposed to be developed as a "Cultural Campus" that would function as a community gathering location for cultural events, similar to a historic central plaza *(see map below and Section 8.4, Community Facilities, for more detail on the Cultural Campus).*



Cultural Campus area.

Redevelopment Area

The Future Land Use Scenario identifies an area south of Avenida Bernalillo on both sides of the railroad tracks between Camino del Pueblo and Gutierrez Road that would be appropriate for redevelopment efforts due to existing physical conditions that often lead to increased vacancy and disinvestment. This area contains a mix of industrial, commercial, residential, and vacant property. A large portion of the housing is in deteriorated condition. This area falls within Bernalillo's Opportunity Zone *(see Section 5.3, Organizations and Initiatives for a description of Opportunity Zones).*

Redevelopment in this area can be supported by the designation as a Metropolitan Redevelopment Area (MRA) by the Town Council, followed by the creation of a MRA Plan, in accordance with the New Mexico Metropolitan Redevelopment Act. MRA plans are intended to correct blighted conditions and identify projects to help catalyze private investment through public/private partnerships.

Redevelopment area.

Enhanced Corridor

Avenida Bernalillo is a major entryway off Interstate 25 into the community. This State Highway would benefit from streetscape improvements, including sidewalks, pedestrian crosswalks, ADA ramps; bike lanes (if possible); and street trees. Coordination with NMDOT would be necessary for any improvements to this facility to occur.

Gateways

Community gateways are shown in the Future Land Use Scenario along the major corridors entering Bernalillo. Avenida Bernalillo at Interstate 25 features a large, attractive entry sign welcoming visitors to the community. Other entries that should be improved with signage and landscaping include:

- Camino del Pueblo on the south edge of Bernalillo;
- US 550 at Interstate 25; and
- US 550 west of Sheriff's Posse Road.

4.9 GOALS, OBJECTIVES, & STRATEGIES

LAND USE & COMMUNITY CHARACTER GOAL 1

Create an attractive live/work environment that reflects and is complementary to Bernalillo's character and context along the Rio Grande.

Objectives

- *To protect the public health, safety, and welfare by improving nuisance properties, mitigating the negative impacts of blight, and enhancing the visual appearance of Bernalillo's major entries and corridors.*
- *To encourage the preservation of traditional building patterns and acequia culture.*
- *To encourage quality development that respects and is architecturally compatible with the character of Bernalillo's historic areas.*

Land Use & Community Character Strategy 1.1
Designate the neighborhood in the southern area of Bernalillo on the east and west sides of the railroad tracks as an Metropolitan Redevelopment Area (MRA), as illustrated on the Future Land Use Scenario. Subsequently, solicit professional services of a consultant to create a MRA plan that identifies strategies for redevelopment and allows the Town of Bernalillo to contribute to projects in accordance with the New Mexico Metropolitan Redevelopment Act.

Land Use & Community Character Strategy 1.2
In coordination with NMDOT, create streetscape improvement plans for Camino del Pueblo, Avenida Bernalillo, US 550, and NM 528 that address sidewalks, pedestrian crossings, traffic calming, landscaping, and lighting. As part of this strategy, the Town of Bernalillo would take the lead on identify specific beautification elements, which may include landscape improvements, signage control, and public art.

Land Use & Community Character Strategy 1.3
Consider the establishment and funding of a facade improvement program to support the maintenance and improvement of commercial buildings along Camino del Pueblo and Avenida Bernalillo.

Land Use & Community Character Strategy 1.4
Evaluate the adequacy of current code enforcement staffing levels to enforce existing code regulations that address dilapidated buildings, weeds and litter, and dumping. If staffing levels are deemed inadequate, hire additional code enforcement staff to address the staffing gap.

Land Use & Community Character Strategy 1.5
Work with the community to help define Bernalillo's unique identity, and develop a brand that is incorporated into community gateway/entries, wayfinding signs, and promotional materials.

Land Use & Community Character Strategy 1.6
Design and construct community gateways (signage and landscape) at the east and west major entries into Bernalillo on US 550 and at the south entry on Camino del Pueblo, as identified on the Future Land Use Scenario. The existing east entry on Avenida Bernalillo noted on the Future Land Use Scenario should continue to be maintained and improved, as needed.

Land Use & Community Character Strategy 1.7
Develop a wayfinding signage program that directs visitors to Camino del Pueblo, Coronado Historic Site, Rotary Park, and other key community destinations.

Land Use & Community Character Strategy 1.8
Amend the Zoning Ordinance to allow for context-sensitive development standards for the mixed-use area (i.e. current Historic Overlay Zone) along Camino del Pueblo, as identified on the Future Land Use Scenario. The development standards should define the minimum requirements for parking, setbacks, building height and massing, relationship to the street, building entries, commercial floor area ratios, etc. As part of this strategy, amend the Official Zoning Map to clearly delineate this area.

Land Use & Community Character Strategy 1.9
Complete an update to the Subdivision Ordinance that is consistent with the recommendations in the Comprehensive Plan, including but not limited to, identification of the threshold for requiring a development agreement with a private developer, depending on the size of the project. The development agreement should address potential

transportation and drainage improvements required to be completed by the project developer.

Land Use & Community Character Strategy 1.10

Promote the use of the New Mexico State Income Tax Credit for Registered Cultural Properties, Federal Tax Credit for National Registered Historic Places, and the Historic Preservation Loan Fund to encourage the rehabilitation of historic buildings within Bernalillo.

LAND USE & COMMUNITY CHARACTER GOAL 2

Provide a balanced mix of land uses that accommodate a diversity of housing choices and business/employment opportunities.

Objectives

- *To increase the supply of market rate, workforce, and affordable rental and owner-occupied housing in Bernalillo.*
- *To meet the existing and future market demand for commercial services.*
- *To identify areas appropriate for new residential, commercial, and industrial development.*
- *To determine the viability of annexing land adjacent to the municipal boundary where infrastructure currently exists or can be feasibly extended.*

Land Use & Community Character Strategy 2.1

Work with local and regional builders and developers to determine the appropriate incentives to encourage infill development and expansion of residential building types. This could include, but not be limited to, increased residential densities, reductions or waivers in utility extensions and permit fees, and where appropriate, reductions in minimum lot size and setbacks, parking reductions, etc.

Land Use & Community Character Strategy 2.2

Create an inventory of land owned by the Town of Bernalillo that would be appropriate for donation towards the development of income-qualified, multi-family rental housing for special populations, such as single-parent households, veterans, disabled people, seniors, etc. As part of this strategy, consider the acquisition of vacant and abandoned properties to increase the inventory available for this purpose.

Land Use & Community Character Strategy 2.3

Work with owners of vacant properties on zone map amendments that would be consistent with the preferred land use illustrated on the Future Land Use Scenario.

Land Use & Community Character Strategy 2.4

Work with owners of non-conforming industrial or commercial properties on zone map amendments that would better align existing land use with the appropriate zoning category, with a particular focus on industrial or commercial development in residential zones.

Land Use & Community Character Strategy 2.5

Develop an annexation policy for property adjacent to the municipal boundary that can be efficiently served by municipal infrastructure and emergency services, in accordance with state enabling legislation. The policy should focus on requests by property owners to annex their property to the Town of Bernalillo, and should contain a cost-benefit analysis.

LAND USE & COMMUNITY CHARACTER GOAL 3

Promote the development of new, quality residential neighborhoods.

Objectives

- *To meet the existing and future need for new housing in Bernalillo.*
- *To encourage the development of new residential neighborhoods containing varied housing densities, such as single-family houses, apartments, townhouses, duplexes, etc.*
- *Encourage the development of multi-generational housing that reflect traditional and historic development patterns.*
- *To ensure neighborhoods have convenient access to parks, trails, and other community amenities through motorized and non-motorized transportation options.*

Land Use & Community Character Strategy 3.1

Work with local residential developers and builders on creating incentives that will encourage the build-out of existing, but vacant, residential lots within the Town of Bernalillo.

Land Use & Community Character Strategy 3.2

Amend the Zoning Ordinance to allow for the development of family compounds in single-family zones through cluster housing provisions as an alternative to conventional subdivision design. Regulations should include, but not be limited to:

- The minimum overall property size;
- The maximum number of dwelling units allowed;
- Minimum percentage of common open space required and that will be dedicated in perpetuity through a platting action;
- Location and orientation of the common open space and adjacency to acequias, if applicable;
- Uses allowed within common open space; and
- Setbacks from adjacent development.

Land Use & Community Character Strategy 3.3

Amend the Zoning Ordinance to require adequate separation and/or landscape buffers between new residential development and heavy commercial or industrial development.

Land Use & Community Character Strategy 3.4

Work with local builders on developing a set of voluntary guidelines for new single-family and multi-family development that address best building and construction practices that include, but is not limited to:

- Minimum energy efficiency standards;
- Site development practices;
- Reduction in maintenance costs;
- Construction materials;
- Indoor water use; and
- Water efficient landscapes.

Land Use & Community Character Strategy 3.5

For new subdivisions with greater than 30 units, require the dedication and development of neighborhood parks that will serve the needs of the subdivision residents. Where applicable, require that the subdivision provide a pedestrian connection to existing or planned multi-use trails.

CHAPTER 5

ECONOMIC DEVELOPMENT

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5.1 INTRODUCTION

Economic development is a process of investment that helps expand prosperity in a community. New enterprises create jobs and provide new sources of income. Economic development supports the retention and expansion of existing businesses, and works to attract new employers. A diversified economic base enables a community to respond to changing economic conditions, improve local incomes, increase job opportunities, and improve the overall quality of life.

Bernalillo was founded as a market town for farmers, merchants, and travelers on the historic El Camino Real. Over time, the local economy has adapted to changes in New Mexico's economy. The current economic base is built on manufacturing, wholesale trade, and transportation that brings new income into the community. New growth is occurring in tourism and professional services industries. This element provides an economic profile of Bernalillo, and discussion of organizations and initiatives, assets and attractions, and economic opportunities.

5.2 ECONOMIC PROFILE

BERNALILLO EMPLOYMENT

The American Community Survey (ACS) estimated that there were 3,765 Bernalillo residents in the employed civilian labor force in 2019, which was an increase of 6.6% from 2010 *(see Table 5.1)*. The ACS estimated that the Town's population increased by 16.2% in the same time period. Bernalillo contains 7.2% of Sandoval County's population, but only 6.1% of its labor force.

In 2019, the largest number of Bernalillo residents, 20.7%, were employed in the Educational Services, and Health Care and Social Assistance sector, which grew by 18.7% between 2010 and 2019. The Construction sector was the second largest employer with 13.8% of jobs, even while contracting by 12.8% in the same time period. In contrast, the Educational Services, and Health Care and Social Assistance sector in New Mexico as a whole employed 25.4% and the Construction sector employed 7.0% of the employed labor force.

The Other Services sector grew by the fastest rate in Bernalillo, increasing by 122% from 2010 to 2019. This sector also grew by the fastest rate in New Mexico, increasing by 11.3%. Finance and Insurance, and Real Estate and Rental and Leasing industries increased by 66% in Bernalillo; in contrast by 4.7% in New Mexico during the same time period.

SANDOVAL COUNTY EMPLOYMENT

Bernalillo is part of the larger Albuquerque and Santa Fe metropolitan area economy. More detailed economic statistics are available from the US Bureau of Economic Analysis at the county-level.

TABLE 5.1: BERNALILLO EMPLOYMENT BY INDUSTRY

	2010	2019	Change*
Employed Civilian Labor Force	3,533	3,765	6.6%
Agriculture, forestry, fishing and hunting, and mining	1.8%	2.2%	29.7%
Construction	16.8%	13.8%	-12.8%
Manufacturing	9.1%	6.9%	-19.9%
Wholesale trade	1.7%	2.3%	41.7%
Retail trade	11.8%	11.0%	-1.2%
Transportation and warehousing, and utilities	4.3%	3.6%	-12.4%
Information	2.4%	1.1%	-53.5%
Finance and insurance, and real estate and rental and leasing	4.3%	6.7%	66.0%
Professional, scientific, and management, and administrative and waste management services	6.1%	8.6%	49.1%
Educational services, and health care and social assistance	18.6%	20.7%	18.7%
Arts, entertainment and recreation, and accommodation and food services	13.8%	12.0%	-7.6%
Other services, except public administration	2.8%	5.8%	122.2%
Public administration	6.3%	5.4%	-7.2%

**Change is based on actual base number. Source: ACS, 5-Year Estimates, 2006-2010 and 2015-2019.*

Employment in Sandoval County grew by 11.8% between 2010 and 2019, while statewide employment in New Mexico only grew by 6.7% *(see Table 5.2)*. The largest industry in Sandoval County was Administrative and Support with 5,667 employees in 2019, followed by Health Care and Social Assistance with 4,934 employees, and Retail Trade with 4,788 employees. The share of employment in Administrative and Support industry at 11.3% of total employment in Sandoval County is over twice the share of 5.2% of New Mexico employment.

TABLE 5.2: SANDOVAL COUNTY EMPLOYMENT BY INDUSTRY

Industry	2010	2019	Change
Total Employment	44,758	50,037	11.8%
Farm Employment	791	935	18.2%
Forestry and Fishing	107	(D)	n/a
Mining, and Oil and Gas Extraction	260	258	-0.8%
Utilities	128	(D)	n/a
Construction	2,982	2,969	-0.4%
Manufacturing	4,482	3,439	-23.3%
Wholesale Trade	1,490	686	-54.0%
Retail Trade	4,864	4,788	-1.6%
Transportation and Warehousing	562	1,044	85.8%
Information	1,142	439	-61.6%
Finance and Insurance	1,966	1,727	-12.2%
Real Estate	2,207	2,379	7.8%
Professional, Scientific, and Technical Services	2,498	3,032	21.4%
Management	46	131	184.8%
Administrative and Support	2,487	5,667	127.9%
Educational Services	913	827	-9.4%
Health Care and Social Assistance	2,651	4,934	86.1%
Arts, Entertainment, and Recreation	1,504	1,521	1.1%
Accommodation and Food Services	3,311	3,720	12.4%
Other services	2,366	2,918	23.3%
Government	8,004	8,429	5.3%

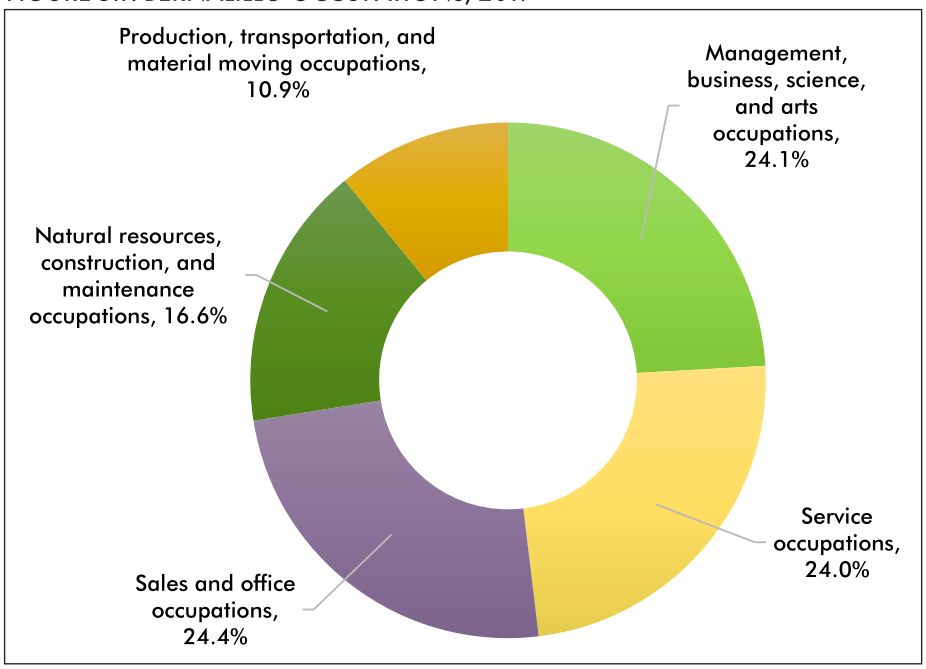
Source: US Bureau of Economic Analysis. (D) Not Disclosed, n/a-Not Available

OCCUPATIONS

Industry is the type of business a company engages in, such as manufacturing or retail trade. Occupation is the kind of work an employed person does, such as production or sales. Residents of Bernalillo have a relatively even distribution of occupations, as shown in Figure 5.1. Sales and Office contracted between 2010 and 2019, yet remains the largest group of occupations with 24.4% of employed residents in this category. Management, Business, Science and Arts occupations account for 24.1% of occupations, and Service occupations account for 24.0% of all jobs. Natural Resources, Construction, and Maintenance occupations employ 16.6% of Bernalillo's labor force.

Private wage and salary workers account for 75% of Bernalillo's employed labor force, which is higher than New Mexico where 71% of employed people are private wage and salary workers. Government employs 16% of Bernalillo's labor force, and 22% of New Mexico workers statewide. Self-employed workers account for the remaining 9% of Bernalillo's labor force, and about 7% of New Mexico workers.

FIGURE 5.1: BERNALILLO OCCUPATIONS, 2019



Source: ACS 5-Year Estimates, 2015-2019.

MAJOR EMPLOYERS

There are a range of major public and private employers in Bernalillo and the surrounding area. The largest local and regional employers are in government, retail, lodging and entertainment, and manufacturing and industrial sectors.

Government

- Sandoval County, the largest employer in Bernalillo (on Idalia Road west of NM 528)
- Bernalillo Public School District (multiple locations)
- Town of Bernalillo (multiple locations)

Retail

- Walmart Supercenter (NM 528)
- Home Depot (US 550 in Rio Rancho)
- Big R (US 550 on the Pueblo of Santa Ana)

Lodging and Entertainment

- The Santa Ana Casino Hotel and Hyatt Regency Tamaya Resort (US 550)
- The Sandia Resort & Casino (Interstate 25 and Tramway)

Manufacturing and Industrial

- Intel Corporation (NM 528 in Rio Rancho)
- Amfab Steel, Inc. (Calle Industrial west of Camino del Pueblo)
- American Gypsum (N. Hill Road)
- MCT Industries, Inc. (S. Hill Road)

LABOR FORCE and UNEMPLOYMENT

Labor Force

According to the US Bureau of Labor Statistics, Sandoval County's labor force grew by 9.7% between 2010 and 2020 to 66,325 people, far outpacing the adjacent Bernalillo County and Santa Fe County *(see Table 5.3)*. The labor force statewide only grew by 1.6% during the same time period.

TABLE 5.3: LABOR FORCE

County	2010	2020	Change*
SANDOVAL COUNTY	60,446	66,325	9.7%
Bernalillo County	324,142	303,820	2.0%
Santa Fe County	73,742	71,346	-3.2%
New Mexico	928,862	943,287	1.6%

Source: US Bureau of Labor Statistics, Local Area Unemployment Statistics.

Unemployment

The average annual unemployment rate in Sandoval County rose from 8.1% in 2010 to 8.6% in 2020 *(see Table 5.4)*. Although New Mexico experienced high unemployment rates in 2020 during the COVID-19 pandemic, Sandoval County's 8.6% unemployment rate was higher than either Bernalillo County or Santa Fe County in the metropolitan area.

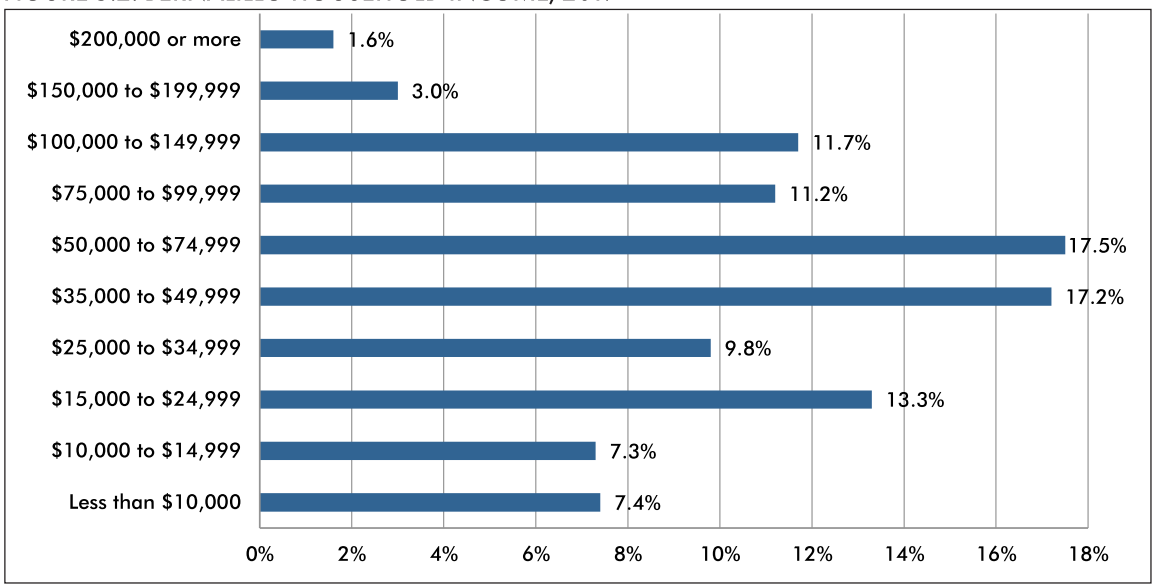
TABLE 5.4: UNEMPLOYMENT BY COUNTY

County	2010	2020
SANDOVAL COUNTY	8.1%	8.6%
Bernalillo County	7.4%	8.1%
Santa Fe County	6.5%	8.3%
New Mexico	7.8%	8.4%

Source: US Bureau of Labor Statistics, Local Area Unemployment Statistics.

Hyatt Regency Tamaya Resort.

FIGURE 5.2: BERNALILLO HOUSEHOLD INCOME, 2019



Source: ACS, 5-Year Estimates, 2015-2019.

INCOME

Median Household Income

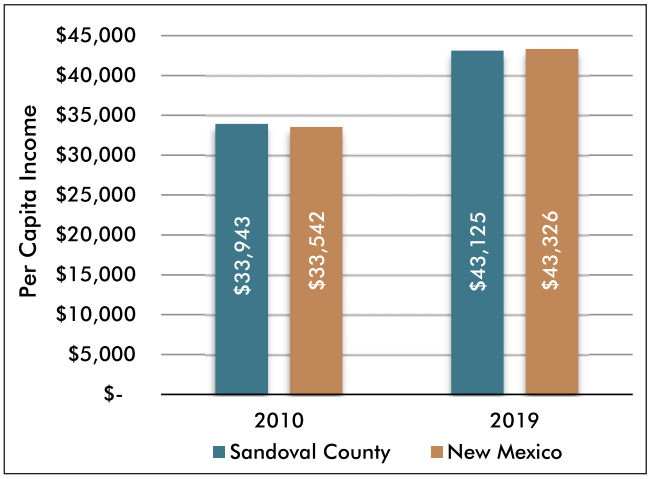
The median household income in Bernalillo increased between 2010 and 2019, yet is still lower than in New Mexico state-wide. In Bernalillo, the median household income rose from $39,167 in 2010 to $44,978 in 2019, a 14.8% increase. The largest share of households, 17.5%, realized a household income of $50,000 to $74,999 *(see Figure 5.2)*. The fastest growing category was households earning $200,000 or more, which increased from 0.2% to 1.6% of all households in Bernalillo.

In comparison, the median household income in New Mexico rose from $43,820 in 2010 to $49,754 in 2019, a 13.5% increase. Households earning $200,000 or more also increased the fastest state-wide, from 2.4% to 4.1% of all households.

Personal Income

According to the US Bureau of Economic Analysis, total personal income in Sandoval County increased from $4.5 billion in 2019 to $6.3 billion in 2019. The per capita income in Sandoval County increased from $33,943 in 2010 to $43,125 in 2019, a 27.1% change *(see Figure 5.3)*. This was relatively consistent with New Mexico where per capita income increased from $33,542 in 2010 to $43,326, a 29.2% change.

FIGURE 5.3: PER CAPITA INCOME



Source: US Bureau of Economic Analysis, 2019.

Average Wages

In 2019, the average weekly wage and annual average wages in Sandoval County were $835 and $43,418 respectively *(see Table 5.5)*. This was lower than the New Mexico average, which were $905 and $47,403, respectively. Average wages tend to be higher in other counties in the Albuquerque and Santa Fe metropolitan areas.

TABLE 5.5: AVERAGE WAGES

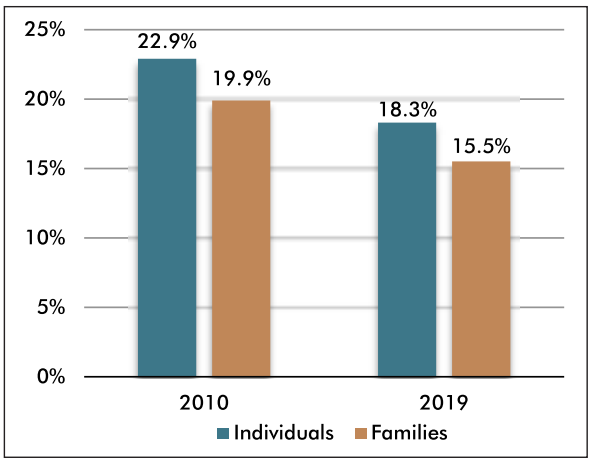
County	Weekly	Annual
SANDOVAL COUNTY	$835	$43,418
Bernalillo County	$945	$49,149
Santa Fe County	$877	$45,600
New Mexico	$905	$47,043

Source: US Bureau of Labor Statistics, Quarterly Census of Employment and Wages, 2019.

POVERTY LEVEL

According to the ACS, the share of all families in Bernalillo whose income was below the poverty line decreased from 19.9% to 15.5% between 2010 and 2019 *(see Table 5.4)*. In comparison, the New Mexico poverty rate rose slightly from 14% to 15% during the same time period. The poverty rate for individuals in Bernalillo also declined, but remained higher than for families, decreasing from 22.9% to 18.3% between 2010 and 2019. The New Mexico poverty rate for individuals increased from 18.4% in 2010 to 19.1% in 2019.

FIGURE 5.4: BERNALILLO POVERTY RATE



Source: US Bureau of Economic Analysis, 2019.

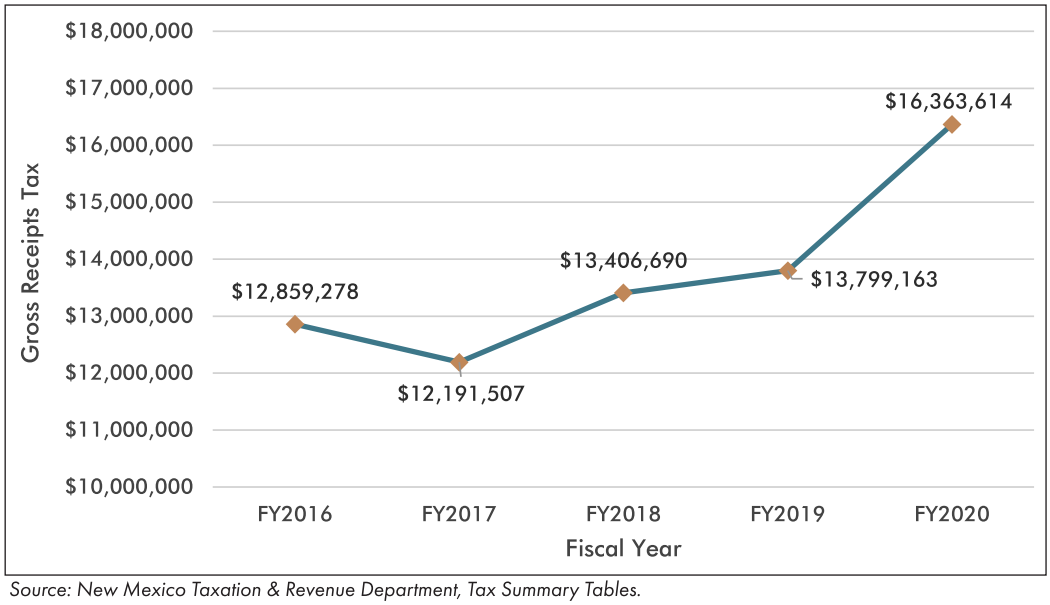
TAX REVENUES

Gross Receipts

Gross receipts have increased as Bernalillo has grown in population and business development. Taxable gross receipts - all revenue upon which the gross receipts tax is assessed - increased from $182 million in fiscal year 2016 to $227 million in fiscal year 2020. The Town of Bernalillo's gross receipts tax (GRT) revenue has likewise grown, from $12,859,278 in FY2016 to $16,363,614 in FY2020.

As of July 2021, Bernalillo's gross receipts tax rate was 7.1875%, consisting of the 5.125% New Mexico state tax and 2.0625% local tax. Grocery Stores generated the largest amount of gross receipts and GRT in Bernalillo, followed by Full-Service Restaurants and Specialty Trade Contractors.

FIGURE 5.5: BERNALILLO GROSS RECEIPTS TAX

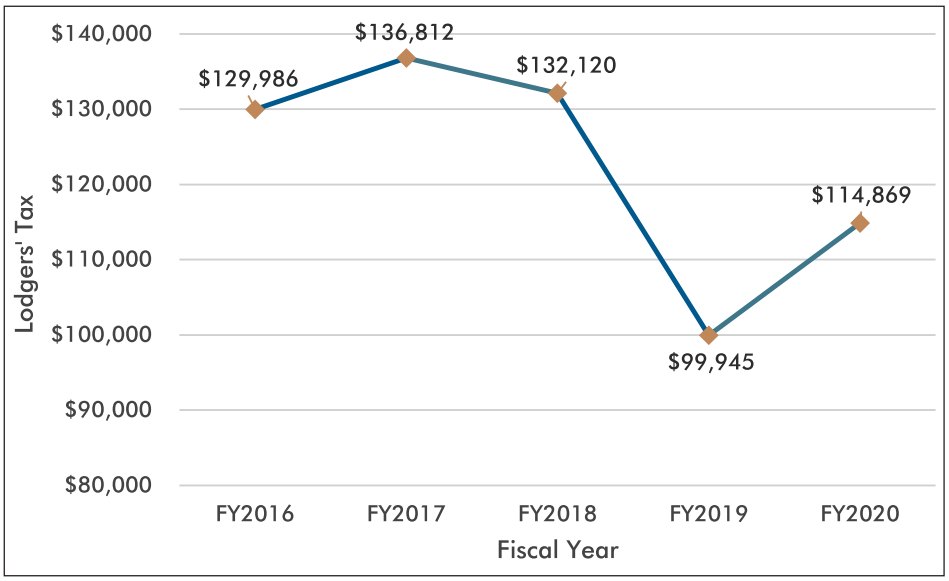


Source: New Mexico Taxation & Revenue Department, Tax Summary Tables.

Lodgers' Tax

The lodgers' tax rate in the Town of Bernalillo is 3%. As shown in Table 5.6, lodgers' tax revenue grew through FY2017, then contracted in FY2018 and FY2019 before rebounding to $114,869 in FY2020. There are several hotels and motels located near US 550 in Bernalillo.

FIGURE 5.6: BERNALILLO LODGERS' TAX



Source: Town of Bernalillo.

RETAIL MARKET ANALYSIS

A retail market analysis considers the supply and demand of retail goods and services in a geographic area. The analysis looks at the difference between supply and demand. Where there is a "surplus", it means there is more supply than demand and where there is a "gap", it means there is more demand than supply. When a retail industry has a surplus, it is drawing customers from other places to spend money in the community. When a retail industry has a gap, the community is experiencing leakage as local customers are shopping in other geographic locations.

The Claritas Retail Market Power database was used to analyze the retail market potential in Bernalillo. Claritas utilizes proprietary data sources, as well as the US Census of Retail Trade and Consumer Expenditure Surveys. In 2022, Bernalillo showed a retail surplus of $12,971,289 *(see Table 5.6)*. Bernalillo had a large surplus in General Merchandise Stores of $13,033,096, which can likely be attributed to sales at the Walmart Supercenter on NM 328. Bernalillo also had a large surplus in Gasoline Stations of $25,598,529 and Food Services & Drinking Places had a surplus of $6,414,237, with numerous retailers on US 550 and Camino del Pueblo serving local residents and travelers.

TABLE 5.6: RETAIL MARKET ANALYSIS, 2022

NAICS Categories	Supply (Retail Sales)	Demand (Retail Potential)	Retail Gap/Surplus
Motor Vehicle & Parts Dealers	$21,435,981	$29,532,825	-$8,096,844
Furniture & Home Furnishings Stores	$163,669	$2,503,990	-$2,340,321
Electronics & Appliance Stores	$242,785	$1,771,251	-$1,528,466
Building Materials, Garden Equipment & Supply Stores	$9,709,710	$10,421,579	-$711,868
Food & Beverage Stores	$18,952,826	$20,598,501	-$1,645,675
Health & Personal Care Stores	$13,174,886	$8,378,833	$4,796,053
Gasoline Stations	$36,692,760	$11,094,231	$25,598,529
Clothing & Clothing Accessories Stores	$200,664	$4,944,633	-$4,743,969
Sporting Goods, Hobby, Book & Music Stores	$260,208	$1,879,869	-$1,619,661
General Merchandise Stores	$30,509,822	$17,476,726	$13,033,096
Miscellaneous Store Retailers	$3,271,736	$2,874,957	$396,779
Nonstore Retailers	$6,705,350	$23,285,950	-$16,580,601
Food Services & Drinking Places	$21,374,062	$14,959,826	$6,414,237
Total Retail Trade, Food and Drink	**$162,694,460**	**$149,723,171**	**$12,971,289**

Source: Claritas Retail Market Power 2022

The largest retail gap in Bernalillo was $16,580,601 in Nonstore Retailers (online sales and vending), which is typical for online shopping served by national retailers. There was a gap of $8,096,844 in Motor Vehicle & Parts, a gap of $4,743,969 in Clothing Stores, and a gap of $2,340,321 in Furniture Stores. These gaps are typical where industry consolidation requires local residents to travel outside the community to purchase these retail goods and services.

A majority of the respondents to the Community Survey (53%) disagreed or strongly disagreed with the question of whether there are adequate commercial retail and services available in Bernalillo. The respondents expressed the greatest support for adding new restaurants (66%), and arts and entertainment venues (60%). The majority stated that they go to Albuquerque (84%) or Rio Rancho (71%) when Bernalillo stores do not have what they need.

AGRICULTURE

Agriculture plays an important role in Bernalillo and Sandoval County. According to the USDA Census of Agriculture, which tracks agriculture metrics by county, Sandoval County had $12,372,000 in the total market value of agricultural products sold, an increase of 16.9% between 2012 and 2017 *(see Table 5.7)*. The average market value per farm increased at a greater rate, 19.4%, while the number of farms in Sandoval County decreased by 2.1%.

Most of the farms in Sandoval County are small, with a median size of 12 acres, and grow specialty crops or sell directly to consumers, such as at farmers' markets. Between 2012 and 2017, the value of food sold directly to consumers in Sandoval County grew from $106,000 to $913,000, an increase of 76.1%.

In 2017, the USDA began to track the value of food products sold directly to retail markets and sales of value-added agricultural products. Agricultural products produced in Sandoval County sold directly to retail markets, such as grocery stores, restaurants, or schools, totaled $509,000. Value-added products, such as fruit jam and salsa, sales totaled $848,000.

In 2017, Sandoval County ranked 2nd in New Mexico for sales by nurseries and sod farms, 4th for cultivated Christmas trees, and 8th for poultry and eggs. The top crops by acreage in Sandoval County were hay, apples, vegetables, and grapes. In 2017, Sandoval County had the 3rd largest acreage in vineyards, behind Bernalillo and Doña Ana counties. Small-scale wineries provide another value-added segment of the agricultural industry that support wine sales across the country, bringing new income into the community.

TABLE 5.7: SANDOVAL COUNTY AGRICULTURE PROFILE

	2012	2017	% Change
Farms	1,029	1,007	-2.1%
Land in Farms (acres)	950,133	783,724	-17.5%
Average size (acres)	923	778	-15.7%
Median size (acres)	13	12	-7.7%
Market Value			
Total Market Value of Products Sold	$10,586,000	$12,372,000	16.9%
Government Payments	$815,000	$487,000	-40.2%
Farm-related Income	$822,000	$1,166,000	41.8%
Total Farm Production Expenses	$13,354,000	$14,541,000	8.9%
Net Cash Farm Income	-$1,132,000	-$517,000	-54.3%
Per Farm Average			
Market Value of Products Sold	$10,287	$12,286	19.4%
Government Payments Received (average per farm receiving)	$7,913	$11,876	50.1%
Farm-Related Income	$7,207	$13,875	92.5%
Total Farm Production Expenses	$12,978	$14,440	11.3%
Net Cash Farm Income	-$1,100	-$513	-53.4%

Source: USDA Census of Agriculture.

5.3 ORGANIZATIONS and INITIATIVES

There are a number of organizations at the local, county, and state levels actively pursuing economic development in Bernalillo. While these groups mostly focus on expanding basic industries, growing employment and income, most also work towards improving the overall quality of life for residents. When participants in the Community Survey were asked about the areas of economic development that Bernalillo should focus on expanding, the most common responses included:

- Restaurants (61%)
- Outdoor recreation (59%)
- Cultural tourism (44%)
- Health care services (44%)
- Commercial retail and services (42%)

BERNALILLO ECONOMIC and COMMUNITY DEVELOPMENT DEPARTMENT

The Bernalillo Economic and Community Development Department works with local residents and business owners to expand economic opportunity and diversify the local economy. Staff members facilitate applications for small business assistance, maintain an inventory of local businesses, and coordinate community events. They also work with economic development organizations to take full advantage of available economic development programs. Bernalillo has a long tradition of small-scale agriculture and manufacturing, while newer opportunities, such as tourism and professional services, have been growing.

Local Economic Development Act (LEDA)

The Bernalillo Economic and Community Development Department manages the Town's Local Economic Development Act (LEDA) program. The Town Council adopted Ordinance No. 296 implementing the LEDA program on May 22, 2017. Adoption and implementation of a LEDA ordinance allows public funding support for economic development projects in compliance with the New Mexico Constitution's anti-donation clause.

A LEDA ordinance provides the ability to assist qualified firms with infrastructure, site improvements, and job creation. Qualifying entities under the state legislation include manufacturing, warehousing, and other economic base employer firms eligible for the New Mexico Job Training Incentive Program (JTIP). Retail businesses are also considered qualifying entities in municipalities of less than 15,000, including Bernalillo. Bernalillo's LEDA ordinance also permits the Town to engage in regional economic development projects utilizing a joint powers agreement.

The Local Economic Development Plan is intended to guide implementation of the LEDA program. Goals of the Local Economic Development Plan include:

- Retain and Expand Existing Businesses;
- Recruit Diverse New Businesses to Bernalillo;
- Promote Bernalillo as a Great Place to Visit, Do Business and Live;
- Encourage Main Street Redevelopment;
- Upgrade Infrastructure to Encourage Economic Development;
- Leverage Town-owned Properties for Economic Development; and
- Improve Resident Incomes and Job Opportunities.

The Local Economic Development Plan included an industry cluster analysis that identified traditional base industries as manufacturing, wholesale trade, and transportation, in addition to local government employment in Sandoval County. The analysis also examined growth in accommodation and food services, and other services such as equipment and machinery repair. Five target industries were selected based on local specialization, local demand, or a match with resident skills, including:

- Manufacturing;
- Healthcare & Social Assistance;
- Professional Services;
- Retail; and
- Arts, Film, Entertainment, and Culture.

In order to ensure the LEDA ordinance and Economic Development Plan remains relevant and reflects the current needs of the community, the Town of Bernalillo should complete a comprehensive review and update, as necessary, on a 5-year basis. The New Mexico Economic Development Department can provide technical assistance when it is determined that an update is in order.

The New Mexico Legislature has amended the state enabling legislation in recent years as follows:

- **2017:** An amendment that specifically added broadband telecommunications network facilities to permitted economic development projects.
- **2019:** An amendment that excluded the acquisition of water rights from permissible uses of LEDA funds.
- **2020:** A definition was added for "economic base jobs" that allows projects to be sorted into economic base employment, rural retail, and rural site infrastructure.
- **2021:** Definition of a "retail business" was amended to provide more flexibility to municipalities; other definitions were amended; and a COVID recovery grant program was created.

GROSS RECEIPTS INVESTMENT PROGRAM

In August 2016, the Town Council adopted the Gross Receipts Investment Policy (GRIP) Ordinance, creating a policy covering expenditure of funds on infrastructure development related to economic development projects. The program is a tool that enables the Town to return tax revenue received from a new business to cover costs of building water lines, sewer lines, or roadway improvements. The Town has made the program available but has not used this option for any new projects yet.

LODGERS' TAX ADVISORY BOARD

The Town of Bernalillo Lodgers' Occupancy Tax is authorized by Ordinance No. 116, which also establishes the five-member Bernalillo Lodgers' Tax Advisory Board. The Advisory Board, appointed by the Mayor, generally meets three times a year to consider responses to requests for proposal to expend Lodgers' Tax funds. Requests are considered for events held in Bernalillo, and can be used for the following:

- Advertising and promoting tourist facilities and activities through the design, production, and placement of media advertisement;
- Providing police and fire protection and/or sanitation services for tourist related events and attractions; and
- Establishing, operating, constructing, purchasing, otherwise acquiring, reconstructing, bettering, or otherwise improving, equipping, and furnishing tourism facilities owned by the Town of Bernalillo.

OPPORTUNITY ZONE

In 2018, the US Department of the Treasury designated 63 Opportunity Zones (OZs) in New Mexico. This economic development program provides tax advantages for certain types of private investment in economically distressed areas.

One of the two areas in Sandoval County designated as a Qualified Opportunity Zone (Census Tract 35043940500) is located in the south area of Bernalillo extending from near Rotary Park and the Rail Runner Express Downtown Bernalillo Station to the Pueblo of Sandia. This Census Tract includes commercial and industrial sites on Avenida Bernalillo, S. Camino del Pueblo, and the Bernalillo Industrial Park. The Opportunity Zone designation is set to extend for a minimum of 10 years.

FIGURE 5.7: OPPORTUNITY ZONE

Source: New Mexico Economic Development Department (NMEDD).

SANDOVAL COUNTY

Business Development Division

The Sandoval County Economic Development Department's Business Development Division supports economic development efforts throughout the County. In 2003, the Department secured a $1.4 million US Economic Development Administration grant

towards the cost to purchase and begin restoration of the historic 3.5 acre El Zócalo Plaza site on Camino del Pueblo, including the El Zócalo and Sandoval buildings in the Abenicio Salazar Historic District *(see Section 4.2 Community Character for more detail on El Zócalo Plaza and buildings)*.

Tourism Division

The Tourism Division of the Sandoval County Economic Development Department supports the regional tourism industry, including publication of an annual visitor's guide. The Division operates the Sandoval County Visitor's Center at El Zócalo Plaza on Camino del Pueblo. In a typical year, more than 10,000 people are served by the Visitor's Center, Monday through Saturday.

Sandoval Economic Alliance (sea-nm.com)

The Sandoval Economic Alliance (SEA) is a private non-for-profit membership organization established in 2014 to strengthen and diversify the economic base of Sandoval County. SEA works to attract private investment to each community in the county, including Bernalillo. SEA also assists existing businesses through a local retention and expansion program. SEA currently focuses on three target industry clusters, including Life Sciences; Professional Services and Support; and Advanced Technology and Manufacturing.

The Sandoval Economic Alliance recently initiated a nationally-certified Economic Gardening program, an entrepreneurial approach to economic development. The program, first developed in Littleton, Colorado and expanded nation-wide, provides sophisticated strategic research tools and management training to companies which have completed their start-up phase and are ready to focus on scaling up employment growth.

SMALL BUSINESS DEVELOPMENT CENTER

The New Mexico Small Business Development Center (SBDC) provides no-cost management consulting, small business training, and government procurement assistance across the state. Previously, there was an SBDC office at El Zócalo Plaza. The nearest SBDC office is located at Central New Mexico (CNM) Community College in Albuquerque.

NORTH CENTRAL NEW MEXICO ECONOMIC DEVELOPMENT DISTRICT

The North Central New Mexico Economic Development District (NCNM EDD) is an association of local governments that serves eight counties, including Sandoval County. The EDD works with local, state, and federal government partners to provide services in economic development, community services, and data sharing.

The NCNM Comprehensive Economic Development Strategy (CEDS) is a locally developed plan that provides coordination of local efforts. The CEDS is used by the US Economic Development Administration (EDA) to guide federal investments in local economic development, including grant and loan programs.

The 2021-2025 CEDS included a regional economic analysis, action plan, SWOT analysis, and goals and strategies for economic development, including Building on Existing Strengths; Go Big with Emerging Opportunities; and Enhance Regional Infrastructure and Partnerships.

During the CEDS update process, the Western Rural Development Center generated targeted industry cluster reports for each county in the region, with a Desirability Index and Compatibility Index weighted based on community survey results. For Sandoval County, the highest-rated target industries identified by four-digit NAICS codes included:

- Electric Power Generation, Transmission and Distribution;
- Sawmills and Wood Preservation;
- Veneer, Plywood and Engineered Product Manufacturing;
- Petroleum and Coal Products Manufacturing; and
- Resin, Synthetic Rubber, and Artificial and Synthetic Fibers and Filaments Manufacturing.

NEW MEXICO ECONOMIC DEVELOPMENT DEPARTMENT

The NMEDD offers a variety of programs to assist local economic development. Among these is the Job Training Incentive Program (JTIP), which funds classroom and on-the-job training for newly-created jobs in expanding or relocating businesses for up to 6 months. The program reimburses 50-75% of employee wages for up to

six months. Custom training at a New Mexico public educational institution may also be reimbursed.

Eligible businesses for JTIP funding include:

- Companies that manufacture or produce a product in New Mexico;
- Non-retail service companies that export a substantial percentage of services out of state; and
- Certain green industries.

The company must be financially sound and must be creating new jobs as a result of expansion or relocation to New Mexico. Businesses in certain industries, such as agriculture, construction, extractive industries, gambling, health care, and retail are not eligible for JTIP funds.

In 2021, AmfabSteel, a design-build structural steel fabricator located in the Bernalillo Industrial Park, received over $240,000 in funding to train 26 new employees with an average hourly wage of $21.04. The funding was used to support a third shift at its 30,000 square foot facility. This was the fourth-round of JTIP funding for the manufacturing firm.

5.4 COMMUNITY ASSETS and ATTRACTIONS

With a prime location at the junction of Interstate 25 and US 550, the Town of Bernalillo attracts a large amount of regional traffic. Local and regional attractions include both indoor venues and outdoor recreation destinations. A brief discussion of local and regional attractions follows below:

LOCAL ATTRACTIONS

Rio Grande Bosque

The Rio Grande Bosque is a treasured asset of Bernalillo residents. The most convenient public access point is the daily use parking area at the Coronado Campground. The Middle Rio Grande Conservancy District levee east of the Rio Grande, above and below the US 550 bridge, provides limited public access.

North of Bernalillo, the Pueblo of Santa Ana has invested in the restoration of the riparian and riverine ecosystems along the Rio Grande. Restoration efforts are intended to restore the river channel, active floodplain, and the historic floodplain. The Pueblo has undertaken projects with state and federal partners, including:

- Creating over 100-acres of riparian wetland habitat;
- Restoring 6-miles of the river channel of the Rio Grande;
- Restoring 1,300-acres of cottonwood bosque by clearing non-native salt cedar and Russian olive;
- Restoring native wildlife habitat throughout the Rio Grande Bosque.

Coronado Historic Site

The Coronado Historic Site and the ruins of Kuaua Pueblo are located on the west back of the Rio Grande in the Town of Bernalillo. The Coronado Historic Site preserves the site of the Pueblo of Kuaua, settled around 1300 A.D., that became home to approximately 1,200 people. The Pueblo was the northernmost of twelve Tiwa villages in 1540-1542 when Vasquez de Coronado camped in the vicinity while searching for the fabled Seven Cities of Gold. The Pueblo of Kuaua was abandoned following the Pueblo Revolt of 1680. The site was designated New Mexico's first State Monument in 1935.

Archaeologists from the Museum of New Mexico excavated the Pueblo structures in the 1930s, including a square kiva, or ceremonial chamber, containing layers of murals on the walls. The excavation was reburied for preservation and replica adobe walls built to represent the site. Samples of the murals are on display

Rio Grande Bosque.

at the Visitors' Center designed by noted southwest architect, John Gaw Meem, and opened in 1940.

Ladder into the kiva at Coronado Historic Site. Source: NM Department of Cultural Affairs.

The Coronado Historic Site also offers ramada-covered picnic tables with views of the Rio Grande and Sandia Mountains, and is a popular site for bird watchers. The site is part of the Museum of New Mexico system managed by the New Mexico Department of Cultural Affairs.

Coronado Campground

The Town of Bernalillo's Coronado Campground is located next to the Coronado Historic Site on the Rio Grande. The Campground offers 23 developed recreational vehicle sites and a rustic tent camping area for overnight visitors. The Campground also has day use parking and an RV dump station available.

Destination Dining

As noted previously in the Retail Market Analysis, in 2017, retail sales in Food Services and Drinking Places in Bernalillo totaled $25.5 million *(see Section 5.2)*. Some food services sales can be attributed to pass-through traffic on Interstate 25 and US 550. However, there are several destination restaurants and drinking places in the Bernalillo. The Trip Advisors website gave high ratings to several restaurants in August 2021, including:

- The Range Café on Camino del Pueblo;
- Kaktus Brewing Company on S. Hill Road;
- Corn Maiden restaurant at Hyatt Regency Tamaya Resort;
- Abuelita's New Mexican Kitchen on Camino del Pueblo;
- Prairie Star Restaurant & Wine Bar at the Santa Ana Golf Club;
- Bosque North Brewery and Taproom on US 550; and
- Lupe's Antojitos near the intersection of Camino del Pueblo and Highway 550.

Coronado Historic Site.

Bosque North Brewery and Taproom.

REGIONAL ATTRACTIONS

Santa Ana Star Casino Hotel

The Pueblo of Santa Ana developed the Santa Ana Star Casino Hotel in 1993. The Casino is located on US 550 and features over 100,000 square feet of gaming, entertainment, bowling, meeting space, and restaurants. The Hotel expanded in 2018 with 204 rooms in the nine-story building. Before the COVID-19 pandemic, the Santa Ana Star Casino Shuttle met commuter rail trains at the Sandoval County/US 550 Station.

The Santa Ana Golf Club features a 27-hole championship links-style golf course located adjacent to the Santa Ana Star Casino Hotel. The Golf Club includes a full-service pro shop, practice facilities, and other amenities.

Santa Ana Star Casino Hotel.

Hyatt Regency Tamaya Resort and Spa

The Pueblo of Santa Ana also developed the Hyatt Regency Tamaya Resort and Spa. The 4-star hotel offers 350 guestrooms and a variety of dining facilities. The Stables at Tamaya and the Tamaya Horse Rescue program provide trail rides, rodeos, and other equestrian events.

The Twin Warriors Golf Club, located just north of the Tamaya Resort and Spa, has an 18-hole high desert golf course routed in and around 20 ancient cultural sites. Amenities include a pro shop with a bar and grill.

Sandia Resort and Casino

The Pueblo of Sandia owns and operates the 228-room Sandia Resort and Casino. The Casino first opened in 1994, and the 228-room seven-story Hotel was added in 2005 and expanded in 2014. A new wing was added during the COVID-19 pandemic with an expanded gaming area and sports bar joining the existing restaurants, spa, and convention space on site.

The Sandia Golf Club, an amenity of the Sandia Resort and Casino, features an 18-hole championship golf course. The facility includes practice areas, a clubhouse, and pro shop, with a full-service restaurant and events center.

New Mexico Soccer Tournament Complex

The New Mexico Soccer Tournament Complex, often referred to as the Bernalillo Soccer Complex, is located at Tamaya Boulevard north of US 550 on the Pueblo of Santa Ana. The facility is leased by Sandoval County and managed by Southwest Youth Soccer in partnership with local soccer leagues. The complex provides game fields for metro area adult and youth leagues during the spring and autumn, and attracts soccer tournaments throughout the year. The site provides 22 soccer fields, including two lighted championship fields, each with a 2,000-seat capacity.

El Camino Real de Tierra Adentro National Historic Trail

The Royal Road of the Interior Land, known in Spanish as El Camino Real, connected Santa Fe and New Mexico with the capital of the Viceroyalty of New Spain at Mexico City during the Spanish colonial era. El Camino Real de Tierra Adentro National Historic Trail traces this important trade route through modern-day New Mexico and Texas. The National Historic Trail was designated on October 13, 2000, including a section along Camino del Pueblo in Bernalillo.

5.5 ECONOMIC OPPORTUNITIES

Bernalillo's traditional economic base industries of manufacturing, wholesale trade, and transportation are transforming as they mature, with more automation and less employment. Newer, smaller firms have emerged in niche sectors of these industries, including metal products, steel fabrication, and specialty construction products. New opportunities are also emerging in the arts, local foods and agriculture, and remote work.

ARTS and ARTISAN ENTERPRISE

There is an active and growing arts and artisan community in Bernalillo and surrounding areas. There are several art galleries located in Bernalillo, Pueblo of Santa Ana, Placitas, and Algodones. The Bernalillo Indian Arts Festival, which takes place at Loretto Park, attracted 200 artists and vendors in July 2021.

Arts and cultural enterprises have played a large role in New Mexico's economy for many years, and representing approximately 2.8% of the state's gross domestic product in 2019, as reported by the US Bureau of Economic Analysis. According to the University of New Mexico's Bureau of Business & Economic Research (BBER), combined with cultural tourism and heritage, these industries provide about 10% of all jobs in New Mexico (Source: Building on the Past, Facing the Future: Renewing the Creative Economy of New Mexico, 2014).

There are a variety of industries and occupations in the arts and cultural sectors. New Mexico has experienced growth in the number of independent artists, and those employed in arts and cultural goods production, as well as arts-related trade, cultural tourism, and intellectual property distribution. Arts and cultural industries also include museums, libraries, parks, and monuments serving both local residents and tourists.

BBER's analysis found there were more people employed in Creative Artist, Visual Artist, and Artisan occupations in Sandoval County than the New Mexico average. Creative artists include writers, authors, entertainers, and performers. Visual artists include craft and fine art producers, designers, and

photographers. Artisans include a wide variety of occupations, including jewelers, bakers, tailors, woodworkers, and engravers.

New Mexico Arts, a division of the Department of Cultural Affairs, provides support for arts services and programs statewide. Among several funding programs, New Mexico Arts supports economic and entrepreneurial development projects and partnerships, including arts-based cultural tourism and economic opportunities and training for artists. Eligible applicants must be 501(c)3 organizations and may include partnerships with government entities, Indian tribal governments, or for-profit entities.

The history of the Bernalillo community includes arts and cultural traditions from the Pueblo, Spanish, and Anglo cultures of New Mexico. The Local Economic Development Plan identified the "arts, film, entertainment, and culture" as a target industry and encouraged new enterprises, including art galleries, creative artist workshops, and film production in Bernalillo. The Local Economic Development Plan also included an action item to recruit creative non-profit organizations and to market Bernalillo as a film location given its proximity to film studios in Albuquerque and Rio Rancho.

FILM PRODUCTION

Film production is a lucrative and significant industry in New Mexico. According to the New Mexico Film Office, there were 73 projects, $624.8 million in direct spending, and 532,450 worker days in FY2021. While the metrics show a decrease in the number of projects since 2019, the direct spending and worker days has never been higher. According to surveys by the Garrity Group, the film industry has a 70% favorability rating across New Mexico.

The New Mexico Film Office maintains a database of 55 film locations in and close to Bernalillo, such as the historic El Zócalo Plaza, Our Lady of Sorrows Church, Camino del Pueblo, Coronado State Monument, area farms, and numerous other buildings. The Bernalillo Economic and Community Development Department serves as a film liaison, assisting film producers with local site selection and permitting requirements.

SMALL-SCALE MANUFACTURING

Manufacturing and exported services provide primary sector jobs and create new wealth in a community. Small-scale manufacturing, light industry, and professional services involve businesses that operate with a small number of employees and utilize local materials, which strengthens the local supply chain and reinvests in the community. The Bernalillo Local Economic Development Plan identifies manufacturing as a target industry and encourages expansion of smaller-scale light industry and food processing in the community.

Bernalillo has a strong history in manufacturing and many residents are skilled as machinists, welders, and other trades. Small-scale manufacturers and exported services in creative industries can be ideally suited for and add to redevelopment efforts of commercial corridors such as Camino del Pueblo. These enterprises can utilize spaces that are not ideal for traditional retail, or occupy vacant and underutilized commercial spaces with established infrastructure in place. Reliable broadband service can be particularly important for design, production, and sales activities.

The types of small-scale manufacturing and services may include:

- **Artisan:** outdoor recreation goods, jewelry, food production, pottery, textiles, brewery, distillery, bakery, guides, writers, etc.
- **Small batch production:** 3-D printing, architecture and design, components for larger machinery, herbal remedies, body supplies, etc.
- **Scaling:** businesses that start small and plan to grow into larger spaces or locations.

LOCAL FOODS and VALUE-ADDED AGRICULTURE

From its earliest days, Bernalillo provided a market for the crops grown on farms along the Rio Grande valley. Irrigated alfalfa fields and horse pastures can still be found along the acequias, along with large gardens with vegetables grown for local restaurants and farmers' markets. The Bernalillo Farmers' Market takes place weekly from June through October at Rotary Park, with fresh produce, jams, jellies, eggs, bread, and other products for sale.

The New Mexico Economic Development Department (NMEDD) and the New Mexico Partnership have identified sustainable and value-added agriculture as a key industry for New Mexico. A value-added economic development approach focuses on processing commodities before they are shipped out of the region. These may be commodities already in production or that could be added to diversify the local economy. Organic produce is another area that NMEDD and the New Mexico Department of Agriculture can provide technical assistance.

The Bureau of Business & Economic Research (BBER) studied heritage and craft industries, along with arts and cultural industries, including acequia-based agriculture production. Small, acequia irrigated fields provide an opportunity for Bernalillo residents to plant market gardens. The New Mexico Acequia

Association is a resource for local groups working to protect water, provide resources to grow healthy food, and honor the state's cultural heritage.

Farm-to-Table

Local restaurant owners have expressed an interest in building "farm-to-table" supply chains with local agricultural producers. A growing segment of consumers is showing interest in knowing where their food comes from. This type of local food system connects small-scale growers with local restaurants and farmers' markets to supply produce in season, often using organic management practices.

The USDA Economic Research Service has reported a heightened demand for locally grown organic products sold at a premium price. Local wineries and breweries are also typically part of this supply chain. The non-profit, Santa Fe-based organization, Farm to Table, is a good resource to improve communities' access to nutritious, affordable, locally-grown, culturally-significant foods. This approach also builds on Bernalillo's attraction as a destination for dining and can be expanded to encourage locally-grown foods in Bernalillo public schools.

Community commercial kitchens are fully equipped and approved by health authorities to produce food products for sale to the public. "Ghost kitchens" are a similar use of a shared commercial kitchen where restaurateurs can prepare food for delivery and catering without the overhead of a storefront location. A successful model operating in the region includes the South Valley Economic Development Center, which provides a commercial kitchen as part of its Food Industry Incubation Program.

REMOTE WORK

With increased digitalization and growth in creative industries, many jobs can be undertaken any place with a reliable broadband connection. According to the American Community Survey, the same share of workers in Bernalillo worked from home in 2019 as New Mexico as a whole, 4.9% (*see Section 9.5 for more information on broadband service in Bernalillo).*

Many employers have become more flexible with remote-work options to retain professional employees who would rather work at home or in flexible co-working sites in smaller communities like Bernalillo. The Local Economic Development Plan identifies professional services and home-based businesses as a target industry.

REDESIGNATION AS A MAINSTREET COMMUNITY

MainStreet is a revitalization program for downtown areas developed by the National Trust for Historic Preservation. The organization's services are built around transformation strategies and the four-point approach of Economic Vitality, Design, Promotion, and Organization. New Mexico MainStreet (NMMS) is a program of the New Mexico Economic Development Department.

Consideration should be given by the Town of Bernalillo to redesignate itself as a MainStreet community. A MainStreet program would be the primary conduit to Downtown business owners, a role that is currently missing. Some of the responsibilities of and opportunities a MainStreet organization in Bernalillo would provide include:

- Facilitating and maintaining an on-going dialogue with business owners regarding their needs and priorities, and providing information on tax incentives, grant and loan programs, and investor groups.
- Developing a building and business inventory to help stabilize the Camino del Pueblo/Downtown business district and assist business owners with expanding or relocating to other available buildings or properties within the district.
- Encouraging new businesses that will help diversify the types of businesses. New businesses could include restaurants, cafes, outdoor recreation equipment, small-scale manufacturing, motels, etc.
- On-going training for the MainStreet executive director and the MainStreet Board, and coordination with NMMS.
- Working with the Town on the development of an alternative building code that would provide flexibility for restoration of historic buildings.
- Following and advancing the Main Street Four-Point Approach® of Economic Vitality, Design, Promotion, and Organization.

5.6 GOALS, OBJECTIVES, & STRATEGIES

ECONOMIC DEVELOPMENT GOAL 1

Pursue a diversified and resilient economy that strengthens the community's economic base.

Objectives

- *To foster entrepreneurial activity and new business start-ups.*
- *To position Bernalillo for new target industry growth and relocation by leveraging Bernalillo's designated Opportunity Zone.*
- *To stem the retail market leakage and capture a greater share of consumer expenditures.*

Economic Development Strategy 1.1

Promote Bernalillo as a business-friendly community with strong quality of life assets, amenities, and opportunities including:

- Historic Downtown/Main Street area (Camino del Pueblo corridor);
- Access to the Rio Grande Bosque;
- Excellent access to multi-modal transportation systems including Interstate 25, US 550, NM 528, New Mexico Rail Runner Express, and off-street trails;
- Proximity to major metropolitan area;
- Designated Opportunity Zone;
- Moderate cost of living;
- Potential LEDA funding for qualifying businesses; and
- Potential workforce training grants, tax abatements, and tax credits for redevelopment.

Economic Development Strategy 1.2

Promote the Bernalillo Industrial Park and other industrial zoned and vacant land along Hill Road and NM 528 to businesses involved in manufacturing, wood and construction products and materials, warehousing, and distribution.

Economic Development Strategy 1.3

Coordinate and participate with the local business community and economic development organizations, including the Bernalillo Economic Development Department, Sandoval County Economic Development Department, Sandoval Economic Alliance, and the New Mexico Economic Development Department on local and regional economic development initiatives.

Economic Development Strategy 1.4

Develop an annual business recognition program for those businesses that have demonstrated:

- Outstanding business achievement as evidenced by growth in sales, employees, or new markets entered;
- Commitment to the community through contributions or service to a civic group, volunteer program, or non-profit organization; or
- Establishment and creativity of a new business.

Economic Development Strategy 1.5

Provide regular updates on the Town of Bernalillo's economic development efforts and accomplishments on the Town's website and social media page.

ECONOMIC DEVELOPMENT GOAL 2

Support small business development, expansion, and retention.

Objectives

- *To expand business and employment opportunities for Bernalillo residents.*
- *To maintain Bernalillo's small-town character and home-grown businesses.*
- *To strengthen the vitality and charm of Camino del Pueblo and Downtown Bernalillo.*
- *To facilitate the growth of arts and artisan enterprises, small-scale manufacturing, and value-added agriculture.*

Economic Development Strategy 2.1

Complete a feasibility study for developing a small business incubator that supports locally grown, created, or manufactured products and services.

Economic Development Strategy 2.2

In consultation with New Mexico MainStreet, pursue the recertification of Bernalillo as a MainStreet community so that the Town and business owners can reap the benefits of this program through ongoing training and education, technical assistance, and enhanced access to public infrastructure funds and other financial resources.

As part of this strategy, establish a MainStreet board comprised of business owners, real estate professionals, and other interested parties; and identify an Executive Director, with assistance from New Mexico MainStreet.

Economic Development Strategy 2.3

Incorporate small-scale manufacturing into the Zoning Code as a conditional use in the C-1 Zone that requires review and approval by the Town Planning and Zoning Commission to ensure the use will not be harmful to adjacent properties or redevelopment efforts.

Economic Development Strategy 2.4

Promote the services offered by the Small Business Development Center at Central New Mexico Community College to existing and potential small business owners in Bernalillo.

Economic Development Strategy 2.5

Work with banks and economic development organizations on expanding small business access to capital through a revolving loan fund.

ECONOMIC DEVELOPMENT GOAL 3

Strengthen and promote Bernalillo's outdoor recreation and tourism assets.

Objectives

- *To support outdoor recreation activities (i.e. rafting, walking, biking) along the Rio Grande and Bosque.*
- *To recognize the unique historic and cultural resources within or adjacent to Bernalillo, including Camino del Pueblo, Coronado Historic Site, Coronado Campground, El Camino Real de Tierra Adentro National Historic Trail, and the Pueblos of Santa Ana and Sandia.*
- *To capture more tourism revenue from travelers along Interstate 25 and the US 550 regional corridor.*
- *To encourage the expansion of tourism-related businesses, including restaurants, hotels, and outdoor recreation services.*

Economic Development Strategy 3.1

Develop a targeted marketing campaign that highlights Bernalillo's historic resources, including Camino del Pueblo, Coronado Historic Site, Coronado Campground, and El Camino Real de Tierra Adentro National Historic Trail; Pueblos of Santa Ana and Sandia; and local and regional outdoor recreation assets including the Rio Grande and the Bosque. As part of this strategy, determine the markets in New Mexico that should be targeted and advertise in online publications and social media.

Economic Development Strategy 3.2

Promote Bernalillo as a community with an unmet demand for the development of new restaurants, retail, outdoor adventures and recreation, and hospitality uses. As part of this strategy, actively pursue collaboration between the Bernalillo Economic Development Department, Sandoval County Business Development Division and Tourism Division, Sandoval Economic Alliance, and the New Mexico Outdoor Recreation Division on identifying and working with potential developers of tourism and outdoor recreation related businesses.

Economic Development Strategy 3.3

Allocate a portion of lodgers' tax revenues towards marketing Bernalillo as a destination for arts and culture and outdoor recreation attractions and opportunities.

ECONOMIC DEVELOPMENT GOAL 4

Create a well-trained workforce that meets the needs of existing and future employers.

Objectives

- *To ensure Bernalillo residents are adequately trained for new employment opportunities in target industries (i.e manufacturing; healthcare and social sciences; professional services; retail; and arts, film, entertainment, and culture).*
- *To help Bernalillo households achieve economic prosperity by raising the median household income.*

Economic Development Strategy 4.1

Participate in discussions and initiatives with local businesses and Bernalillo Public Schools, Central

New Mexico Community College, and the University of New Mexico West on developing and expanding workforce training and educational programs related to existing and future business clusters, including film production, photovoltaics and renewable energy technology, healthcare and social sciences, communication, culinary arts, visual arts, etc.

Economic Development Strategy 4.2
Support and promote the online classes and continuing education programs offered by New Mexico colleges and universities.

Economic Development Strategy 4.3
Work with employers in Bernalillo on seeking workforce investment funding (Job Training Incentive Program - JTIP) from the New Mexico Economic Development Department.

Economic Development Strategy 4.4
Sponsor and promote job expos that focus on STEM technologies, including life sciences, engineering, computer programing, natural sciences, etc., to encourage Bernalillo's young adults to enter these fields.

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CHAPTER 6
TRANSPORTATION

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6.1 INTRODUCTION

The Town of Bernalillo was established as a service center on the historic El Camino Real, the Royal Road serving travelers on the north-south trade route along the Rio Grande. The Santa Fe Railway tracks were built through the community in 1880. Through the years, El Camino Real, historic Route 66, and US 85 were replaced by Interstate 25. More recently, the old NM 44 to the Four Corners region was upgraded to become the four-lane US 550.

The Transportation element contains a description of Bernalillo's existing street network and conditions, including the rail, transit, pedestrian, and bicycle networks. Together, these transportation components provide residents with a multi-modal transportation system that few other small towns match. This chapter seeks to link transportation to land use and future growth patterns to ensure residents can get to where they want to go with relative ease.

6.2 MOBILITY CHARACTERISTICS

In 2019, 92.3% of Bernalillo residents responding to the American Community Survey (ACS) stated they commute to work by car, truck, or van. Of these, 79.5% drove alone and 12.9% carpooled. Approximately 5% of residents worked at home and 1.1% walked to work. Even with two Rail Runner Express commuter rail stations, only 0.1% of residents replied that they commute by public transportation, down from 1.2% in 2010. Most residents (65.5%) worked outside of Bernalillo, with 40.9% of those working outside of Sandoval County. The mean travel time to work was 24.5 minutes in 2019, 25% higher than 2010, and above the New Mexico travel time of 22 minutes.

Community Perspectives

Respondents to the Community Survey indicated their support for improvements to transportation infrastructure and facilities. Among ten options for transportation and infrastructure improvements, streetscapes and landscaping was the most common choice (58%), followed by street maintenance (55%), and expansion of storm drainage (54%). Among nine options for improvements to Town facilities, 61% of respondents chose improved or expanded landscaping and street trees and 54% chose multi-use trails.

6.3 STREET NETWORK

The Town of Bernalillo is a member of the Mid-Region Council of Governments (MRCOG) and the Mid-Region Metropolitan Planning Organization (MRMPO), which work with New Mexico Department of Transportation (NMDOT) on long-range multi-modal transportation planning in the Albuquerque metropolitan area. The MRMPO's planning process is documented in a Metropolitan Transportation Plan (MTP), which considers the region's transportation needs over the next 20 years. During the MTP planning process, MRMPO developed a target scenario encouraging job growth on the west side of the Rio Grande to help achieve a jobs-housing balance (*see Section 6.8, Capital Improvements*).

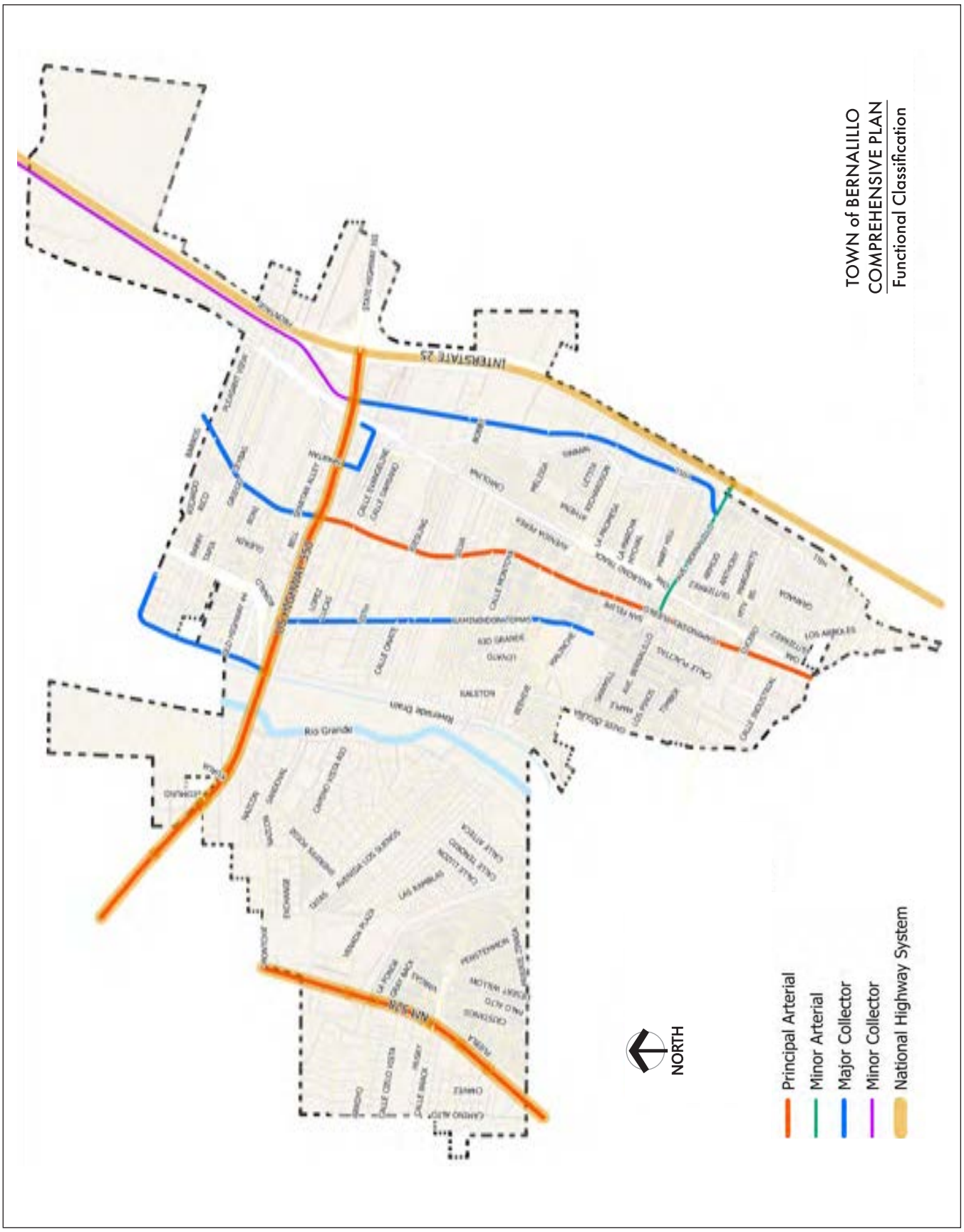
FUNCTIONAL CLASSIFICATION

The US Federal Highway Administration (FHWA) sets standards for functional classification of streets and roads in the FHWA Highway Functional Classification Concepts, Criteria and Procedures Manual (2013). The NMDOT implements those standards in the NMDOT Functional Classification Guidance Manual (2013) to determine eligibility for funding under Federal Aid Highway programs, and uses functional classification for program and project prioritization, asset management, safety programs, highway and bridge design, traffic control, and maintenance scheduling. Functional classification also provides a guide for local and regional engineering and traffic management.

Interstate

The Interstate Highway System is the highest class of arterial roadway, with limited access, higher speed limits, and higher vehicle miles traveled.

- **Interstate 25:** Runs from Interstate 90 at Buffalo, Wyoming, to Las Cruces, New Mexico, where it ends at Interstate 10. Interstate 25 carries a significant amount of local and regional passenger and commercial traffic. There are two interchanges in Bernalillo; Exit 240 at Avenida


TOWN of BERNALILLO
COMPREHENSIVE PLAN
Functional Classification
INTERSTATE 25
Rio Grande
NORTH
Principal Arterial
Minor Arterial
Major Collector
Minor Collector
National Highway System

Bernalillo (NM 473) and Exit 242 at US 550 west/NM 165 east.

Principal Arterial

Principal Arterials serve as the major roadway system connecting major population centers with higher traffic volumes and often have limited access. Principal Arterials in Bernalillo include:

- **US 550:** Begins at Interstate 25 and heads west to Aztec, New Mexico, and western Colorado;
- **NM 313:** Known as Camino del Pueblo in Bernalillo, NM 313 follows the old route of US 85 parallel to the Rio Grande from Albuquerque and the Pueblo of Sandia to Algodones; and
- **NM 528:** Runs south from US 550 to Rio Rancho, the Alameda bridge in Albuquerque, and Exit 233 at Interstate 25.

Minor Arterial

Minor Arterials serve as secondary major routes that are typically used for trips of moderate length, connecting to Principal Arterials. Minor Arterials generally have lower posted speed limits and less traffic.

- **NM 473:** Known as East Avenida Bernalillo, connects Interstate 25 to Camino del Pueblo; and
- **Idalia Road:** Begins at NM 528 and runs west along the municipal limits at the Sandoval County complex.

Major Collector

Major Collectors connect larger traffic generators to the arterial network, with a lower speed limit than arterial roads, but carry more traffic than Minor Collectors and local streets. Generally, Major Collectors are longer routes spaced at greater intervals than Minor Collectors.

- **Camino Don Tomas:** Between US 550 and NM 313;
- **South Hill Road:** From US 550 to NM 473, functioning as a type of backage road for Interstate 25;
- **NM 165:** Begins at Interstate 25 and runs east to Placitas and Sandia Peak;
- **NM 313:** Camino del Pueblo, north of US 550; and
- **Santa Ana/Ranchitos Road:** North of US 550 on the east side of the Rio Grande, this road has been closed by the Pueblo of Santa Ana at the municipal boundary.

Minor Collector

Minor Collectors typically have more points of access than Major Collectors, and lower speed limits.

- **North Hill Road:** Functions as a frontage road for Interstate 25 north of US 550 to the municipal boundary.

All other roadways are classified as local streets, and are typically intended to provide direct access to homes and businesses. Local streets are designed to discourage through traffic, have the lowest speed limits, and support a lower level of traffic volume.

Potential Reclassification

Sheriff's Posse Road and Venada Plaza Drive located on the west side of the Rio Grande between US 550 and NM 528 are functioning as Collectors. However, there are right-of-way easement issues that the Town is working to resolve before these streets should be evaluated for functional classification.

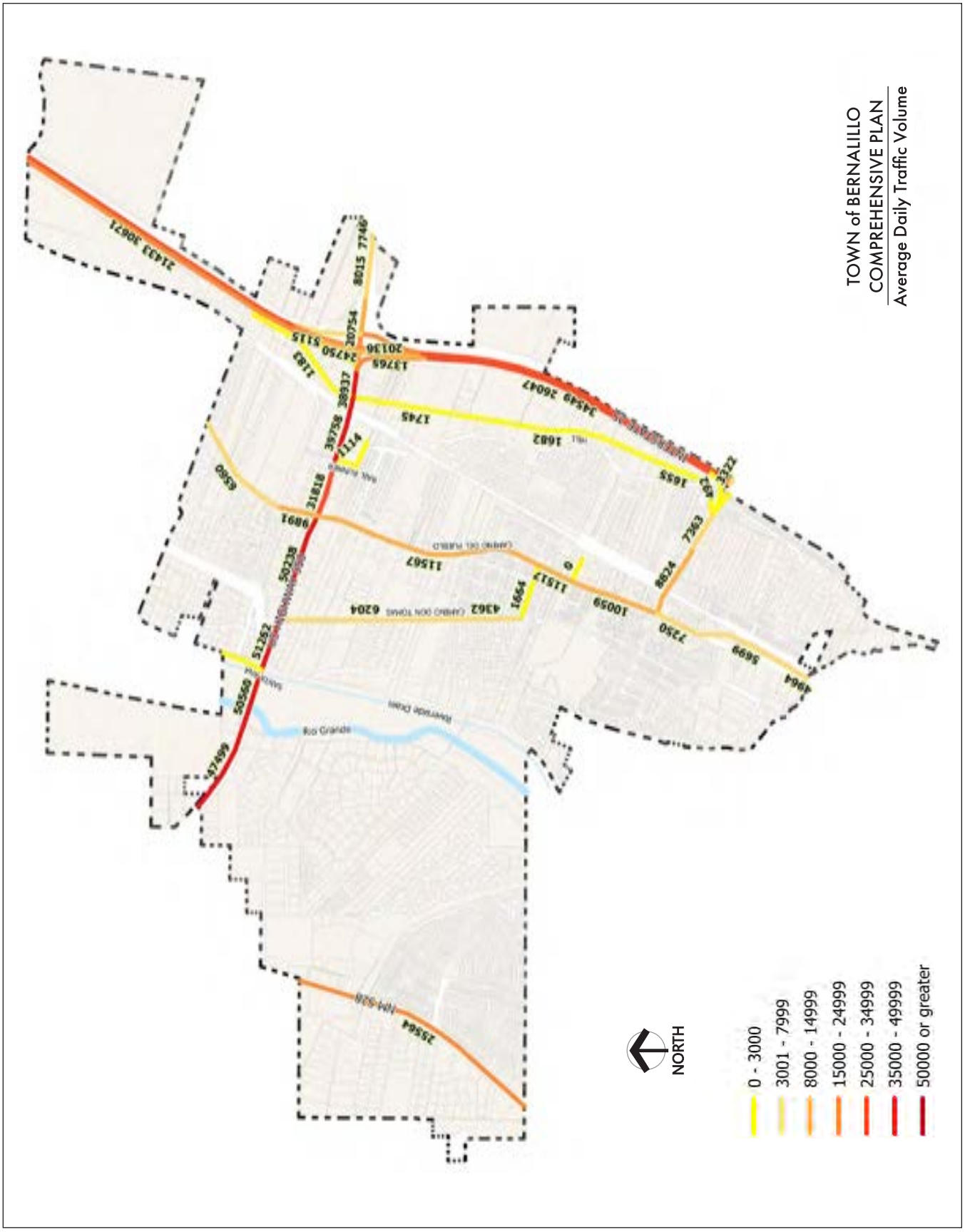
6.4 STREET CONDITIONS

TRAFFIC COUNTS

In 2019, the MRMPO traffic counts showed over 25,000 vehicles a day (ADT or Average Daily Traffic) on Interstate 25 southbound and over 33,000 vehicles a day northbound (over 58,000 ADTs south of the US 550 interchange). While traffic counts on US 550 were likely affected by construction in 2019, the MRMPO reported over 45,000 vehicles a day at the Rio Grande bridge. There were over 25,000 vehicles a day on NM 528 passing in front of the Walmart store. Camino del Pueblo attracts much less traffic; between 9,000 and 10,000 vehicles per day between US 550 and Calle Bernalillo.

PHYSICAL CONDITIONS

Streets in Bernalillo are generally observed to be in fair to good condition. The NMDOT maintains Interstate 25, US 550, NM 528, Camino del Pueblo (NM 313), and Avenida Bernalillo (NM 473). NM 528 is a heavily-traveled, five lane road with curb, gutter, and


TOWN of BERNALILLO
COMPREHENSIVE PLAN
Average Daily Traffic Volume
NORTH
0 - 3000
3001 - 7999
8000 - 14999
15000 - 24999
25000 - 34999
35000 - 49999
50000 or greater
Rio Grande
31433
30621
8015
7746
20754
5115
20136
34750
13769
1283
38937
39758
1745
34549
26047
1682
1655
3322
7363
8624
7350
8599
4964
10059
11512
1664
4362
6204
11567
9891
31818
6580
50238
51352
50560
37499
25564

sidewalks. Camino del Pueblo runs through the historic area of Bernalillo and functions as Bernalillo's "Main Street", with commercial, institutional, and residential buildings lining the street. There is on-street parking along much of the street, which helps to calm traffic, provide a safer and more pleasurable pedestrian experience, and support local retail and services.

Most local streets are paved, although there are streets with a gravel surface in some areas. Some streets are located on public or private easements that may not meet current standards for width, curves, or turning radius. Newer subdivisions, such as Santiago, are developed with curb, gutter, and sidewalks.

TRAFFIC SAFETY

Traffic safety is influenced by multiple factors, including road design, posted speed limits, and driver behavior. Most vehicle accidents in Bernalillo occur on the streets carrying the most traffic. According to crash data reports compiled by the NMDOT and the University of New Mexico (UNM), the largest number of accidents occur on US 550, particularly at the intersections with Camino del Pueblo, Camino Don Tomas, Spartan Alley, Interstate 25, and Sheriff's Posse Road. US 550 has also been under construction, which may have added to the number of accidents in the short-term. The intersection of Venada Plaza Drive with NM 528 has also become a site of frequent crashes since that street was constructed. The intersection of Camino del Pueblo has been a leading source of crashes for many years. More recently, the intersection of Camino del Pueblo and Bell Lane, one block north of US 550, has also become a frequent crash site. Since 2010, there have been fatal crashes on Interstate 25; on US 550 at Hill Road, Spartan Alley, Camino del Pueblo, Santa Ana Road, and Edmund Road; and on NM 528, south of Venada Plaza Drive.

In 2009, the NMDOT began a phased project to address capacity and safety concerns on US 550 in Bernalillo, expanding the street to six-lanes by 2022. The NMDOT and the Town of Bernalillo have also undertaken a series of sidewalk and pedestrian crossing improvements on Camino del Pueblo, with Phase 4 in progress and a planned fifth phase. Among the improvements are mid-block signalized pedestrian crosswalks at El Zocalo Plaza, Town Hall, and the commercial cluster that includes The Range restaurant, with refuge islands in small medians *(see Section 6.8, Capital Improvements for more information)*.

Sheriff's Posse Road

Sheriff's Posse Road is a narrow road that runs south of US 550. Originally providing access to the Sheriff's Posse Rodeo Grounds, traffic along Sheriff's Posse Road has grown as previously rural residential properties have been developed into residential subdivisions. Although the street is paved, there is no curb and gutter, and shoulders and roadside drainage are inconsistent. At the time of this writing, the Town of Bernalillo is in the process of completing a traffic study for Sheriff's Posse Road.

In 2009, Venada Plaza Drive was constructed from NM 528, south of the Walmart store, and ended in a cul-de-sac near where Sheriff's Posse Road ended along a private driveway. Although originally gated, a connection was paved between Venada Plaza Drive and Sheriff's Posse Road over the intervening property. While this provides access for local residents to both US 550 and NM 528, the streets have also become a popular cut-through route from Rio Rancho to US 550. Participants in the Community Survey expressed support for improvements to Sheriff's Posse Road, including sidewalks and/or bicycle lanes, but do not necessarily support widening the street.

TABLE 6.1: CRASH DATA AT MAJOR INTERSECTIONS IN BERNALILLO

Rank	Street	Cross-Street	2010-2012	2017-2019
1	US 550	Camino del Pueblo	49	121
2	US 550	Camino Don Tomas	30	120
3	US 550	Spartan Alley	40	82
4	US 550	Interstate 25	63	63
5	US 550	Santa Ana Road	12	43
6	NM 528	Venada Plaza Drive	10	33
7	US 550	Sheriff's Posse Road	29	27
8	Camino del Pueblo	Avenida Bernalillo	9	21
9	Camino del Pueblo	Bell Lane	0	18
10	US 550	Hill Road	17	10

Source: NMDOT and UNM.

6.5 RAIL

The NMDOT purchased or constructed 133 miles of rail right-of-way in the Albuquerque and Santa Fe metropolitan areas between 2005 and 2008 to facilitate development of commuter rail service. The railroad line was originally built through Bernalillo by the Atchison, Topeka & Santa Fe (AT&SF) Railway in 1880. The AT&SF merged in 1996 to become the Burlington Northern and Santa Fe (BNSF) Railway. The section of railroad through the Town of Bernalillo is part of the Albuquerque Subdivision, mostly served with a single line of Class 4 track.

There are two at-grade railroad crossings in Bernalillo, at Avenida Bernalillo (NM 473) and Lucero Avenue. Improvements are planned at both crossings.

PASSENGER RAIL

The New Mexico Rail Runner Express commuter rail service was initiated in Sandoval County in 2006. The Rio Metro Regional Transit District has an operating agreement with NMDOT to manage the New Mexico Rail Runner Express under the American Association of Railroads reporting mark NMRX. Rio Metro is funded by gross receipts taxes, with funding split between bus and commuter rail. Over 17% of respondents to the Community Survey stated they use New Mexico Rail Runner Express. Approximately 6% stated they use the commuter rail service at least 2 to 3 times a month and 50% use the service a few times a year.

The Rio Metro Regional Transit District operates two Rail Runner Express stations in Bernalillo:

- **Sandoval County/US 550 Station:** This station is located at 400 Station Street, between Camino del Pueblo and Interstate 25. There are four Rio Metro bus routes, a Santa Ana Star Casino Shuttle, and a NMDOT Park & Ride Northern Route bus to Los Alamos providing transit connections at this rail station. There are 191 parking spaces in the lower lot west of the platform with access off of US 550, and 260 parking spaces in the upper lot east of the platform with access from South Hill Road. There are also ten bicycle lockers and covered parking for carpool vehicles.
- **Downtown Bernalillo Station:** This station is located at 820 Railroad Track Road. While the street along this section of the railroad tracks was rebuilt when the station was constructed, the road remains mostly unimproved from East Avenida Bernalillo. There are 23 free parking spaces in a parking lot west of Railroad Track Road, and four bicycle lockers.

Amtrak's Southwest Chief operates passenger trains on the Albuquerque Subdivision between Chicago and Los Angeles. The closest Amtrak stations to Bernalillo are in Downtown Albuquerque and Lamy, New Mexico. The New Mexico State Rail Plan (2012),

Downtown Bernalillo Rail Runner Station.

currently being updated, reported 12,589 boardings and alightings at Lamy Station and 78,324 boardings and alightings at Albuquerque in FY2012.

FREIGHT RAIL

The BNSF retained freight service rights on the Albuquerque Subdivision as a condition of selling the rail line to the NMDOT. The rail line through northern New Mexico is maintained as a backup route in case of interruptions on the primary Transcon line through eastern New Mexico to Belen. The BNSF provides freight service north of Albuquerque, although not on a regular schedule. There is a double track for about 1.5 miles north of Lucero Avenue with an old rail siding on the east side of the tracks from Avenida Bernalillo to just north of the Downtown Bernalillo Station. There is also a siding at the rear of the American Gypsum plant on N. Hill Road. Historically, there was a rail spur west of the mainline to serve the sawmill at the location where Rotary Park is today. Restoration of rail service to the Bernalillo Industrial Park may be a possibility in the future; however, it would require crossing Camino del Pueblo.

6.6 RIO METRO TRANSIT

The Rio Metro Regional Transit District funds and operates bus transit services in the metropolitan area, including commuter bus service in Bernalillo. Commuter bus routes operate Monday through Friday. The fare is $1 per zone one way, $30 for a monthly pass, and free connections with a valid Rail Runner ticket. A reduced fare is available for youth, students with a valid student ID, senior citizens over age 62, and people with disabilities. All of Rio Metro's buses comply with the Americans with Disabilities Act.

The Rio Metro advertises Route 8 as running from Bernalillo to Cuba; however, the easternmost stop is at the Home Depot on Safelight Boulevard at US 550 in Rio Rancho. The routes were adjusted in 2020 and 2021 due to COVID-19 pandemic restrictions.

COMMUTER ROUTES

Route 201 Enchanted Hills

Route 201 runs between the Sandoval County/US 550 Station in Bernalillo and Enchanted Hills subdivision south of US 550 in Rio Rancho, with a stop in Bernalillo at the Walmart store on NM 528. Weekday service is provided during AM/PM peak commute hours (morning and evening).

Route 202 Cochiti Lake

Route 202 runs between the Sandoval County Government Complex and the Town of Cochiti Lake. This route primarily connects the Pueblo of Cochiti and the New Mexico Rail Runner Express Kewa Station. There is one morning route from Cochiti Lake to Algodones, continuing with stops at Bernalillo High School, Sandoval County/US 550 Station, Historic Sandoval County Courthouse on Camino del Pueblo, and the Walmart store on NM 528. There is one mid-afternoon route that stays solely on US 550.

Route 204 Jemez Springs

Route 204 runs between the Sandoval County/US 550 Station in Bernalillo and Jemez Springs. This route primarily connects the Pueblo of Jemez and the Sandoval County/US 550 Station. An early morning route runs from Jemez Springs directly to the Sandoval County/US 550 Station and back again. A second morning route from Jemez Springs includes stops in Rio Rancho, at the Walmart store on NM 528, the Sandoval County/US 550 Station, and the Historic Sandoval County Courthouse on Camino del Pueblo. A mid-afternoon route begins at the Historic Sandoval County Courthouse then west from the Sandoval County/US 550 Station to Jemez Springs and returns east again to the railroad station. Two evening routes run from the train station west to Jemez Springs.

Route 505 Albuquerque

Route 505 runs one-way, once a morning from the Sandoval County/US 550 Station in Bernalillo to downtown Albuquerque.

DEMAND RESPONSE SERVICE

The Rio Metro offers a Dial-a-Ride paratransit service in areas of Sandoval County, but not for residents of Bernalillo. Paratransit complements fixed-route mass transit by providing rides as requested by qualified users, such as those with disabilities or senior citizens. The provision of paratransit also contributes towards a public transit agency's responsibilities under the Americans with Disabilities Act (ADA).

Private on-demand ride share companies, such as Uber and Lyft, operate in Bernalillo. Some communities across the country have partnered with service providers, such as Via Transportation, to offer on-demand public transit and paratransit services.

INTERCITY BUS SERVICE

There are no stops in Bernalillo for intercity bus service. The Rail Runner Express commuter rail provides access to bus depots in Albuquerque and Santa Fe.

6.7 PEDESTRIAN and BICYCLE FACILITIES

An accessible multi-modal transportation system includes provisions for pedestrians and bicyclists, as well as those who drive and take transit. This includes designing street improvements that are pedestrian friendly, compliant with the Americans with Disabilities Act (ADA), and have bicycle infrastructure, where appropriate.

SIDEWALKS

Existing sidewalks are primarily limited to major streets that have curb and gutter installed, such as Camino del Pueblo (NM 313) and US 550. Sidewalks in older neighborhoods are limited due to narrow rights-of-way and lack of drainage conveyance systems. The condition of existing sidewalks ranges from good to poor. Comments on the Community Survey expressed support for improving sidewalks, particularly along major roads.

A walk score measures the "walkability" of a neighborhood based on distance to nearby destinations and pedestrian friendliness. The website Walkscore.com rated Bernalillo near Town Hall with a "Somewhat Walkable" Walk Score of 69 out of 100 possible points, since some errands can be accomplished on foot. Newer areas, like the Walmart store on the west side of the Rio Grande, have sidewalks but few interconnections, earning a Walk Score of 46 or "Car-Dependent". Over 40% of respondents to the Community Survey stated they walk regularly.

BIKE FACILITIES

Bicycle facilities are limited in Bernalillo. There is a bike lane on part of US 550 at the Interstate 25 interchange, with improvements planned as part of the highway reconstruction project. There is also a bike lane along NM 529. The website Walkscore.com rated downtown Bernalillo as "Bikeable" with a Bike Score of 58 out of 100. Over 20% of respondents to the Community Survey replied they use a bicycle on a regular basis.

Multi-Use Trails

There is a paved multi-use trail along Camino Don Tomas in the area around Bernalillo Middle School. The trail is lined with exercise stations. There is also a short multi-use trail north of the Downtown Bernalillo Transit Station.

The Town of Bernalillo and Rio Metro recently completed the first phase of the *Rail Corridor Pedestrian Safety Improvements Project* in the Downtown Bernalillo Transit Station area, which included:

- Pedestrian railroad crossing on the north side of the Rail Runner Station;
- Sidewalk from the Rail Runner Station south to Avenida Bernalillo on the east side of Railroad Track Road; and
- Multi-use trail and barrier fencing from the Rail Runner Station north to Calle del Presidente.

A paved trail has been proposed in MRMPO long-range plans for Sheriff's Posse Road and along the Rio Grande south of US 550. Respondents to the Community Survey expressed support for adding bike lanes and multi-use trails.

Safe Routes to School

Most students across the country are driven to school, and new homes are built further away from existing neighborhood schools. Both of these factors increase traffic congestion and discourage students from walking or biking to school.

Local school districts typically develop programs to meet local needs, with support from state and national programs. The Federal SAFETEA-LU transportation bill provided for Safe Routes to School guidelines

and funding. Local programs engage in planning, activities, and design and construction to encourage walking and biking within two miles of a school serving students in Kindergarten through Eighth Grade. Federal funding for Safe Routes to School activities is currently allocated by NMDOT through the Surface Transportation Block Grant (STBG) Program, as part of the Transportation Alternatives Program.

AMERICANS WITH DISABILITIES ACT (ADA)

The Town of Bernalillo adopted an Americans with Disabilities Act (ADA) Transition Plan in 2017, which rated sidewalk conditions. Existing sidewalks on Camino del Pueblo, Rotary Park Road, Calle Madera, Calle Mesquite, Calle Palo Verde, Los Pinos Road, Mahogany Road, Maple Street, Melissa Road, Sawmill Road, the south end of Calle Laguna, and Coronado Drive were rated in poor condition. A high priority was assigned for improvements to sidewalks in several areas, including:

- **Calle del Escuela:** In the Cottonwood area, east of El Zocolo Plaza near W.D. Carroll Elementary School;
- **US 550:** Sidewalks and crossings are being improved as part of the ongoing highway construction project;
- **Camino del Pueblo:** The Town has made phased improvements;
- **Calle del Presidente:** Near the historic Sandoval County Courthouse and US Post Office east of Camino del Pueblo; and
- **Rotary Park Road:** At Rotary Park.

The Transition Plan includes several strategies to meet requirements of the ADA, including construction of accessible ramps and sidewalks, relocation of utilities, improvements to pedestrian push buttons at crossings, and upgrades at group mailboxes. The Town of Bernalillo has also planned ADA improvements to other public facilities, including parks.

6.8 CAPITAL IMPROVEMENTS

REGIONAL PROJECTS

The Mid-Region Metropolitan Planning Organization's (MRMPO) Connections 2040 Metropolitan Transportation Plan (MTP) identified the area at the intersection of US 550 and NM 528 as a key "Regional Center" that generates high traffic counts. The MRMPO's target scenario encouraged job growth on the west side of the Rio Grande, including at the US 550 Regional Center. Since no new bridges are anticipated to be built over the Rio Grande, the intent is to provide more job opportunities to residents who live on the west side of the Rio Grande and mitigate congestion pressures on the existing river crossings.

Interstate 25, US 550, and NM 528 are considered priority corridors throughout the MTP. These routes are identified as Intelligent Transportation Systems (ITS) network priority corridors where new investments in technology are planned, such as real-time traveler information services and commercial vehicle/freight management communications. These routes are also identified as Primary Freight Corridors, which are prioritized for freight-related improvements.

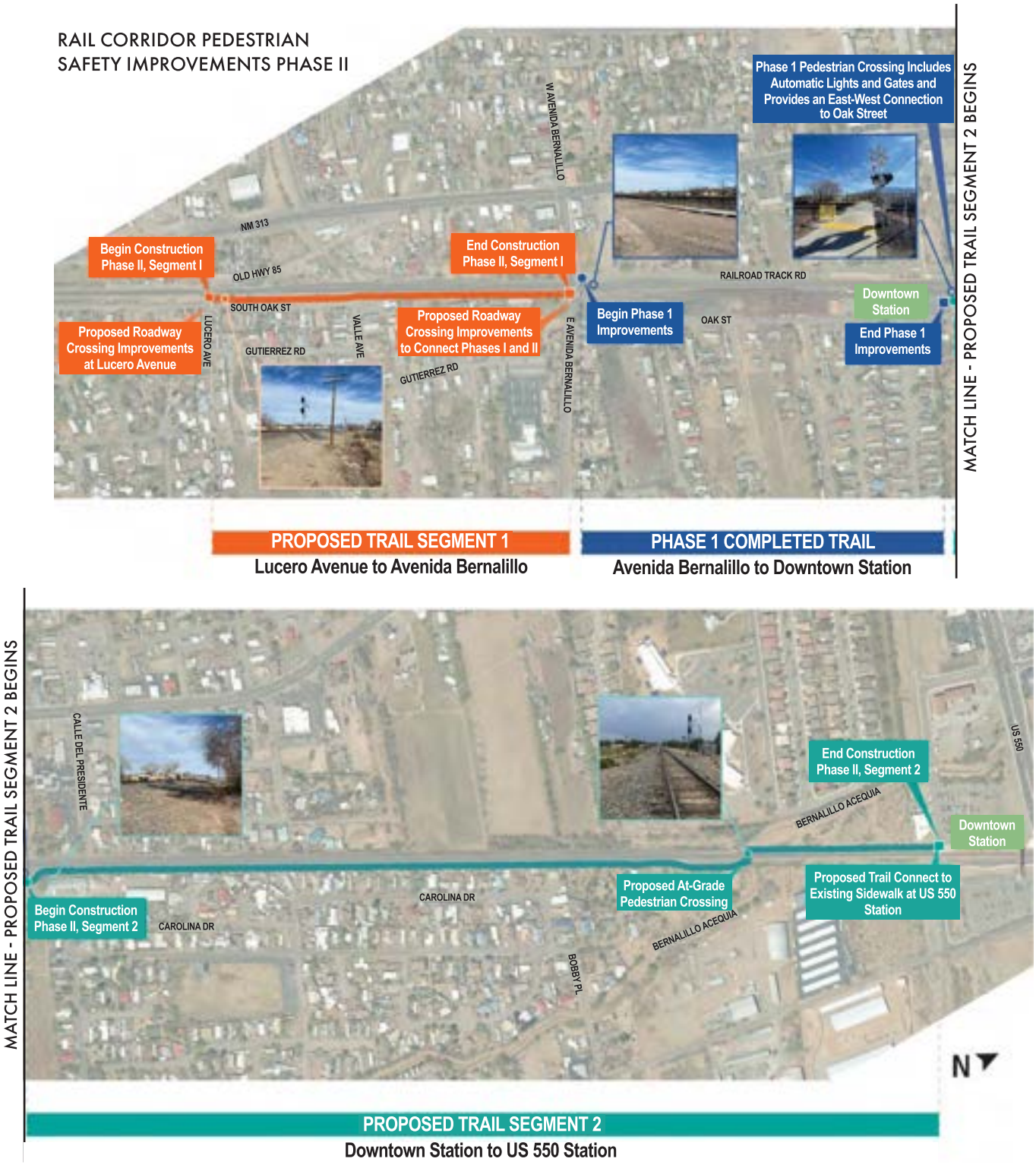
The Transportation Improvement Program (TIP) is a federally-mandated, short-term plan that programs funding for transportation projects in the metropolitan area. In order for a project in the Albuquerque area to be eligible for federal transportation funding, it must first be included in the MRMPO TIP, which also requires a project be consistent with the MTP. The MRMPO TIP covers a six-year time frame and is updated every two years. It is incorporated into the NMDOT's Statewide Transportation Improvement Program (STIP) and final approval is by the Federal Highway Administration and Federal Transit Administration.

Albuquerque Metropolitan Planning Area Transportation Improvement Plan

The Town of Bernalillo is the lead agency on the following two projects listed in the current FY2020-2025 Metropolitan Planning Area TIP:

- **Rail Corridor Pedestrian Safety Improvements Phase II:** This project extends the improvements in Phase I along the railroad tracks near the

Downtown Bernalillo Station, with an estimated cost of $2,931,148. The southern segment extends the multi-use trail and barrier fencing from Avenida Bernalillo to Lucero Avenue along S. Oak Street. The northern segment includes a multi-use trail and barrier fencing on the east side of the railroad tracks, beginning at the pedestrian railroad crossing at the Downtown Bernalillo Station. This will include a pedestrian crossing where the Bernalillo Acequia crosses the railroad tracks, with the multi-use trail extending along the west side of the tracks to the Sandoval County/ US 550 Station.



- **Bernalillo Main Street Streetscape Phase 4:** On Camino del Pueblo from Avenida Bernalillo to the southern municipal boundary, with an estimated cost of $3.1 million. The project focuses on sidewalk improvements for ADA compliance and is scheduled for construction in 2023.

The Rio Metro has a project listed in the TIP to install Positive Train Control from Belen to the Santa Fe Depot, at an estimated cost of $65.2 million. The project will support increased speed and safety for both passenger and freight trains. The Rio Metro also has numerous projects listed in the TIP across its service area for commuter rail maintenance-of-way, equipment, and transit operations.

The NMDOT District 3 is listed as the lead agency for the US 550 bridge rehabilitation (estimated cost of $2.1 million) and improvements to Interstate 25 in Bernalillo and north of Bernalillo. NMDOT Transit is listed as the lead agency for railroad crossing improvements at Avenida Bernalillo and Lucero Avenue, at estimated costs of $756,499 and $609,203, respectively.

INFRASTRUCTURE CAPITAL IMPROVEMENT PLAN (ICIP)

The Town of Bernalillo's FY2023-2027 Infrastructure Capital Improvement Plan (ICIP) prioritized projects and planning future goals. The ICIP cited factors and trends affecting Bernalillo, including rapid residential and commercial growth, development on the west side of the Rio Grande, and the potential for transit-oriented development related to the Rail Runner Express commuter rail system. The ICIP also considered the possibility of leveraging local, state and federal investments. The FY2023-2023 ICIP listed three transportation projects, all of which support multi-modal transportation and accessibility goals *(see Table 6.2)*. The Camino del Pueblo Phase V Streetscape and ADA Improvements is a continuation of the "Bernalillo Main Street Streetscape Phase 4" project listed in the TIP but under a different name.

US 550

The NMDOT initiated a series of improvements to US 550 through Bernalillo in 2009. In the first phase, completed in 2014, NMDOT improved the section between Interstate 25 and NM 313, and converted the ramps at Interstate 25 to a Single Point Urban Interchange (SPUI). This is a form of diamond interchange that allows opposing left turns to proceed simultaneously by compressing two intersections into one. Improvements to US 550 include:

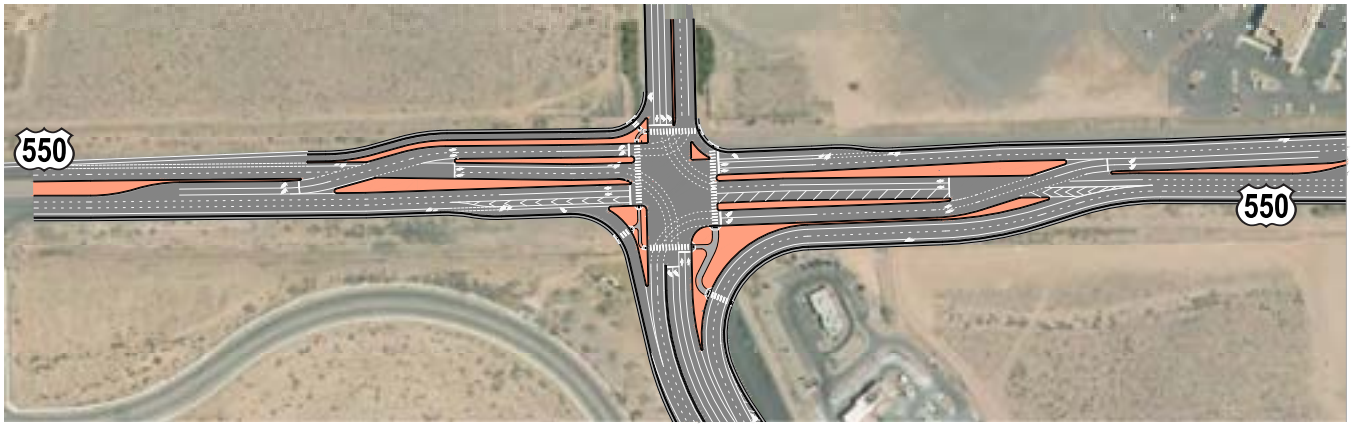
- Expansion from four travel lanes to six travel lanes with raised medians, curb and gutter;
- Addition of bike lanes, sidewalks, and ADA compliant ramps and crossings; and
- New traffic signals, roadway lighting, storm drain inlets, signing, striping, median landscaping.

A six-lane roadway with raised medians has been built east of the Rio Grande bridge. The project included a Super Street concept, also known as a restricted crossing U-turn (RCUT) or "J-turn", to allow

TABLE 6.2: FY2023-2027 TRANSPORTATION CAPITAL IMPROVEMENTS

Project Title	FY2023	FY2024	FY2025	FY2026	FY2027	Total Cost
Trail Support System - Bike and Pedestrian						
	$150,000	$1,350,000	-	-	-	$1,500,000
Camino del Pueblo Phase V Streetscape and ADA Improvements						
	$215,000	$1,685,000	-	-	-	$1,900,000
Street Light Installation in Mountain View, Sawmill, and Ronald Street Neighborhoods						
	$566,666	$566,666	$366,668	-	-	$1,500,000

Source: Town of Bernalillo.



CFI design at NM 550 and NM 528 intersection. Source: NMDOT website.

for a wider than average median and restricted cross-traffic in a variation of the "Michigan Left Turn". In this configuration, traffic on side streets have to turn right onto US 550 and then make a U-turn at a dedicated signal to make a left turn.

The intersection of US 550 and NM 528 is New Mexico's first Continuous Flow Intersection (CFI). In a CFI, vehicles making a left-turn cross opposing traffic before they enter the intersection. This configuration is intended to reduce delays and collisions.

The largest number of vehicle crashes in Bernalillo occur along US 550. After construction is complete and regular drivers have time to adapt to the new roadway configuration, the Town should consider working with NMDOT and MRCOG to compare effects on traffic safety measures including crash rates.

6.9 TRANSPORTATION and MOBILITY ISSUES

COMPLETE STREETS

"Complete Streets" is an approach to transportation planning and design that considers and balances the needs of all transportation users. The approach is designed to improve safety, convenience, and equity for users of all ages and abilities.

Complete Streets tailor improvements to community context and conditions, including sidewalks and pedestrian crossings, bike lanes, transit stops, and streetscape design. These improvements make it easier to cross the street, walk to school, bicycle to work, and allow people to move more independently at any age and with a range of abilities. A Complete Street approach not only improves safety and livability, but also encourages long-term health gained through an increase in physical activity.

Recent and planned sidewalk and pedestrian crossing improvements to Camino del Pueblo have moved this roadway closer to serving users of all ages and abilities. Similar Complete Streets improvements would encourage multi-modal use of other arterial and collector streets in Bernalillo.

SIDEWALKS and TRAILS

Many of the busier roadway facilities in Bernalillo have sidewalks and bicycle lanes. However, even some of the state highways, such as East Avenida Bernalillo (NM 473), have significant stretches where pedestrians and bicycles are placed in the road with traffic. There are also gaps between popular destinations, such as:

- Between eastside neighborhoods and the pedestrian crossing of the railroad tracks at the Downtown Station;
- Between the Downtown Station and Town Hall on Camino del Pueblo; and
- Between Camino del Pueblo and Rotary Park.

COMMUTER RAIL CONNECTIONS

The establishment of commuter rail service and two rail stations gave Bernalillo a unique transportation option for local residents. In 2007, the Bernalillo Transit Oriented Development (TOD) Plan was adopted with recommendations to build better community connections with the commuter rail stations, with

improvements to transportation circulation citywide and specific improvements near each station. For example, the TOD Plan recommended a new at-grade railroad crossing at Calle Presidente and Richardson Drive near the US Post Office in the Downtown Station Area. A multi-use path was recently constructed along the railroad tracks between Calle Presidente and the pedestrian crossing at the Downtown Station.

STREET MAINTENANCE

The Public Works Department has proposed to include a comprehensive Infrastructure Asset Management Plan in a future ICIP. A street conditions study conducted by a qualified civil engineer would provide base data for street maintenance and pavement management programs, as well as a long-term transportation Asset Management Plan.

Bernalillo residents consider street maintenance to be important; 55% of participants in the Community Survey stated the Town of Bernalillo should focus on street maintenance. Several written comments voiced support for continued maintenance and eventual improvement of the remaining unpaved streets on the south side of Bernalillo. Others mentioned concerns with street flooding and drainage in storm events.

SHERIFF'S POSSE ROAD

Sheriff's Posse Road has become a major component of Bernalillo's street system serving the neighborhoods and commercial areas west of the Rio Grande. The street provides the only access for residents to US 550. While the informal connection with Venada Plaza Drive provides access to NM 528 without having to use US 550, it also provides cut-through access for traffic with origins and destinations outside of Bernalillo. The Town is working to resolve easement and right-of-way issues at the connection point. As previously mentioned in this chapter, a traffic study is currently underway. The traffic study should provide the basis for long-term improvements to drive lanes and intersections, access, sidewalks, bicycle lanes/paths, and drainage facilities.

STREET CHARACTER

Narrow streets and acequias are an important character element of the community, and part of what gives Bernalillo its charm. Allowing for narrow street standards in residential neighborhoods where traffic volume is relatively low will help ensure this character remains in the future. Narrower streets also have a dual function of slowing traffic speeds.

6.10 GOALS, OBJECTIVES, & STRATEGIES

TRANSPORTATION GOAL 1

Maintain an integrated and efficient multi-modal transportation system.

Objectives

- *To balance the mobility needs of pedestrians, bicyclists, motorists, and large truck traffic.*
- *To accommodate the community's mobility needs without detracting from Bernalillo's small-town character.*
- *To reduce the dependence on passenger vehicles by providing more walkable streetscapes and multi-use trail networks.*
- *To determine the appropriate function and carrying capacity of major roadways.*

Transportation Strategy 1.1

Pursue funding from the New Mexico Finance Authority for a Transportation Asset Management Plan that contains:

- A Pavement Management Program that inventories all roadway and bridge assets and existing conditions;
- Cost projections for future needs and improvements to the roadway system;
- Funding strategies;
- Phased list of prioritized projects according existing condition, traffic volume served, support for public services and tax base, and leveraging potential; and
- Coordination of projects with the Town's Infrastructure Capital Improvement Plan (ICIP).

Transportation Strategy 1.2

In conjunction with Transportation Strategy 6.1.1 and Infrastructure Strategies 7.2.3 and 7.4.2, create a GIS functional database for the existing transportation network in Bernalillo. The database should be maintained and updated on an ongoing basis.

Transportation Strategy 1.3

Create an off-street multi-use trails master plan that identifies connections and expands the existing trail system to connect residential neighborhoods to schools, commercial areas, transit stations, and other destinations. Utilize the most current AASHTO Guide for the Development of Bicycle Facilities standards.

Transportation Strategy 1.3

In conjunction with NMDOT, evaluate and determine the feasibility of adding bicycle lanes on E. Avenida Bernalillo (NM 473). New bicycle lanes should be designed in compliance with AASHTO (American Association of State Highway and Transportation Officials), as amended.

Transportation Strategy 1.4

Continue to coordinate and work with the NMDOT on upgrading its facilities within Bernalillo, including roadways, sidewalks, traffic signals, turn lanes, bridges, and drainage structures.

Transportation Strategy 1.5

Pursue funding for transportation-related projects through NMDOT programs, including the Local Government Road Fund; Municipal Arterial Program; Cooperative Projects; Safety Projects; Bicycle/Pedestrian/Equestrian Program; Transportation Alternatives Program; and Recreational Trails Program.

Transportation Strategy 1.6

Conduct an analysis of traffic volumes, function, access, and speed to determine whether changes to the functional classification are appropriate. This strategy should include coordination with and support from MRCOG for changes to functional classification.

TRANSPORTATION GOAL 2

Maintain safe street and sidewalk conditions within the Town of Bernalillo.

Objectives

- *To establish a public street and sidewalk maintenance and funding plan that addresses annual maintenance and replacement.*
- *To ensure major streets are developed, extended, or improved to meet adopted functional classification standards.*
- *To allow for narrower street standards that reflect the traditional historic character of Bernalillo.*

Transportation Strategy 2.1
Create a preventative street maintenance plan that identifies priorities and secures funding for improvements to and resurfacing of pavement, reconstruction of deteriorated streets and bridges, and annual maintenance activities, such as crack sealing, seal coating, patching, pavement marking, etc.

Transportation Strategy 2.2
Develop a construction and replacement plan for cracked, deteriorated, or missing sidewalks, ramps, and pedestrian crossings to meet ADA accessibility requirements.

Transportation Strategy 2.3
Develop minimum street standards for local roads within residential neighborhoods that allow for reduced pavement width where traffic volume is relatively low, and address surfacing, curbing and drainage swales, walkways, and visitor parking. The standards should be delineated according to the number of residential parcels to be served.

TRANSPORTATION GOAL 3
Expand transit and passenger rail services in Bernalillo.

- *To accommodate the public transit needs of the elderly, people with disabilities, and residents who do not own personal vehicles.*
- *To increase the use of the New Mexico Rail Runner Express by Bernalillo residents.*

Transportation Strategy 3.1
Evaluate and quantify the need for higher frequency service, additional bus shelters, and transit stops in Bernalillo to serve current and future residents.

Transportation Strategy 3.2
Work with Rio Metro on expanding its Dial-a-Ride paratransit service to Bernalillo residents who do not own a passenger vehicle or are unable to drive due to disability.

Transportation Strategy 3.3
Work with Rio Metro on determining the demand for intercity service to and from Albuquerque, Rio Rancho, and Santa Fe.

Transportation Strategy 3.4
Promote and provide information regarding the Rail Runner Express service to Bernalillo residents. As part of this strategy, work with Rio Metro and NMDOT to expand frequency of service.

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CHAPTER 7

INFRASTRUCTURE

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7.1 INTRODUCTION

Infrastructure systems provide the foundation and basic building blocks for a functional urban community. In Bernalillo, as in most municipalities, utilities are provided by the Town and private providers. Depending on their service, these are state-regulated, federally licensed, and/or municipally franchised providers. Residents and businesses in Bernalillo rely on water, sewer, storm drainage, energy, communications, and solid waste services delivered by the Town and private providers. New residents and new businesses also require access to these services to meet the community's future needs. The Infrastructure element works in concert with the Land Use element to ensure Bernalillo will have adequate utilities to serve both existing development and future growth.

7.2 WATER

WATER RIGHTS and SUPPLY

The Town of Bernalillo's primary water source is groundwater with approximately 1,880 acre-feet of vested water rights and transferred irrigation rights. The Town of Bernalillo also owns 400 acre-feet of water provided by the San Juan-Chama Project, which diverts water from the Colorado River Basin into the Rio Grande Basin. San Juan-Chama water is released from Heron Reservoir into tributaries of the Rio Grande to offset groundwater depletion. The Town of Bernalillo requires developers to provide water rights as a condition of approval of new subdivisions and certain commercial developments.

The *Bernalillo 40-year Water Plan* was completed in the 1990s, updated by an addendum filed with the New Mexico Office of the State Engineer in 2011 (Lee Wilson & Associates). The *40-Year Water Plan* is an in-depth study of water rights and water use. The addendum supported the comprehensive water right permit (RG-2478) issued in 2012.

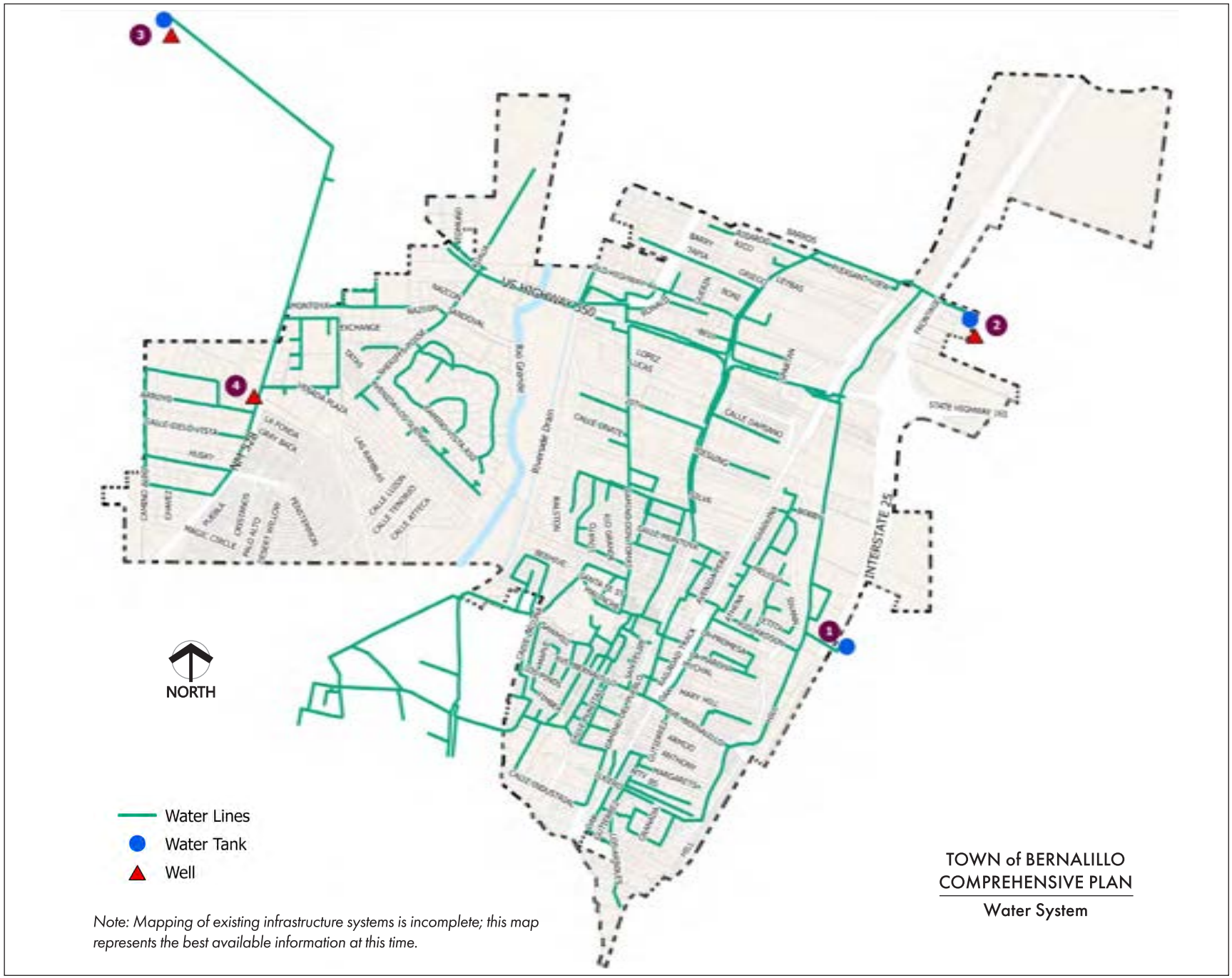
The Town of Bernalillo has two permanent sources of drinking water and one emergency source with well depths from approximately 600 feet to 900 feet. The primary groundwater well (Well #4 located on NM 528, south of US 550 near the Walmart Supercenter) and the Town's secondary well (Well #3 located on US 550 at Paseo del Volcan), provide drinking water year-round. The water from these wells is treated with a pressure filter system that utilizes ferric chloride and sodium hypochlorite to remove arsenic and disinfect the water. The Town has installed an emergency connection to the City of Rio Rancho water system that can be used if Wells #3 and #4 are unable to supply an adequate amount of drinking water. The Town of Bernalillo is also in the process of completing a major rehabilitation of Well #2, located on the Frontage Road, northeast of Interstate 25 and US 550.

The water wells supply four water tanks. Tank Site #1 has a 500,000-gallon water tank located east of Interstate 25, south of US 550. Tank Site #2 has a 1,000,000-gallon water tank, located at the Well 2 site east of I-25. Tank Site #3 has a 1,900,000-gallon tank and a smaller 200,000-gallon tank, located at the Well #3 site. The Well #4 site does not have a tank. The wells and water tanks are illustrated on the Water System map, page 104.

WATER QUALITY

Potential sources of contamination of groundwater are limited due to the well locations. There is limited development up-gradient from the wells on the east side of Interstate 25. Potential sources of pollution on the west side of the Rio Grande should be monitored as that area develops. The primary potential source of groundwater contamination is naturally occurring arsenic, which is being treated *(Town of Bernalillo Domestic Water System Source Water Protection Plan, Daniel B. Stephens & Associates, 2016).*

The Town of Bernalillo continually monitors drinking water quality and reports results to the public in the Annual Drinking Water Quality Report, which is available on the Town's website. Additional information is provided in water billings and in the monthly Town newsletter. In 2020, the Town collected 120 coliform samples, 10 samples per month. No fecal coliform or E. coli bacteria were detected. The Town also monitored chlorine and byproduct levels from disinfection and found no violations of standards. The State of New Mexico samples for organic and inorganic chemicals, radioactive elements, and lead and copper in the water supply. The only exceedance found was naturally-occurring arsenic, which as noted above, is being treated.


NORTH
Water Lines
Water Tank
Well
TOWN of BERNALILLO
COMPREHENSIVE PLAN
Water System
Note: Mapping of existing infrastructure systems is incomplete; this map represents the best available information at this time.

WATER DISTRIBUTION

The Town of Bernalillo provides municipal water for residents and property owners. As of August 2021, the Town was serving 3,746 water customers and 3,246 sewer customers. Municipal water service is provided in limited areas outside of the municipal boundaries. Under Bernalillo's growing population, water use increased from 385 billion gallons per year in 2015 to 438 billion gallons per year in 2020.

Water lines vary in age and condition of material. Water loss is a continuing problem due to leaking pipes and unbilled usage. The oldest pipes were installed in the 1950s and the Public Works Department includes the replacement of aging water lines in its regular work plan.

A significant challenge for the Town of Bernalillo is its lack of data and mapping for the water system, as well as other utility systems. Amongst ten options on the Community Survey for transportation and infrastructure improvements, expansion and maintenance of the water system was chosen by 50% of the participants as a priority.

WATER CONSERVATION

The *Municipal Water Conservation Plan* (Lee Wilson & Associates, 2015), which is in the process of being updated, examined Bernalillo's water supply and consumption patterns. The goal of the *Municipal Water Conservation Plan* was to improve the operational efficiency of the water supply system to reduce water loss (supply-side measures), and to increase water use efficiency in both commercial and residential areas (demand-side measures). Outreach efforts have included a public information program, consultation with large water users, and in-school education programs.

Although total water use has grown as the population has grown, conservation measures have generally reduced water use per capita. The *Municipal Water Conservation Plan* concluded Bernalillo's groundwater resources, along with conservation measures, should provide adequate water supplies to serve current and projected growth. The update to the *Municipal Water Conservation Plan* includes a water audit. An update of the *40-Year Water Plan* is anticipated when funding is available.

7.3 SEWER SYSTEM

WASTEWATER COLLECTION

The existing sewer lines in Bernalillo vary in age and condition of material. Older clay and cast iron pipes are aging and will need systematic replacement. There are a few sections of Orangeburg Pipe, a once-common pipe composed of wood fiber compressed with liquified coal tar pitch used in the 1940s to the 1970s.

Most of the Town's existing sewer system uses gravity flow; however, there are 11 lift stations throughout Bernalillo. Several small stations serve individual users, such as Bosque Brewing on the west bank of the Rio Grande. Others serve individual neighborhoods or larger clusters of users to enhance flows or overcome topography.

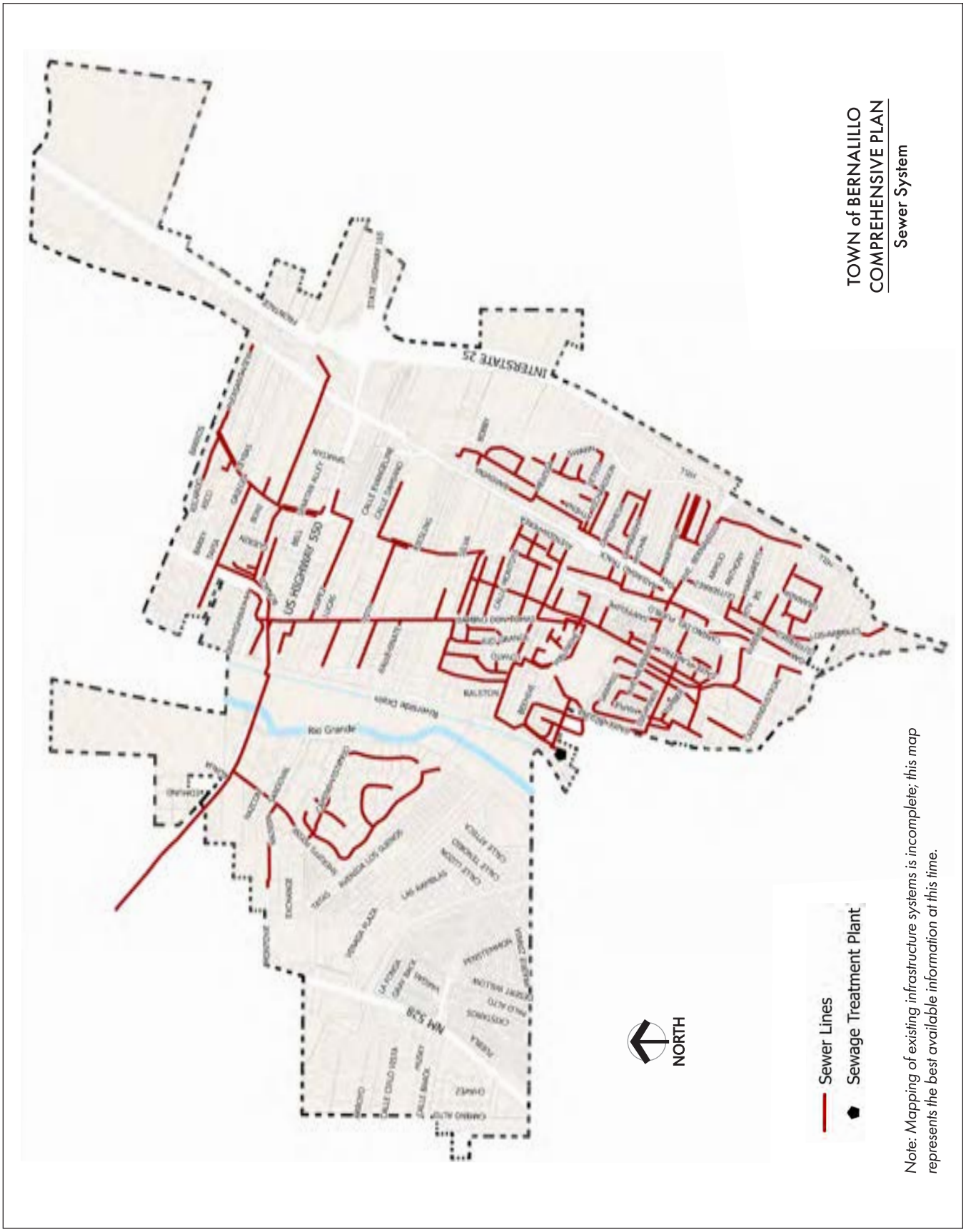
Deterioration of manholes is a growing concern as the system ages. Issues with inflow and infiltration from stormwater and groundwater are limited to certain problem areas of the sewer system.

As mentioned above, there is a lack of mapping and data for the Town's infrastructure systems, including the sewer system, making maintenance and future planning to accommodate growth difficult. Amongst ten options on the Community Survey for transportation and infrastructure improvements, expansion and maintenance of the sewer system was chosen by 49% of respondents as a priority.

WASTEWATER TREATMENT

The Town of Bernalillo's Waste Water Treatment Plant (WWTP) is located at the Public Works yard on the west end of Calle Chaparral, near the Rio Grande. The custom-designed, Aero-mod treatment facility, constructed in 2007, uses an extended-aeration, activated-sludge, wastewater treatment system. The WWTP treats an average of 0.7 million gallons per day (mgd) with a capacity of 1.2 mgd; however, nutrient loading is near system capacity.

The WWTP discharges treated water to the Rio Grande within the Pueblo of Sandia, and therefore, is required to meet the Pueblo's effluent standards. The US Environmental Protection Agency's Dallas office renewed Bernalillo's National Pollutant Discharge


TOWN of BERNALILLO
COMPREHENSIVE PLAN
Sewer System
INTERSTATE 25
US HIGHWAY 550
NM 528
Rio Grande
NORTH
Sewer Lines
Sewage Treatment Plant
Note: Mapping of existing infrastructure systems is incomplete; this map represents the best available information at this time.

Elimination System (NPDES) permit on September 1, 2021.

SEPTIC SYSTEMS

While the Town of Bernalillo provides sanitary service to the majority of residents, as of 2016, approximately 25% of the area provided with municipal water service does not have access to the sewer system. Residents and businesses in these areas (inside and outside of municipal limits) must rely on individual septic systems, including commercial property on Hill Road, residential property between the Bernalillo Industrial Park and the Rio Grande, and the neighborhood west of NM 528 with commercial property along the highway and residential property extending to the west. These systems can lead to surface and groundwater pollution if not properly maintained and periodically replaced.

WATER REUSE

The Town of Bernalillo does not currently have a treated water reuse system. Many communities in New Mexico use treated effluent to reduce the use of potable water for irrigation purposes, which is an excellent method of conserving water resources, particularly in times of drought. Although the Town of Bernalillo must return water to the Rio Grande to meet its water rights obligations, water reuse for irrigation of public park facilities is a worthwhile approach for the Town to consider.

7.4 STORMWATER

Bernalillo's location on the Rio Grande between the Sandia Mountains to the east and high desert bluffs to the west make the community vulnerable to the effects of stormwater runoff and flooding. The levee constructed along the Rio Grande in 1933 provides a measure of protection against riverine flooding. However, arroyos channel stormwater through the community between the foothills and the Rio Grande. At times, stormwater can overwhelm the acequias and turn them into storm channels as well.

Expansion of storm drainage systems was identified by 54% of the participants in the Community Survey amongst the ten options listed for transportation and infrastructure improvement priorities. Respondents also provided comments on the incidents of flooding on Camino del Pueblo during heavy rains.

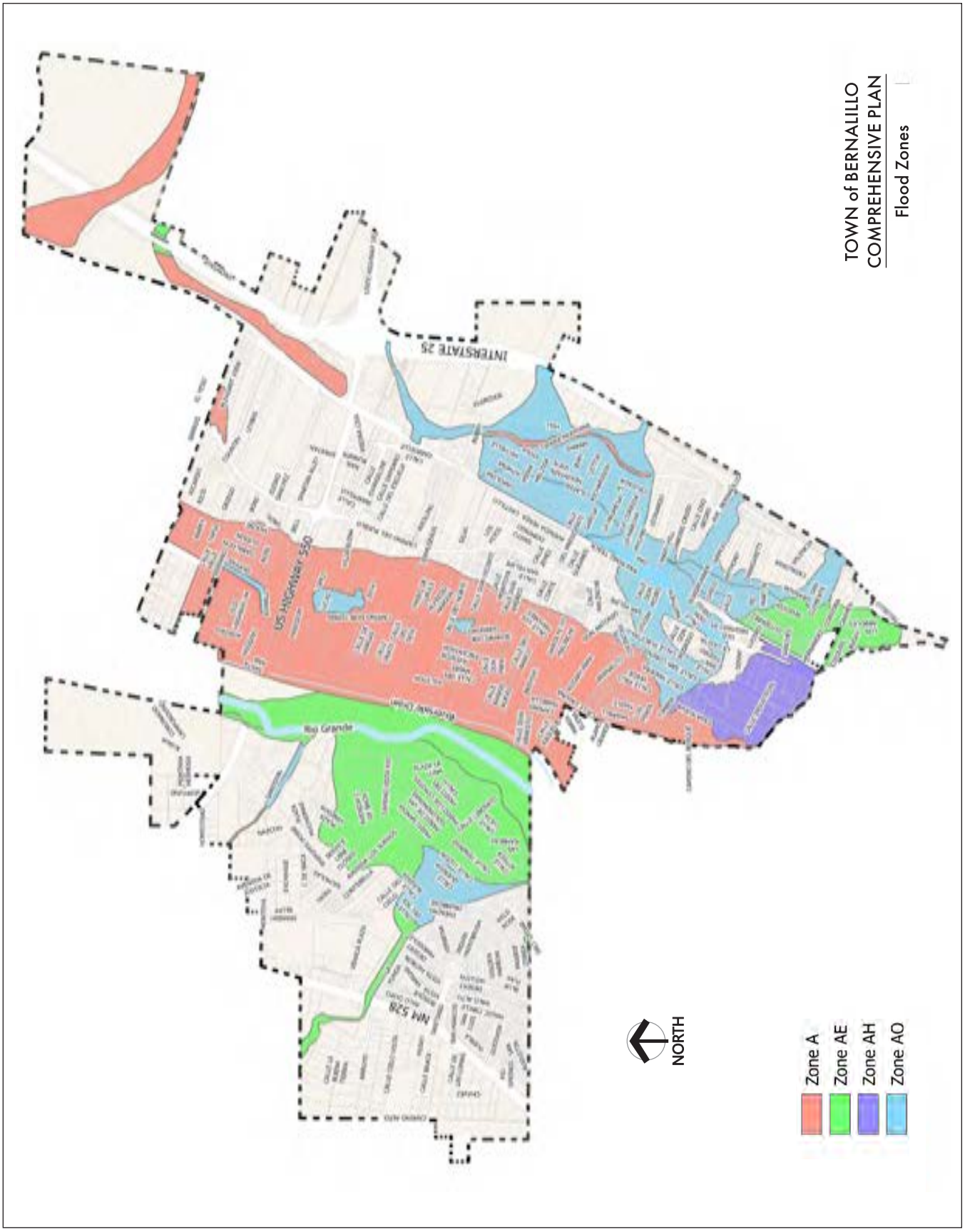
FLOODPLAIN MANAGEMENT

Flooding is a recurring risk in much of Bernalillo. The Town of Bernalillo participates in the National Flood Insurance Program (NFIP). As of August 2021, there were 235 flood insurance policies in effect in Bernalillo, offering $51.2 million in flood coverage. FEMA approved the current Flood Insurance Rate Map (FIRM) effective March 18, 2008. The FIRM maps are based on engineered Flood Insurance Studies that have designated areas likely to experience flood events. The widely-accepted standard for floods in the United States is the 1% annual average event commonly known as the "100-year flood". As shown on the Flood Zones Map on page 108, Zones A or AE are mapped to represent areas subject to the 1% annual chance of flooding.

The area closest to the Rio Grande on its east side is mapped as general Zone A without base flood elevations. Areas along N. Hill Road are also mapped as Zone A. The area west of the levee is mapped as Zone AE with base flood elevations, with areas of Zone AO for shallow flooding. The Bernalillo Industrial Park area is mapped as Zone AH for shallow (pond) flooding. There is a large area along Avenida Bernalillo and north along the east side of the railroad tracks mapped as Zone AO for shallow flooding, with average depth of one or two feet indicated. There is a smaller area south of this mapped as Zone AE.

In October 2021, FEMA began phasing in the Risk Rating 2.0 flood insurance premium system. Approximately 46% of property owners with flood insurance policies in zip code 87004, including Bernalillo, will be assessed higher premiums due to more detailed analysis of flood risks. FEMA is also in the process of completing a map update at the time of this writing.

Bernalillo has experienced significant flood events. One of the largest events took place on September 30, 1949, when a storm in the Sandia foothills produced a flash flood with water running five feet deep through Bernalillo, destroying structures, closing two schools, and washing out parts of US 85 (Camino


TOWN of BERNALILLO
COMPREHENSIVE PLAN
Flood Zones
INTERSTATE 25
US HIGHWAY 550
Rio Grande
NM 528
NORTH
Zone A
Zone AE
Zone AH
Zone AO

del Pueblo). In July 2013, widespread flooding was reported in Bernalillo due to heavy rainfall and a breached acequia along Carolina Drive, with up to five feet of water. In July 2018, flash flooding twice closed US 550 near the intersection of NM 428, resulting in damage to vehicles.

No Adverse Impact Floodplain Management

The Town of Bernalillo designated flood mitigation as a priority of the multi-jurisdictional *Sandoval County Natural Hazard Mitigation Plan (see Section 9.5)*. Approaches such as No Adverse Impact (NAI) floodplain management, developed by the Association of State Floodplain Managers and tested in communities across the country, offer proactive strategies to reduce the impacts of flooding rather than taking a heavy-handed regulatory approach. NAI's building blocks include better hazard identification and mapping, education and outreach, review of regulations and development standards, mitigation, infrastructure, and emergency services.

FEMA's Community Rating System (CRS) works hand-in-hand with the NAI floodplain management approach. Communities can voluntarily join the CRS by meeting certain benchmarks, and in return, flood insurance policy holders receive discounts on premiums. The community received a class rating based on commitment to engage in public information, mapping and regulatory review, flood damage reduction, and flood preparedness activities. The CRS reporting requirements can be a challenge for a smaller community with limited staff capacity. As of October 1, 2021, there were 11 communities in New Mexico eligible to participate in the CRS, in class 7-10 with discounts of up to 15% on flood insurance premiums.

STORMWATER MANAGEMENT

The Town of Bernalillo is a participant in the regional Middle Rio Grande Watershed Based Municipal Separate Storm Sewer System (MS4) Permit, NPDES Permit No. NMR04A000 ("WSB MS4 Permit"). The watershed-based permit is a pilot program of the EPA intended to address ecological stressors within a hydrologically-defined drainage basin rather than a typical political boundary.

Bernalillo participates in regional stormwater quality outreach efforts of the Mid Rio Grande Stormwater Quality Team, managed by the Southern Sandoval County Arroyo Flood Control Authority (SSCAFCA) and other partners. The Middle Rio Grande MS4 Technical Advisory Group cooperative, managed by the Albuquerque Metropolitan Arroyo Flood Control Authority (AMAFCA), conducts required MS4 stormwater compliance monitoring. The New Mexico Environment Department has established a Total Maximum Daily Load (TMDL) for E. coli on the stretch of the Rio Grande through Bernalillo. The Town of Bernalillo drafted a Storm Water Management Plan (SWMP); however, it has not been implemented.

STORMWATER MANAGEMENT AUTHORITIES

The Town of Bernalillo manages stormwater and flooding in partnership with regional agencies, including the Middle Rio Grande Conservancy District (MRGCD), Eastern Sandoval County Arroyo Flood Control Authority (ESCAFCA), and Southern Sandoval County Arroyo Flood Control Authority (SSCAFCA).

Middle Rio Grande Conservancy District

The MRGCD is an independent political subdivision formed under the New Mexico Conservancy Act in 1925. The board is comprised of seven members, including three from Bernalillo County, one member each from Sandoval, Socorro, and Valencia counties, and one at-large position.

The MRGCD provides flood control and irrigation to farmland from Cochiti Dam to the Elephant Butte Reservoir, approximately 150 miles along the Rio Grande. Extensive improvements were completed in the 1950s and funded by the federal Middle Rio Grande Project; however, FEMA has required that older levees be recertified by professional engineers and accredited as meeting modern flood control standards.

The MRGCD requires access to its facilities to ensure water conveyance flows through Bernalillo and continues downstream in accordance with federal trust agreements with tribal governments. Maintaining access for the MRGCD's operations and maintenance is of critical importance.

The MRGCD maintains the levee along the Atrisco Feeder/Riverside Drain and the Albuquerque Main

Albuquerque Main Canal west of Rotary Park.

Canal that protects much of the Bernalillo community east of the Rio Grande from seasonal flooding. There are several acequias that provide water for irrigation, including the Bernalillo Acequia running parallel to the railroad tracks, Sandia Acequia south of US 550, and the Bosque Lateral north of Old Highway 44. There are currently 129 properties in Bernalillo with ditch access. In 2020, 57 properties encompassing 107 acres were actively being irrigated. The list of MRGCD facilities in Bernalillo and their relative length is provided below in Table 7.1.

TABLE 7.1: MRGCD FACILITIES IN BERNALILLO

Facilities	Miles
Albuquerque Main Canal	1.92
Atrisco Feeder	1.21
Bernalillo Acequia	3.18
Bernalillo Interior Drain	0.43
Bosque Lateral No. 1	0.40
Mercantile Lateral	0.01
Ranchitos Interior Drain	0.64
Sandia Lateral	2.39

Source: Middle Rio Grande Conservancy District, 2020.

The Ranchitos Interior Drain is intended to provide protection from high groundwater and stormwater in the area north of Old Highway 44. The Bernalillo Interior Drain provides an outlet for a stormwater detention facility on Camino del Bosque and drains the Bernalillo Industrial Park. The MRGCD owns these irrigation and drainage facilities, except for the Bernalillo Acequia, for which MRGCD has a combination of fee simple ownership and acquired and prescriptive easements.

While irrigation and flood control remain the MRGCD's primary focus, its facilities are popular amenities for outdoor recreation and trail users; however, the District continues to have concerns with potential liability. Natural and cultural resources have also taken on an increasingly important role with the MRGCD, as active monitoring and scientific research informs management of the health of the Rio Grande and Bosque.

MRGCD Conservation Program

The MRGCD Conservation Program is a pilot project intended to increase resilience to variable water supply, sustain healthy agriculture, and maintain a healthy Rio Grande ecosystem. A Conservation Advisory Committee is advising on the design of the program. Early initiatives under consideration range from water delivery and on-farm irrigation efficiency improvements to voluntary water leasing and habitat restoration.

Rio Grande Silvery Minnow

The Rio Grande Silvery Minnow (Hybognathus amarus) was listed as an Endangered Species in 1994, with a range in the Middle Rio Grande basin from Cochiti Lake south to Elephant Butte Reservoir. In 2016, the U.S. Fish and Wildlife Service (USFWS)

completed a biological opinion to the Bureau of Reclamation, Bureau of Indian Affairs, MRGCD, and the State of New Mexico, providing Endangered Species Act coverage for water-related activities in the Upper and Middle Rio Grande. In 2018, the USFWS completed a 5-year review of recovery efforts. The MRGCD has adjusted river operations and water management, undertaken habitat restoration and enhancement, and worked with partners on storage of conservation water to meet requirements of the Endangered Species Act.

Southern Sandoval County Arroyo Flood Control Authority

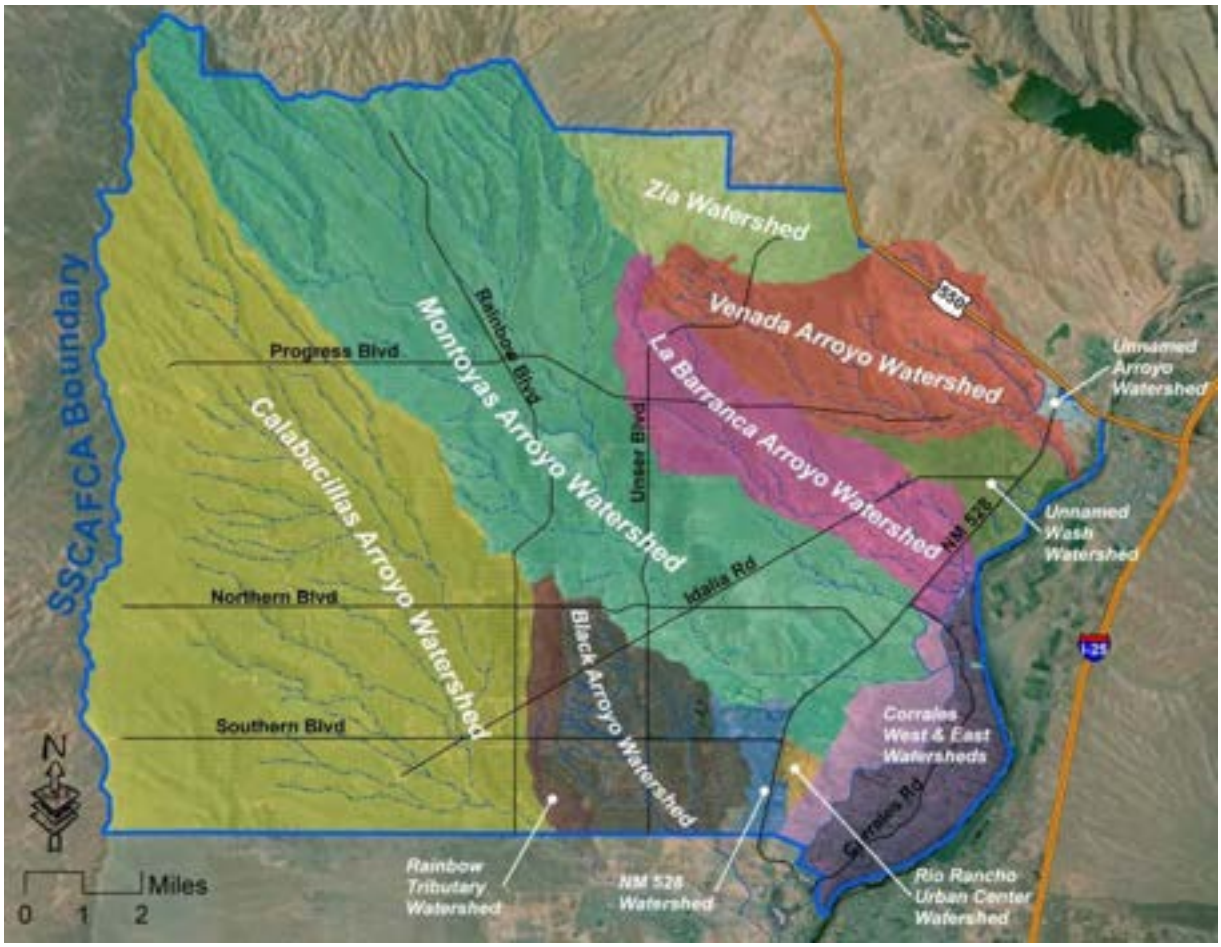
The Southern Sandoval County Arroyo Flood Control Authority (SSCAFCA) is an independent corporate political body, formed in 1990, with an elected board that is entrusted with flood and storm water control. The SSCAFCA acquires, improves, and operates flood and storm water control facilities on streams and watersheds that enter, originate in, or cross the SSCAFCA boundaries in southern Sandoval County, including the Town of Bernalillo. The SSCAFCA also participates in hazard mitigation planning and implementation in Sandoval County *(see Section 9.3 for more detail on hazard mitigation)*.

The primary goals of the SSCAFCA include:

- Provide flood protection up to the 100-year storm for the public health, safety, and welfare of residents and properties within its boundaries;
- Recognize the value of land purchased or controlled for floodways as areas with multi-use potential;
- Reduce sediment and erosion within the boundaries of the flood control authority; and
- Assist in the coordination of flood control with other entities for the common good of the public.

The SSCAFCA works with the Town of Bernalillo to achieve the above-stated goals and provide flood control-related planning, design, construction, maintenance, and regulatory oversight for development within its jurisdictional boundaries. Three watersheds in

REGIONAL WATERSHEDS



Bernalillo are maintained by the SSCAFCA, including a small "Unnamed Arroyo Watershed" located south of US 550. The Venada Arroyo Watershed includes the Enchanted Hills Detention Dams. The "Unnamed Wash Watershed" is centered on Idalia Road on Bernalillo's southwest boundary.

Eastern Sandoval County Arroyo Flood Control Authority

The Eastern Sandoval County Arroyo Flood Control Authority (ESCAFCA) is an independent political authority, formed in 2007, with an elected board to serve the Bernalillo and Algodones area east of the Rio Grande. The ESCAFCA's mission is to facilitate knowledge of floodplain management, erosion control, and environmental stewardship, implemented through the following:

- Flood control and watershed management;
- Controlling and approving new building and development;
- Environmentally sensitive land maintenance; and
- Multi-purpose flood control projects with walking trails and access to natural habitat.

Prior to construction of Interstate 25, a system of small ditches provided a path for stormwater from the Sandia Mountains to arroyos and the east bank of the Rio Grande. Much of ESCAFCA's work is focused on restoring the small drainage facilities so the system of arroyos work property to convey stormwater.

In addition to a series of drainage plans and needs assessments, the ESCAFCA has completed several watershed management projects, such as the Athena Pond and Collection System that stores runoff at Athena Park in eastern Bernalillo. In 2019, the ESCAFCA entered into a Memorandum of Understanding with the MRGCD to begin planning for the multi-phased Bernalillo Acequia Flood Control Project. This effort is intended to improve efficiency of irrigation water delivery while better managing stormwater runoff.

LOW IMPACT DEVELOPMENT

Innovative design approaches, such as Low Impact Development (LID) and Green Stormwater Infrastructure (GSI), offer options that allow stormwater to infiltrate the ground rather than be conveyed through pipes. These approaches are intended to mimic natural processes to protect water quality. The 2019 Federal Water Infrastructure Improvement Act defines green infrastructure as "the range of measures that use plant or soil systems, permeable pavement or other permeable surfaces or substrates, stormwater harvest and reuse, or landscaping to store, infiltrate, or evapotranspirate stormwater and reduce flows to sewer systems or to surface waters." Common techniques include bioretention or rain gardens, bioswales, infiltration trenches, and pervious pavement. The US Environmental Protection Agency (EPA) has supported these types of innovations in its Municipal Separate Storm Sewer System (MS4) program to manage non-point source pollution.

7.5 ELECTRICITY and NATURAL GAS

PUBLIC SERVICE COMPANY OF NEW MEXICO

Electric service in Bernalillo is provided by PNM. The investor-owned utility is the largest electricity provider in New Mexico. Holding company PNM Resources has proposed a merger with Avangrid Inc., an energy and utility company with operations in 24 states operating as a subsidiary of Spanish firm Iberdrola, S.A. This is not anticipated to have an impact on the delivery of electric services.

RENEWABLE ENERGY

New Mexico's geography, sunlight, and wind make it a prime location for renewable energy generation. The State of New Mexico's Energy Transition Act (Senate Bill 489, codified as §62-18-1 *et seq.* NMSA 2019) requires investor-owned utilities to generate 100% of their electricity from carbon-free resources by 2045. The Town of Bernalillo has planned to install solar energy generation and energy-efficient fixtures, as well as electric vehicle charging stations, at certain municipal facilities. The Town allows solar generation in all zones and does not charge a fee for review. The Town should consider how to encourage renewable energy generation by individual property owners.

NEW MEXICO GAS COMPANY

Natural gas utility service in Bernalillo is proved by the New Mexico Gas Company. The Albuquerque-based investor-owned utility is an operating company of the

Canadian energy firm Emera and is the largest natural gas provider in New Mexico.

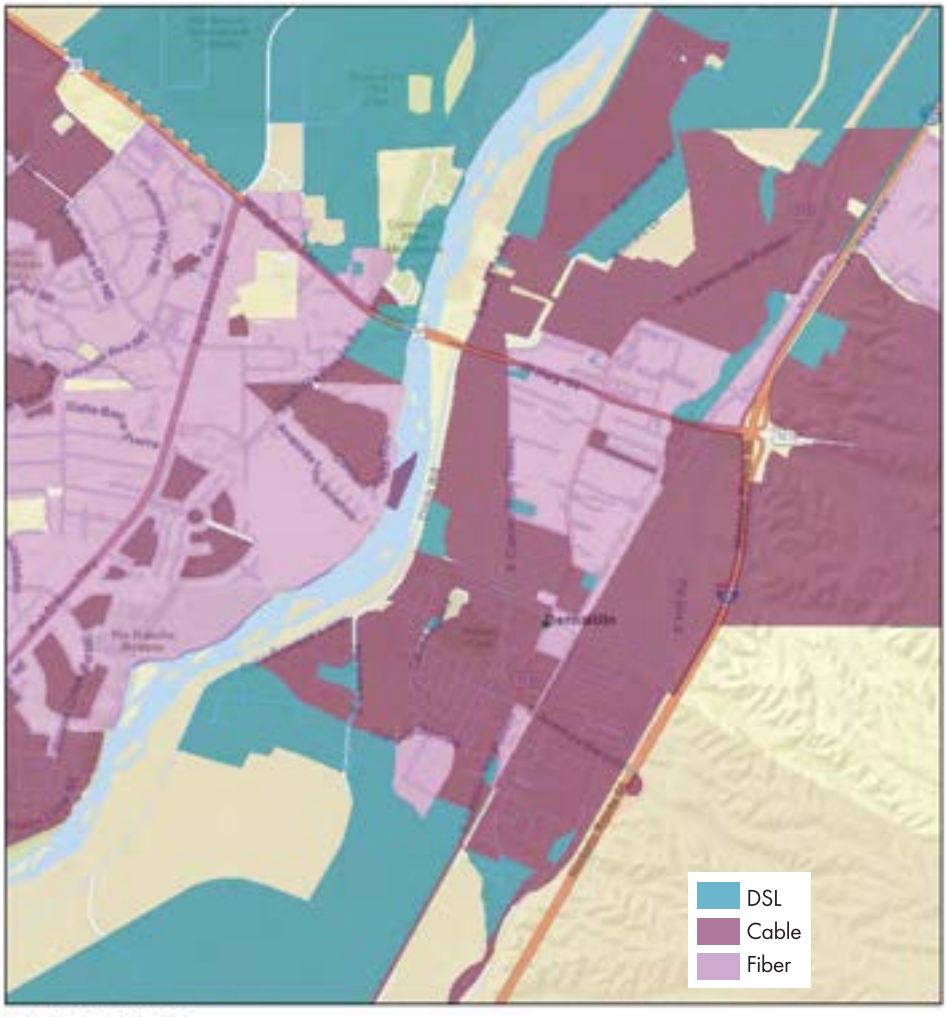
ENERGY CONSUMPTION

The US Department of Energy Office of Energy Efficiency & Renewable Energy estimates that as of 2016, the average energy consumption and expenditures for electricity and natural gas were lower in Bernalillo than the national average. Models programmed by the National Renewable Energy Laboratory (NREL) project that net energy consumption in Bernalillo will decline between 2020 and 2050, which would require continued energy conservation and efficiency efforts.

7.6 TELECOMMUNICATIONS

Centurylink is the incumbent local exchange carrier for telephone and broadband service in Bernalillo. National cellular telephone providers including AT&T, Sprint, T-Mobile, and Verizon also serve the area. The New Mexico Broadband Map *(see below)* shows limited areas of Bernalillo are provided fiber optic service by Level 3 Communications, LLC; Unite Private Networks, LLC; and FastTrack Communications, Inc. Most of the community is served by cable provider Comcast Cable Communications, LLC. Several fixed wireless broadband providers serve the area.

Installing conduit during road construction projects is one way to reduce costs of providing broadband fiber optic service. Many cities have followed the State of New Mexico's lead and adopted a "Dig Once" policy to reduce excavation costs, minimize disruption in public rights-of-way, and encourage broadband deployment. "Dig Once" typically requires installation of conduit whenever a trench is opened in a public right-of-way. The conduit is then available later when providers are ready to extend fiber optic lines.



NEW MEXICO BROADBAND MAP

7.7 SOLID WASTE

Solid waste collection services for residential, commercial, and roll-off services in Bernalillo are provided by a private company under contract with the Town of Bernalillo. Curbside trash pick-up is provided on a weekly basis and recycled materials are picked up twice a month. Hazardous waste, food waste, Styrofoam, glass, and food containers are not accepted for recycling. Household hazardous waste must be taken to the Sandoval County Landfill directly.

SANDOVAL COUNTY LANDFILL

The Sandoval County Landfill and Composting Facility is located at Iris Road and Paseo del Volcan in Rio Rancho. The 144-acre lined landfill opened in 1972 and is currently permitted to operate for the next 35 years. The Landfill also accepts recycling material from Sandoval County residents, including cardboard, consumer electronics, and appliances. Televisions, tires, and household hazardous waste are accepted for an additional fee.

Through its "Keep Bernalillo Beautiful" initiative, the Town of Bernalillo hosts several free solid waste collection events each year in the spring and fall at the Public Works Yard and at the Sandoval County Landfill. These events provide free collection of yard debris, trash, and expired and/or unused prescription medication.

7.8 CAPITAL IMPROVEMENTS

INFRASTRUCTURE CAPITAL IMPROVEMENT PLAN (ICIP)

The Town of Bernalillo's FY2023-2027 ICIP includes four infrastructure related projects, as shown below in Table 7.2.

The WWTP improvements consist of purchasing, replacing, and/or installation of disinfection equipment, wash water pump station, mechanical screen, aerated grit equipment, fall protection at Aero Mod treatment ponds, and a post-aeration system. The planned water system improvements are intended to upgrade facilities and repair leaks in southeast Bernalillo, and on Calle Don Francisco and Calle Presidente. This project builds on previous water system improvements in Mountain View and Perea subdivisions. The asset mapping and management project will address GIS mapping needs to assist the Public Works Department in short and long range planning and management of its utility systems.

TABLE 7.2: FY2023-2027 - INFRASTRUCTURE CAPITAL IMPROVEMENTS

Project Title	FY2023	FY2024	FY2025	FY2026	FY2027	Total Cost
Wastewater Treatment Plant Improvements (WWTP)						
	$1,000,000	$1,000,000	-	-	-	$2,000,000
Water System Improvements Phase 4						
	$2,000,000	-	-	-	-	$2,000,000
Water Department Excavators						
	$160,000	-	-	-	-	$160,000
Utilities - Asset Mapping & Management						
	$750,000	-	-	-	-	$750,000

Source: Town of Bernalillo.

7.9 GOALS, OBJECTIVES, & STRATEGIES

INFRASTRUCTURE GOAL 1

Maintain a safe and reliable domestic water supply.

Objectives

- *To ensure the long-term resiliency of Bernalillo's groundwater supply.*
- *To ensure a redundant water supply for emergency purposes.*
- *To mitigate water contamination issues caused by naturally occurring arsenic, septic tanks, and other point and non-point sources of contamination.*

Infrastructure Strategy 1.1

Identify and secure funding for water storage improvements and replacement of water storage tanks and wells, as needed. This should include an Arsenic Treatment System for Well Site #2 located east of Interstate 25 and north of US 550.

Infrastructure Strategy 1.2

Continue to provide water quality reports to the public on an annual basis to educate citizens about water quality and the importance of preventative measures, and provide opportunities for making informed decisions regarding the Town's drinking water.

Infrastructure Strategy 1.3

Sponsor community events on a quarterly basis for the collection of household hazardous waste and to educate the public on the proper disposal of hazardous materials, such as tires, fertilizers, paint and paint thinner, gasoline, pesticides, anti-freeze, batteries, fluorescent light bulbs, household cleaning products, etc.

INFRASTRUCTURE GOAL 2

Provide and maintain an efficient and optimized water distribution system.

Objectives

- *To ensure there is adequate capacity to meet current demand for water services and accommodate future growth.*
- *To systematically plan and provide funding for replacement of aging water distribution system components.*

Infrastructure Strategy 2.1

Prepare a Water System Master Plan that includes the following components:

- Background information on the Town's water system (water pressure zones, treatment, storage, transmission, and distribution components);
- Development of a hydraulic model for the Town's water distribution system to evaluate the water system for the current and future capacity of the transmission;
- Distribution and storage system;
- Improvements, replacements, and expansions to correct deficiencies and meet future demands;
- Annual review as funding becomes available and projects are completed; and
- Coordination with the Town's capital outlay program and any other available funding sources.

Infrastructure Strategy 2.2

Develop an Operations and Maintenance (O&M) Plan that includes the following components:

- Water system maintenance programs;
- Standard operating procedures;
- Emergency response plan;
- Employee safety program;
- Rehabilitation and replacement schedule; and
- Capacity assurance planning.

Infrastructure Strategy 2.3

Pursue and secure funding for a GIS functional database that maps the Town's existing water distribution system. This strategy also includes providing updates to the database on an on-going basis as the system is expanded.

Infrastructure Strategy 2.4

Prioritize and pursue capital outlay funding for improvements to the Town's water distribution system, including water line extensions; replacements and repair of leaks; and looping and properly sizing water lines to generate more fire flow.

INFRASTRUCTURE GOAL 3

Promote the sustainable management of water resources through water conservation.

Objectives

- *To ensure the water supply can meet the needs of the community during drought conditions.*
- *To conserve potable water for drinking purposes.*
- *To decrease water system loss cause by leaking water distribution lines.*
- *To use treated effluent for irrigation of public parks and recreational fields.*

Infrastructure Strategy 3.1

Complete the update to the Town's Municipal Water Conservation Plan and implement projects that will improve the operational efficiency of the Town's water supply and distribution system.

Infrastructure Strategy 3.2

Implement a Water Loss Control Program consisting of the following components:

- Water audits to identify and quantify water uses and losses from the Town's existing wells, water storage tanks, and water distribution system;
- Replacement of water meters and repair of leaking water system components; and
- Periodic evaluation of water rates, with adjustments as needed.

Infrastructure Strategy 3.3

Develop a public education program on water conservation measures for residential and commercial customers that emphasizes the importance of repairing water leaks, installation of high efficiency plumbing fixtures, conversion of cool season turf grass with native or low water use landscape materials appropriate for Bernalillo, and water conservation initiatives at area hotels.

Infrastructure Strategy 3.4

Determine the feasibility of developing a water reuse system that would replace the use of potable water with treated effluent for irrigation at public park facilities.

INFRASTRUCTURE GOAL 4

Maintain a safe and efficient wastewater collection and treatment system.

Objectives

- *To ensure there is adequate capacity to meet current demand for sewer services and accommodate future growth.*
- *To systematically plan and provide funding for replacement of aging wastewater collection and treatment components.*
- *To determine the feasibility of extending sewer services to properties currently served with municipal water and utilizing septic systems.*
- *To maintain compliance with Pueblo of Sandia and federal standards for discharging treated water into the Rio Grande.*

Infrastructure Strategy 4.1

Develop a Wastewater System Master Plan that contains the following components:

- Information and metrics on the Town's existing wastewater collection system and current wastewater contribution rates;
- Future wastewater flow projections;
- Computer modeling to evaluate the wastewater system with regard to the current and future capacity of the wastewater system;
- Recommendations where expansion, upsizing, repair, or upgrading is needed to correct deficiencies and meet future demand; and
- Coordination with the Town's capital outlay program and other available funding sources.

Infrastructure Strategy 4.2

As identified in Infrastructure Strategy 2.3, pursue and secure funding for a GIS functional database that maps the Town's existing wastewater collection system. This strategy also includes providing updates to the database on an on-going basis as the system is expanded.

Infrastructure Strategy 4.3

Replace or rehabilitate old and deteriorated manholes in the wastewater collection system to prevent infiltration.

Infrastructure Strategy 4.4
Conduct ongoing sampling and analysis for water quality to remains in compliance with Pueblo of Sandia and federal standards associated with treated water discharge to the Rio Grande.

Infrastructure Strategy 4.5
Prioritize and secure capital outlay funding for the ongoing replacement of old and deteriorated sewer lines and lift stations; improvement and expansion to the Town's wastewater treatment system to address capacity issues; development of a SCADA system; and the purchase of a new vacuum truck.

Infrastructure Strategy 4.6
Design and secure funding for the phased expansion of sewer services to properties within the Town of Bernalillo currently utilizing septic systems, including but not limited to, unserved properties along Hill Road, between the Bernalillo Industrial Park and the Rio Grande, and areas west of NM 528.

INFRASTRUCTURE GOAL 5
Provide and maintain a safe stormwater drainage system to minimize losses to public facilities and private property.

Objectives
- *To protect the community from major storm events and flash flooding.*
- *To help preserve property values and lower flood insurance rates.*
- *To systematically plan for and make improvements to stormwater drains, acequias, arroyos, and detention facilities.*
- *To encourage on-site detention of stormwater, water harvesting, and Low Impact Development approaches.*

Infrastructure Strategy 5.1
Develop and implement a Drainage Management Plan that addresses:

- Coordination with the Southern Sandoval County Arroyo Flood Control Authority (SSCAFCA) and the Eastern Sandoval County Arroyo Flood Control Authority (ESCAFCA) on their respective assessments and determination of existing watershed conditions and areas at risk of flooding within and adjacent to Bernalillo;
- Coordination with the Middle Rio Grande Conservancy District (MRGCD) on maintenance and improvements to acequias and conveyance structures within its jurisdiction;
- Identification of Town-led projects to improve drainage retention and detention in areas at risk for flooding; and
- Engineering cost estimates for the improvements.

The Drainage Management Plan should be reviewed on an annual basis as funding becomes available and projects are completed, and coordinated with the Town's capital outlay program and other available funding sources.

Infrastructure Strategy 5.2
Prioritize and construct stormwater drainage improvements to minimize the risk of flooding in Bernalillo, as identified in the Drainage Management Plan.

Infrastructure Strategy 5.3
Incorporate and allow Low Impact Development (LID) techniques in the Town's Subdivision Ordinance that address stormwater detention and retention, such as water harvesting, bioretention, cisterns, rain gardens, permeable pavement, etc.

INFRASTRUCTURE GOAL 6
Expand community access to affordable, high-speed broadband services.

Objectives
- *To provide sufficient bandwidth required to support residents working from home.*
- *To support residents' and business owners' access to online economic opportunities and high-speed broadband services.*

Infrastructure Strategy 6.1
Engage in a dialogue with existing and prospective telecommunication providers on improving and expanding high-speed broadband services in Bernalillo.

Infrastructure Strategy 6.2

Adopt a "Dig Once" policy that requires public and private excavators to coordinate with the Town of Bernalillo Public Works Department on installing fiber conduit during construction within public rights-of-way.

INFRASTRUCTURE GOAL 7

Increase community participation in reducing, reusing, and recycling activities.

Objectives

- *To provide education on the benefits of reducing, reusing, and recycling.*
- *To extend the life of the Sandoval County Landfill by diverting recyclable materials.*
- *To increase the capture rate of recyclable materials that can be used to manufacture new products.*

Infrastructure Strategy 7.1

Develop a public education program on the benefits of reducing, reusing, and recycling; encourage the community to participate in the recycling program; and prevent the contamination of recyclable materials. Include metrics on the amount of waste that has been diverted from the Sandoval County Landfill.

Infrastructure Strategy 7.2

Coordinate with Road Runner Waste Service on determining the cost of providing and servicing additional recycling bins in public locations.

Infrastructure Strategy 7.3

As part of Bernalillo's Keep Bernalillo Beautiful initiative, continue to sponsor community events for the collection of yard waste, trash, and unused medication.

Infrastructure Strategy 7.4

Work with the New Mexico Environment Department, Solid Waste Bureau on developing a waste reduction program that includes electronic devices and household hazardous waste.

Infrastructure Strategy 7.5

Coordinate with and co-sponsor community events with the Middle Rio Grande Conservancy District (MRGCD) for removing trash within the Rio Grande Bosque.

CHAPTER 8

COMMUNITY SERVICES & FACILITIES

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8.1 INTRODUCTION

Community services and facilities enhance the lives of residents by providing safety and security, promoting health and well being through the provision of parks and recreation, enhancing education and lifelong learning, and supporting healthy outcomes. Creating a community that embraces and supports these quality of life services strengthens economic success and promotes strong community identity. The Community Services and Facilities element summarizes the essential services managed by the Town of Bernalillo and those provided by outside entities that provide essential services to the Bernalillo community.

8.2 PUBLIC SAFETY

Public safety entails protecting and safeguarding people and property from crimes, disasters, and other threats. Law enforcement is dedicated to upholding the laws of the community and working with local leaders and residents to create a safe place to live. Fire and rescue departments are responsible for mitigating and protecting the community from threats and hazards that can create loss of life and property. Bernalillo Police Department and Bernalillo Fire and Rescue protect and serve residents and are important elements in creating a higher quality of life in Bernalillo.

BERNALILLO POLICE DEPARTMENT

The Bernalillo Police Department headquarters is located at 739 Camino del Pueblo, just north of the Bernalillo Town Hall. The Police Department is fully staffed with 25 officers, two animal control officers, and two administrative staff. The Bernalillo Police Department utilizes accepted law enforcement techniques and practices, and has been successful at maintaining a high staffing level for a small community.

There is a desire to restructure command staffing to support operations and to consider pay assessment to draw more officers and staff. The Police Department partners with a private contractor for ongoing training for officers to meet state requirements. The trainer visits the Police Department once per month to ensure training is on a regular schedule. The average response time for calls is approximately three minutes. Dispatch services are adequate for emergency calls.

A CodeRed (Reverse 911) emergency alert system is available to Bernalillo residents that sign-up for the service.

Equipment

The Police Department replaces six patrol cars per year. The desire is to order six to eight per year in the future. The primary source for vehicle replacement is the Police Department's annual budget. The Police Department may be able to utilize grants and state funding for future replacement of equipment.

Community Engagement

Community engagement is an important activity for law enforcement agencies. Connecting with community members builds trust and open communication between law enforcement and the community members they are sworn to protect.

The Bernalillo Police Department is actively involved in the School Resource Officer program at Bernalillo Public Schools. The School Resource Officers work closely with the School District and Administration to provide community policing and security in public schools. During the summer months, officers participate in Cops in the Park, which allows police to interact with members of the community in an informal environment.

BERNALILLO FIRE DEPARTMENT

Bernalillo Fire Department operates out of two fire stations in Bernalillo. Station 141 is the Main Station and is located adjacent to the Bernalillo Town Hall. Administration offices are located near the Main Station. Station 142 is located west of the Rio Grande. Bernalillo Fire and Rescue provides staffing at each fire station with at least two firefighters to respond to emergencies on both sides of the Rio Grande.

The Bernalillo Fire and Rescue has a career fire and rescue staff of 14 and two administration staff. All Fire and Rescue staff are certified as Basic Emergency Medical Technicians (EMT), and five are certified as Intermediate EMT. The Fire Department includes one paramedic. There are four responders available for three shifts per day.

Volunteers are utilized chiefly for wildland fire suppression along the Rio Grande. The Department is working with Bernalillo High School to create a

Bernalillo Fire Department Administration Building.

Wildland Certification Program with funding provided by the state for Bosque wildland fire mitigation. The dual intent of the program is to add more volunteers to assist with wildland fires and to encourage local students to become career fire fighters.

The Fire Department would like to increase its staff to 18, with six staff per shift over the next six years. The Fire Department has also identified the need to increase administrative staffing, including adding an assistant fire chief and a fire inspector, as the Town is currently lacking in fire code inspection.

Training is an integral part of public safety. The Fire Department trains at the New Mexico Fire Academy in Socorro and also uses private vendors, such as Rescue Tactics and Training and V2 Training. The Fire Department often conducts joint training with Sandoval County Fire and Rescue. The Fire Department is trained in river rescue, but the ongoing drought has recently reduced the need for this service.

Staff are trained in various techniques, including:

- Wildland fire;
- Vehicle extrication;
- Swift-water rescue;
- Rope operation rescue; and
- Dedicated jump bags / Tactical casualty care course.

Future desired trainings include a Tactical Casualty Care Course for emergencies that contain multiple casualties. The Fire Department would also like to add a GIS data administrator to create a Community Risk Assessment database that would be easy to use and offer reliable data for staff.

Equipment and Facilities

The Fire Department has one 77-foot quint ladder truck, one engine, two brush trucks, and one rarely used ambulance. Sandoval County provides ambulance services to Bernalillo and the Fire Department assists with medical emergencies.

The Fire Department needs to replace one of its brush trucks that dates to 2013, and would like to create a 10-year equipment replacement plan with the Town Council. An equipment replacement program would allow the Fire Department to have a reliable funding source to update equipment regularly.

The existing fire stations are older buildings that are too small for modern vehicles. The Department would like to renovate Station 142 and replace the existing Main Fire Station with a larger station that would fit modern equipment. Replacement of the Main Fire Station would require a new site as the location next to Town Hall cannot support an expanded facility.

Insurance Services Office Score

An Insurance Services Office (ISO) fire rating is a score from one to 10 that indicates how well-protected a community is by the fire department. One is the best possible rating, and a score of 10 indicates the fire department did not meet ISO's minimum requirements. The ISO scores are used to help set homeowner insurance rates.

The Fire Department was last audited in 2016, where it received a score of "Class 5". The Fire Department expects a new audit in 2022 that will improve its ranking based on an increase in staffing levels and improvements to equipment.

8.3 PARKS, OPEN SPACE, and RECREATION

Parks and recreation provide essential public services. They are vital to the quality of life, the health of families and youth, contributing to the environment, and increasing the community's overall well-being. Public parks and recreation centers provide gathering spaces for families, social groups, individuals of all ages, abilities, and economic status.

Community Survey respondents said they visited Bernalillo Town Parks 1 to 2 times per week (19.5%), 2 to 3 times per month (10.3%), and 1 to 6 times per year (40%). Most respondents visited the Recreation Center 1 to 6 times per year (23.9%). Respondents chose parks (41%) as one of nine local amenities listed that should be improved or expanded.

PARK FACILITIES

The Town of Bernalillo maintains six public parks and the Bernalillo Recreation Center. The Bernalillo Public Works Department is responsible for maintaining the park facilities, which total 25.3 acres. Bernalillo public parks provide an array of amenities for all ages, including athletic fields, turf areas, playgrounds, and walking paths *(see Table 8.1)*. A new skate park and pump track opened at Rotary Park in 2022.

RIO GRANDE PUBLIC ACCESS

The Middle Rio Grande Conservancy District (MRGCD), Town of Bernalillo, and the New Mexico Paddlers Coalition have partnered on a proposal to create public access to the Rio Grande at the US 550 bridge. The access will allow boaters, birders, and anglers direct access to the Rio Grande. A gravel public parking area will be constructed between the Atrisco Feeder canal and the east bank of the Rio Grande, north of the bridge.

The MRGCD and Town of Bernalillo will construct gates and pipe rails to control vehicle access, two boat access ramps (upstream and downstream of the bridge), and picnic tables. Two boat ramps are required to portage around the old bridge abutments in the Rio Grande. As part of the project, the MRGCD will remove old concrete rubble from the site, rip invasive species, and revegetate the area with native plant materials. The New Mexico Paddlers Coalition will develop and install regulatory and interpretive signage. The MRGCD will require the Town of Bernalillo to obtain a license agreement to cross the MRGCD facilities north and south of US 550.

BERNALILLO RECREATION CENTER

The Bernalillo Recreation Center enhances the quality of life in Bernalillo by providing a safe, well-equipped facility with programming for all ages and a place to gather in times of emergency and hazard events. Most recently, the Recreation Center served as Bernalillo's Covid testing and vaccination site. The Bernalillo Recreation Center was chosen by 25% of respondents to the Community Survey as a facility that should be improved or expanded.

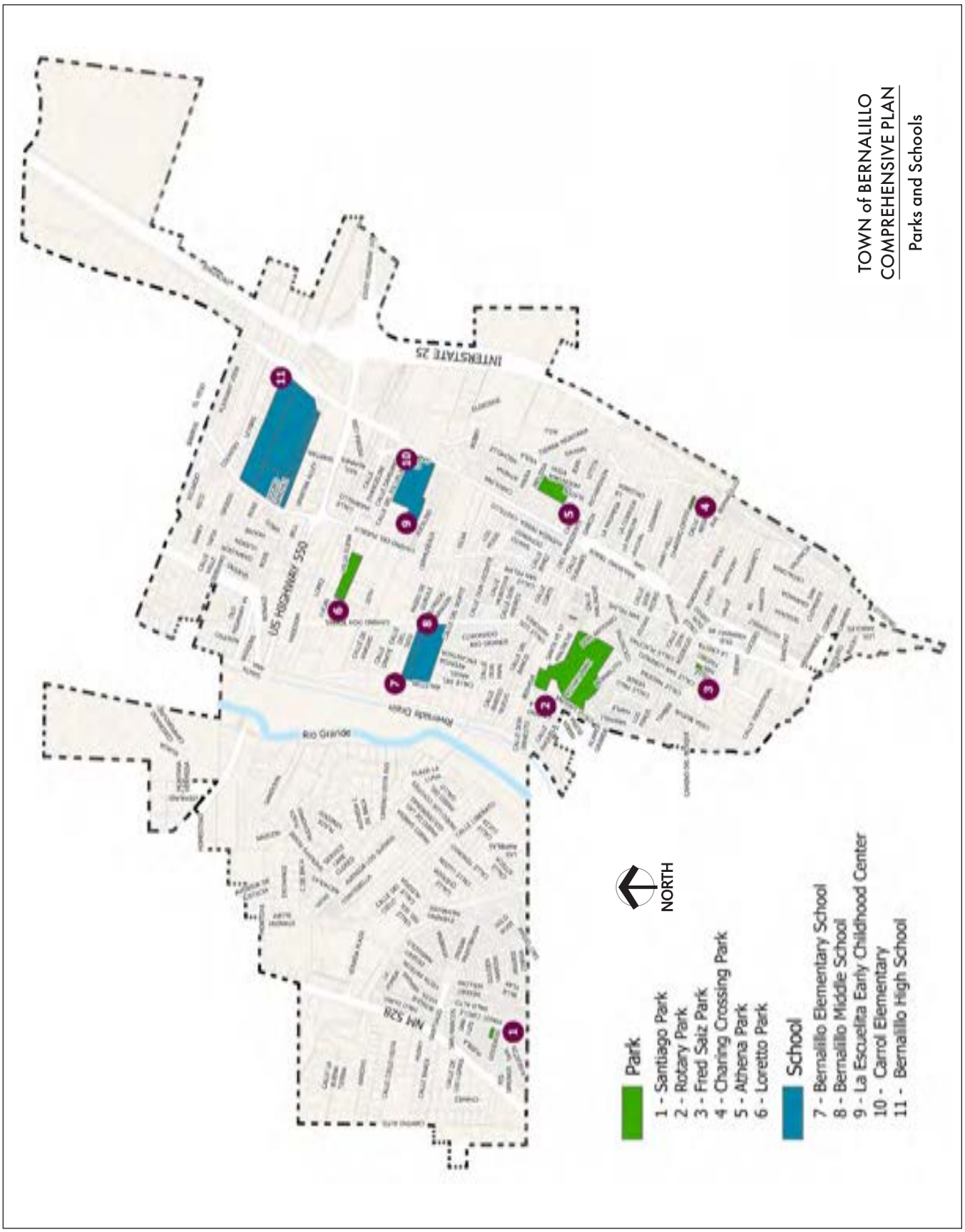
Facilities

The Recreation Center is located at 37 Rotary Park Road, adjacent to Rotary Park. The facility is approximately 15,000 square feet and contains a full-size gymnasium, a fitness center, and an outdoor swimming pool. The fitness center and gymnasium opened in 2001 and the swimming pool in 2005.

TABLE 8.1: PARK FACILITIES

Park	Address/Location	Acres	Amenities
Rotary Park	Rotary Park Road	15.0	Softball fields, baseball fields, Coronado Little League, concessions, volleyball, basketball courts, tennis, horseshoes, picnic areas, playground, skate park, and pump track
Loretto Park	237 S. Camino del Pueblo	7.5	Multi-purpose fields, restrooms, picnic areas, community center, soccer
Fred Saiz Park	1277 Calle Placitas	0.5	Basketball courts, picnic area, playgrounds
Charring Crossing Park	322 Charing Cross Loop	0.25	Walking loop, turf
Athena Park	710 Athena Avenue	1.0	Walking path, playground
Santiago Park	San Augustin Drive	1.05	Walking path, basketball courts, picnic table, turf, playground

Source: Town of Bernalillo.


TOWN of BERNALILLO
COMPREHENSIVE PLAN
Parks and Schools
INTERSTATE 25
US HIGHWAY 550
NM 528
Rio Grande
NORTH
Park
1 - Santiago Park
2 - Rotary Park
3 - Fred Saiz Park
4 - Charing Crossing Park
5 - Athena Park
6 - Loretto Park
School
7 - Bernalillo Elementary School
8 - Bernalillo Middle School
9 - La Escuelita Early Childhood Center
10 - Carrol Elementary
11 - Bernalillo High School

The facility is well maintained by the Town. Needed upgrades to the HVAC, roof, stucco, and gymnasium floor replacement have been completed or are ongoing. Upgrades are needed to the swimming pool, including piping and filter replacements.

Programming

The Recreation Center provides programming for youth through Camp Coronado and youth basketball leagues. It also partners with outside entities for adult and senior fitness.

Camp Coronado Summer Recreation Program

Camp Coronado is a 9-week summer program that begins in early June through early August. The program typically enrolls 150 campers ages five to twelve. Activities include swimming, arts and crafts, athletics, games, and other activities. All activities take place at the Recreation Center, outdoor fields and parks, and at the Martha Liebert Public Library.

Summer Youth Basketball Program

The Summer Youth Basketball Program enrolls approximately 170 to 180 participants. The program includes organized practices and games that are held at the Recreation Center. In addition to organized programming, the Recreation Center is popular with youth after school and on the weekend.

Adult and Senior Programming

The Recreation Center provides spaces for semi-organized groups to conduct fitness and athletic games, including indoor badminton, pickleball, zumba, and yoga. Sandoval County Senior Olympics uses the facility for shuffleboard and basketball events.

8.4 COMMUNITY FACILITIES

MARTHA LIEBERT PUBLIC LIBRARY

Public libraries provide a vital community service to all ages. Communities are reliant on public libraries for resources, inspiration, and social interaction. The Martha Liebert Public Library was founded in 1966 by a group of volunteers and continues to be an essential amenity serving the Bernalillo community.

Martha Liebert Public Library.

Roosevelt Building

The Martha Liebert Public Library is located in the two-story Roosevelt Building at 124 Calle Malinche. The Roosevelt Building is an adobe building, 10,000 square feet in size, that was designed and constructed under the Works Projects Administration (WPA) program in the 1930s. The building was originally a public elementary school that had fallen into disrepair. A joint effort between the Town of Bernalillo, Bernalillo Public Schools, and Sandoval County was made to restore the building, which was added to the New Mexico State Register of Cultural Properties and the National Historic Register in 1996.

The Library is programmed to accommodate all ages, with spaces that include:

- Two study rooms
- Two event rooms
- Adult computer room
- Adult reading room
- Children's room
- Children's reading area
- Young adult area
- Southwest Collection Room
- Non-resource area

The Martha Liebert Public Library is an important cultural asset. The Town can draw visitors to the Library by adding wayfinding signage along Camino del Pueblo. Maintaining the historic character of the Library with appropriate shelving, lighting, and furniture would help to highlight the cultural significance of the Roosevelt Building.

The Southwest Collection is a special collection of books and periodicals about the southwest that was started by Martha Liebert. The collection contains materials that focus on the history, geography, and culture of the southwest focusing on New Mexico. The collection is reserved for library use only and cannot be checked out.

Programming and Technology

The Library offers story time for young children throughout the year. Programming also includes a Summer Reading Program for children. During the school year, the Library promotes after school programming for youth in Bernalillo Public Schools. Adult programming includes English as a Second Language (ESL) classes and an Adult Series, which includes lectures and performances.

The Library is collaborating with the Bernalillo Community Museum on cultural programming. The Library and Museum would like to bring the services and facilities into harmony and create a "Cultural Campus" where residents and visitors can experience and learn about the culture of Bernalillo and its history.

Public libraries provide a vital community service by providing computers and internet access. The Martha Liebert Public Library provides 19 adult desktop computers and six children's computers. The Library also has ten laptop computers available for checkout. Personal devices can connect to the Library's Wifi which was recently upgraded to a 1 gigabyte circuit. The Library offers a large catalog of E-books through Overdrive New Mexico.

The Library desires to expand programming across all ages and demographic groups. Responses to the Community Survey reflect a need for outreach. Respondents that never visit the Library was 46.5% and those that visit 1 to 6 times per year was 32.4%. Outreach and additional programming would help attract new visitors and drive new programming.

Library Board

The Martha Liebert Public Library Board consists of three members and meets bi-monthly. The primary focus of the Library Board is to approve the 5-Year Strategic Plan and promote the Library to the Bernalillo community. The Mission of the Library Board is to provide free access to a wide variety of literary, educational, and informational resources and programming in a welcoming, community-focused environment. The goals identified by the Library Board in the 2020-2025 Strategic Plan included:

1. Provide an Excellent Facility
2. Staff Development
3. Expand and Update the Print Collection
4. Offer Additional Online Resources and Training
5. Increase Programming Options
6. Establish and Maintain Community Relations
7. Improve Marketing and Visibility
8. Operations Efficiency and Development
9. Theft Protection

BERNALILLO COMMUNITY MUSEUM

The Bernalillo Community Museum is located near Town Hall and the Martha Liebert Public Library. The Museum building holds significant cultural importance to the Bernalillo community. Constructed in the 1930s, the building originally functioned as a Baptist Church and contained the large sanctuary, smaller breakout rooms, and a courtyard. An addition to the original building involved connecting a home to the original building via a hallway, linking the two buildings together. The building was renovated in 2007 to house the Library and again in 2020 to make the building suitable for museum exhibitions *(see Section 3.6 for more information on the programming and exhibits at the Bernalillo Community Museum).*

Bernalillo Community Museum.

Renovations to the building include new stucco, interior painting, new flooring, upgraded lighting, and a new HVAC system. During the Covid-19 pandemic when indoor functions were limited, the Museum displayed exhibits in the outdoor courtyard which is also under renovation.

ESTABLISHMENT OF A CULTURAL CAMPUS

Creating a "Cultural Campus" that encompasses the area around the former W.D. Carroll Elementary School, Martha Liebert Public Library, Bernalillo Community Museum, and Bernalillo Town Hall is a concept that was discussed during the planning process *(see proposed Cultural Campus area map)*. Calle Malinche winds through the Cultural Campus connecting Camino del Pueblo to the east and Calle Don Francisco to the south. The western boundary of the Cultural Campus is Calle Don Tomas.

Cultural Campus area.

Since Bernalillo does not have a historic plaza, the Cultural Campus could function as a community gathering location for cultural events. The Cultural Campus can incorporate unique elements to define the area and to create a sense of place.

BERNALILLO SENIOR CENTER

The Sandoval County Senior Services Department owns and operates the Bernalillo Senior Center facility along with six others in Sandoval County. The Sandoval County Senior Program is dedicated to improving the quality of life of citizens by providing access to culturally sensitive and comprehensive health and social services. Seniors in Bernalillo are served by the Bernalillo Senior Center, which is located conveniently adjacent to Rotary Park and the Multi-purpose Recreation Center at 801 Rotary Park Road.

Meals and Transportation

The Bernalillo Senior Center provides congregate meals and home meal deliveries Monday through Friday from 11:30 AM to 12:30 PM. Meals are prepared in the on-site kitchen for the Pena Blanca, Jemez Valley, and Placitas senior centers. Registration is required for homebound meals, which can be prepared for individual dietary needs.

Transportation services are available for eligible and registered seniors. Seniors can receive transportation to the Bernalillo Senior Center for meals, activities, and recreational events. Group shopping trips and trips for recreational events are scheduled regularly. Senior can schedule assisted transportation for medical appointments, prescription pick-ups, activities, and local shopping and banking. Services located in Albuquerque and Rio Rancho are provided on specific days and must be scheduled 48-hours in advance.

Recreational Activities

There are variety of activities available for seniors at the Bernalillo Senior Center. Seniors can participate

Bernalillo Senior Center, owned and managed by Sandoval County.

in daily recreational activities, such as billiards, bingo, arts and crafts, and exercise classes. Day trips to Albuquerque, Santa Fe, surrounding Casinos, and other areas are offered regularly as are dances and other events at the Bernalillo Senior Center.

Frail and Elder Program

The Sandoval County Frail and Elder Program provides access to services that support frail and elderly persons and their families. The Bernalillo Senior Center assists seniors in registering for the program. Services available to eligible seniors include:

- **Non-Medical Case Management:** Needs assessments, coordination of medical services, assistance with Social Security and Medicare, and prescription plans.
- **Non-Medical Homemaker Services:** 1.5-hour visits per week to perform light housekeeping and preparation of meals.
- **Durable Medical Equipment Loan Program:** Short-term emergency assistance equipment, such as walkers, wheelchairs, and canes.
- **Non-Medical Caregiver Support:** Non-paid family caregivers in the same household information to available services, such as counseling and resource materials.
- **Non-Medical Respite Services:** Once a week respite for full-time, non-paid, family caregivers for homebound elders with priority given to those diagnosed with Alzheimer's or Dementia.

Non-Metro Area Agency on Aging

The Bernalillo Senior Center is supported by the New Mexico Non-Metro Area Agency on Aging (AAA). The Non-Metro AAA offers community-based services by contracting with local senior programs. Services include:

- Adult daycare
- Case management
- Chores
- Nutrition counseling
- Congregate meals
- Home delivered meals
- Homemaker services
- Respite care
- Transportation

Most of the AAA services are coordinated with providers at the local level. The North Central New Mexico Economic Development District (NCNM EDD), based in Santa Fe, oversees the AAA for Sandoval County.

8.5 COMMUNITY HEALTH

SANDOVAL COUNTY HEALTH STATUS

Health rankings for health outcomes and health factors are determined by the Robert Wood Johnson Foundation's County Health Rankings and Roadmaps. A ranking of "1" is assigned to the county with the healthiest outcomes and health factors.

Health outcomes are based on how long people live and how healthy people feel. Length of life is measured by years of potential life lost before age 75 and quality of life is measured by the percent of people reporting poor or fair health and the number of physically and mentally unhealthy days within the last 30 days and the percent of low-birth-weight newborns. Sandoval County ranked second in health outcomes out of the 33 counties in New Mexico.

County health factors are based on four metrics; health factors (tobacco use, diet and exercise, alcohol use, drug use, and sexual activity), clinical care (access to care and quality of care), social and economic factors (education, employment, income, family and social support, and community safety), and the physical environment (air and water quality, housing, and transit). Sandoval County ranked sixth among all counties in New Mexico for health factors.

CENTRAL NEW MEXICO COMMUNITY HEALTH ASSESSMENT

As part of the Patient Protection and Affordable Care Act, Presbyterian Healthcare Services completes a Community Health Assessment every three years to identify community health priorities and create implementation strategies. Presbyterian Healthcare Services partnered with Sandoval County Health Council to incorporate public participation and identify areas of improvement to community health. A Community Health Assessment for 2020-2022 presented public health priorities for Sandoval County and strategies to achieve greater health outcomes.

The priorities identified for Sandoval County in the Community Health Assessment included increasing behavioral health, healthy eating, and active living.

HEALTHCARE PROVIDERS

Given Bernalillo's location, residents can easily access emergency, specialty, and general medical care within a relatively short drive to Albuquerque or Rio Rancho. The following summarizes the health providers located within Bernalillo and those located in close proximity.

El Pueblo Health Services

El Pueblo Health Services is a non-profit community health center that provides comprehensive family health care to residents of Bernalillo and surrounding communities. El Pueblo serves over 5,000 patients per year and has a staff of twelve providers. It is the only primary health care provider in Bernalillo.

The El Pueblo Health Services provides a comprehensive list of services including:

- Family medicine
- Women's health
- Pre-natal care
- Teen health and Well Child Exams and immunizations
- Senior Care
- Behavioral Health
- Health education
- In house lab services

During the COVID-19 pandemic, El Pueblo was a partner in the distribution of vaccines and testing for the virus in Bernalillo. El Pueblo works with other service providers in the area, including UNM Health Services, UNM Department of Dental Medicine, and Community Dental Services.

UNM Sandoval Regional Health Center

The UNM Sandoval Regional Health Center in Rio Rancho's City Center is the nearest 24/7 acute care facility to Bernalillo. It is a community hospital and an academic healthcare facility that is connected to 1,700 providers in more than 150 specialties in the greater UNM Health System.

The Sandoval Regional Health Center facility is over 200,000 square feet in size and has 72 inpatient beds comprised of two 24-bed medical/surgical units, 12 intensive care beds, and 12 senior behavioral health beds. In addition to the hospital, the Sandoval Regional Health Center also has a medical office pavilion that houses physical therapy, administration, and primary and specialty care clinic spaces including:

- Ear, Nose, and Throat
- Family Medicine
- Cardiology
- Orthopedics
- General Surgery
- Physical and Occupational Therapy
- Pulmonary Care
- Urology

Presbyterian Rust Center

The Presbyterian Rust Medical Center is a comprehensive acute care hospital located on Unser Boulevard in Rio Rancho. The Rust Medical Center uses innovative design to create a patient-centered environment that promotes healing and recovery. The Medical Center promotes many programs and projects in Sandoval County, including mobile farmers' markets, cooking classes for people with diabetes, a backpack food programs, and blood drives.

8.6 PUBLIC EDUCATION

Public education is the cornerstone of community and economic well-being. Bernalillo is served by a strong public school district for K-12 education and residents have several nearby locations for post-secondary education and job training.

BERNALILLO PUBLIC SCHOOLS

The Bernalillo Public School District provides public education for Bernalillo and the surrounding area. School facilities are located in Bernalillo, Pueblo of Cochiti, Pueblo of Santo Domingo, Algodones, and Placitas. Within the Town of Bernalillo, there is one pre-k school, two elementary schools, one middle school, and one high school. The 2020-2021 total enrollment for the District was 2,842, of which 1,964 students are enrolled in the five Bernalillo schools.

Graduation Rates

Graduation rates are an important indicator of educational and career success over time. Compared

to adjacent school districts, Bernalillo Public Schools was shown to have a lower 4-year graduation rate. Between 2010 to 2020, graduation rates at Bernalillo Public Schools improved slightly by 2.2%.

TABLE 8.2: GRADUATION RATES			
School District	2010	2020	Change
Bernalillo	64.5%	66.7%	2.2%
Jemez Valley	91.0%	90.0%	-1.0%
Rio Rancho	74.6%	88.3%	13.7%
Santa Fe	53.2%	86.3%	33.1%
Moriarty-Edgewood	68.4%	77.6%	9.2%

Source: NM PED, 4-year Graduation Rates, 2010 and 2020.

District Facilities

Bernalillo Public School District replaced four schools in Bernalillo since 2009 utilizing funding from General Obligation Bonds and New Mexico Public Schools Capital Outlay funds:

- La Escuelita Pre-School, 2009
- Bernalillo Elementary School, 2010
- W.D. Carroll Elementary School, 2011
- Bernalillo High School, 2016-2017

The largest school project was the nearly full replacement of the 44-acre Bernalillo High School Campus. The project was funded nearly entirely through General Obligation Bonds. The new school facility included new classrooms in two separate wings, a new cafeteria, media center, black box theater, improved music facilities, and an outdoor central courtyard. Incorporated into the design were specialized classrooms for career technology classes that included features such as welding bays, commercial kitchens, and outdoor workspaces that support workforce training in the Bernalillo community.

TABLE 8.3: BERNALILLO PUBLIC SCHOOLS			
School	Address	Grades	Enrollment
La Escuelita Early Childhood	480 Calle del Norte	Prekindergarten	122
W.D. Carroll Elementary School	301 Calle de Escuela	Kindergarten – 2nd Grade	273
Bernalillo Elementary School	480 Calle del Norte	3rd – 5th Grade	325
Bernalillo Middle School	485 Camino don Tomas	6th – 8th Grade	450
Bernalillo High School	148 Spartan Alley	9th – 12th Grade	794
Total			1,964

Source: NM PED, 2020-2021 District Enrollment.

Bernalillo Middle School.

Bernalillo Public Schools Facilities Master Plan

New Mexico School District 5-year Facilities Master Plan is mandated by the State of New Mexico and administered by the Public Schools Facilities Authority for Districts to receive state matching funds for capital projects. The 2018-2022 Bernalillo Public Schools Facility Master Plan (GS Architecture) documents all District facilities capital improvement priorities and establishes a capital plan.

POST-SECONDARY EDUCATION

While there is not a post-secondary institution within Bernalillo, the community's proximity to urban areas provides residents with several options for post-secondary education relatively close to home. These institutions include the University of New Mexico and Central New Mexico Community College, both whose main campuses are located in Albuquerque, and New Mexico Highlands University located in Rio Rancho.

University of New Mexico

The University of New Mexico (UNM) is the largest post-secondary institution in New Mexico. It has been classified as an R1 Top Tier Research University by the Carnegie Classifications of Institutions. UNM offers a wide array of opportunities with over 25 certificate programs, 200 degree programs, and 90 undergraduate degree options with one of the most affordable tuitions in the country. Some of the most highly rated programs at UNM are the School of Medicine, which offers both primary and research

opportunities, School of Law, College of Fine Arts, and the College of Engineering. UNM has many branch campuses across New Mexico, including the UNM West Campus, which is co-located with the UNM Health Sciences Center at the Rio Rancho City Center.

Central New Mexico Community College

The Central New Mexico Community College (CNM) is the largest community college in New Mexico. CNM operates five campuses, including four in Albuquerque and one in Rio Rancho. A wide range of online and in-person courses are available to students, including Adult General Education; Applied Technologies; Business Information Technologies; Communication, Humanities, and Social Sciences; Health, Wellness, and Public Safety; and Math, Science, and Engineering. Program offerings include Associate Degrees, Training Certificates, dual-credit classes, High School Equivalency or GED, and classes that help prepare students for higher level college classes. CNM and UNM work closely to provide a seamless transition for students as they make progress in their educational pursuits. CNM also provides several Education Centers that offer specialized training and unique hands-on learning opportunities.

New Mexico Highlands University

New Mexico Highlands University is a four-year institution based in Las Vegas, New Mexico with campuses in Rio Rancho, Albuquerque, Santa Fe, Farmington, and Roswell. The Rio Rancho Campus offers distance learning courses and degrees in teacher education, business administration, social work, and arts and sciences. Students can begin their coursework at one of the branch campuses before transferring to the main campus in Las Vegas to complete their degrees.

8.7 INFRASTRUCTURE CAPITAL IMPROVEMENT PLAN (ICIP)

The Town of Bernalillo's FY2023-2027 ICIP includes 14 capital improvements related to public safety, parks, building improvements, and exhibits. Some of the most pressing issues for community facilities and services, particularly those related to fire and life safety, have been prioritized by the Town of Bernalillo, as shown in Table 8.4.

TABLE 8.4: FY2023-2027 CAPITAL IMPROVEMENTS - COMMUNITY FACILITIES

Project Title	FY2023	FY2024	FY2025	FY2026	FY2027	Total Cost
Solar Energy - Building Conversions						
	$100,000	$1,000,000	-	-	-	$1,100,000
Parks Improvements						
	$250,000	$1,083,334	$1,083,333	$1,083,333	-	$3,500,000
Parks - Beautification						
	$500,000	-	-	-	-	$500,000
Fire Station 2 Expansion						
	$25,000	$175,000	-	-	-	$200,000
Fire Department - New Station						
	$200,000	$2,500,000	$100,000	-	-	$2.800,000
Fire Apparatus Acquisition - Engine 142						
	$575,000	-	-	-	-	$575,000
Fire Apparatus Acquisition - Squad Truck						
	$275,000	-	-	-	-	$275,000
Fire Apparatus Acquisition - Rescue Unit						
	$130,000	-	-	-	-	$130,000
Martha Liebert Public Library RFI Project						
	$70,000	-	-	-	-	$70,000
Martha Liebert Public Library Remodel						
	$105,000	$810,000	-	-	-	$915,000
Molino Building Rehabilitation						
	$100,000	$700,000	$500,000	-	-	$1,300,000
Pavilion Floor and Roof Replacement						
	$300,000	-	-	-	-	$300,000
Bernalillo Historic Museum - Outdoor Exhibits						
	$570,000	-	-	-	-	$570,000
Bernalillo Historic Museum - Collections Management						
	$0	$50,000	-	-	-	$50,000

Source: Town of Bernalillo.

8.8 GOALS, OBJECTIVES, & STRATEGIES

COMMUNITY SERVICES & FACILITIES GOAL 1

Deliver and maintain a high level of public safety and emergency services in the Town of Bernalillo.

Objectives

- *To ensure the safety and security of all residents and visitors to Bernalillo.*
- *To ensure the Bernalillo Police and Fire Departments are adequately staffed, equipped, and receive on-going training.*
- *To ensure short response times to emergency calls for service and maintain the high Insurance Service Organization (ISO) rating of the Bernalillo Fire Department.*
- *To foster positive relationships between the Bernalillo Police Department and the community through engagement efforts.*

Community Services & Facilities Strategy 1.1

Work with the Bernalillo Police and Fire Departments on developing a comprehensive Public Safety Needs Assessment that includes:

- Data collection on past calls for non-emergency and emergency services, including ambulance transport, over the past five years;
- Identification of current and future program, training, and certification needs, including hazmat training;
- Identification of existing and future technology, equipment, vehicle, and dispatch needs for fire, police, and emergency transport; and
- Identification of existing and future staffing levels to maintain an excellent ISO rating and emergency response times.

Community Services & Facilities Strategy 1.2

Based on the Public Safety Needs Assessment, pursue and prioritize funding to purchase replacement equipment, vehicles, engine and ladder trucks; renovation of Station 142; and replacement of the Main Fire Station. The vehicle and equipment replacement program should prioritize expenditures over a 10-year planning horizon.

Community Services & Facilities Strategy 1.3

Provide on-going training and certification for current and future police officers, firefighters, and emergency medical technicians.

Community Services & Facilities Strategy 1.4

Participate in community events and informal meetings to solicit feedback from residents and business owners regarding public safety services in Bernalillo.

COMMUNITY SERVICES & FACILITIES GOAL 2

Provide and maintain an integrated system of park, trail, open space, and indoor recreation facilities.

Objectives

- *To promote health and wellness for residents of all ages through recreation.*
- *To ensure park facilities are equitably distributed and in reasonable proximity to neighborhoods and schools.*
- *To collaborate and partner with Bernalillo Public Schools on the shared use of Town and school recreation facilities.*
- *To improve community access to the Rio Grande and the Bosque.*

Community Services & Facilities Strategy 2.1

Develop and administer an on-going preventative maintenance and replacement program for the Town's park facilities that include:

- Regular safety inspections and installation or replacement of playground equipment as needed;
- Maintenance and replacement of irrigation systems, turf and plant materials, and ball field equipment;
- Installation of shade structures;
- ADA upgrades; and
- Water conservation through xeriscape principles of design and irrigation best practices.

Community Services & Facilities Strategy 2.2

Create and implement a parks and recreation master plan that includes, but is not limited to:

- Recreation needs survey;
- Level of service delivery analysis;

- Inventory of existing park, trail, and indoor recreation facilities and conditions;
- Inventory of recreation programming for youth, adults, and seniors;
- Demographic analysis and population projections;
- Identification of future land acquisition for park and trail facilities;
- Development standards for new park facilities;
- Recommendations for capital improvements, recreation programming, and staffing levels; and
- Implementation plan for capital improvements and potential funding sources.

Community Services & Facilities Strategy 2.3
Utilizing the recommendations generated by the Parks and Recreation Master Plan identified in Community Services & Facilities Strategy 1.1, plan for and pursue available funding for improvements to existing park and recreation facilities.

Community Services & Facilities Strategy 2.4
Work with the Middle Rio Grande Conservancy District and the New Mexico Paddlers Coalition on completing the improvements identified for public access to the Rio Grande at the US 550 bridge area. As part of this strategy, complete the licensing agreement for public access to the Middle Rio Grande Conservancy District facilities.

Community Services & Facilities Strategy 2.5
Work with Bernalillo Public Schools on a Memorandum of Understanding that addresses the conditions to allow for the joint use of park and school facilities.

Community Services & Facilities Strategy 2.6
Continue to coordinate with local volunteer groups on co-hosting community events that celebrate the rich and varied history and culture of the Bernalillo community.

COMMUNITY SERVICES & FACILITIES GOAL 3

Provide and maintain a full spectrum of community facilities, programming, and events.

Objectives

- *To ensure the community facility needs of existing and future residents are being met through capital improvements to the Martha Liebert Public Library, Bernalillo Recreation Center, and the Bernalillo Community Museum.*
- *To ensure community facilities and programs meet the current and future multi-generational needs of Bernalillo residents.*
- *To foster a greater appreciation of the history and culture of Bernalillo.*
- *To support the ability of seniors to socialize, remain active, and live independently within the community.*

Community Services & Facilities Strategy 3.1
Create and maintain a systematic preventative maintenance and replacement program for all Town-owned facilities.

Community Services & Facilities Strategy 3.2
Complete a Needs Assessment for the Martha Liebert Public Library that evaluates existing and future capital and program needs, and provides recommendations for capital and program improvements; facility space and computer equipment; and staffing levels.

Community Services & Facilities Strategy 3.3
In conjunction with Community Services & Facilities Strategy 2.2, pursue available funding to meet the capital and program needs of the Martha Liebert Public Library, as identified in the Library Needs Assessment.

Community Services & Facilities Strategy 3.4
In conjunction with Community Services & Facilities Strategy 1.1, pursue available funding to meet the capital and program needs of the Bernalillo Recreation Center as identified in the Parks and Recreation Master Plan.

Community Services & Facilities Strategy 3.5
Work with the Museum Advisory Council to identify capital and program needs for the Bernalillo Community Museum. As part of this strategy, pursue available funding to address the identified needs.

Community Services & Facilities Strategy 3.6
Designate the area encompassing the former W.D. Carroll Elementary School, Martha Liebert Public Library, Bernalillo Community Museum, and Town Hall as a Cultural Campus. As part of this strategy, develop a phased master plan that incorporates:

- An archway or markers at Calle Malinche and Camino Del Pueblo defining the entrance to the Cultural Campus.
- Customized wayfinding signage and kiosks along streets to serve the dual purpose of telling the story of Bernalillo's cultural heritage and providing directions to the Cultural Campus area.
- Street trees and special landscape treatments.
- Installation of paved walkways.
- Public art including murals and sculpture featuring local artists.

Infrastructure Strategy 3.7
Identify locations for the installation of solar panels on Town-owned buildings and electric vehicle charging stations on Town properties and along Camino del Pueblo.

COMMUNITY SERVICES & FACILITIES GOAL 4
Maintain the high level of community health outcomes for Bernalillo residents.

Objectives
- *To ensure all Bernalillo residents, including individuals, families, seniors, and people with disabilities, have access to health care and behavioral health services.*
- *To promote and support the operation of local and regional health care providers, including UNM Sandoval Regional Health Center, Presbyterian Rust Center, and El Pueblo Health Services.*

Community Services & Facilities Strategy 4.1
Coordinate with UNM Sandoval Regional Health Center, Presbyterian Rust Center, El Pueblo Health Services, UNM Department of Dental Medicine, and other health care providers on disseminating information to the general public on available community health care services.

Community Services & Facilities Strategy 4.2
Advocate for and pursue the development of an urgent care facility in Bernalillo that would help serve the medical needs of the Bernalillo community.

Community Services & Facilities Strategy 4.3
Recruit a senior living developer/operator that offers continuing care, including independent living, assisted living, memory care, and skilled nursing to allow residents to age-in-place.

COMMUNITY SERVICES & FACILITIES GOAL 5
Support equal access to quality public education and life-long learning opportunities for Bernalillo residents, regardless of age or socioeconomic background.

Objectives
- *To provide a full spectrum of education and learning opportunities for youth, adults, and seniors.*
- *To help facilitate raising the graduation rate and educational attainment level of Bernalillo residents.*
- *To coordinate with Bernalillo Public Schools on the provision of after school programs and activities.*

Community Services & Facilities Strategy 5.1
Initiate and engage in an on-going community dialogue between the Town of Bernalillo, Bernalillo Public Schools, Central New Mexico Community College, University of New Mexico, and Highlands University on addressing access to education; raising the high school graduation rate; expanding dual credit courses for high school students; educational initiatives related to film production and STEM technologies; and expanding opportunities for high school and college graduates.

Community Services & Facilities Strategy 5.2
Disseminate information on available adult education classes (High School Equivalency - HSE and English as a Second Language - ESL) offered

at Bernalillo Public Schools through the University of New Mexico - Los Alamos Adult Learning Center; CNM's Adult and General Education Program; and the tutoring program at the Martha Liebert Public Library.

Community Services & Facilities Strategy 5.3

Work with Bernalillo Public Schools on establishing an after school program to improve students' academic performance, encourage physical activity, promote health and wellness, and prevent negative behaviors.

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CHAPTER 9
HAZARD MITIGATION

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9.1 INTRODUCTION

Hazard mitigation planning helps to create resilient communities by reducing the risk to people and property during disasters and emergencies and decreasing the time and costs incurred during recovery. Hazard mitigation plans provide the framework for decision-making during emergencies. Identifying disaster-prone areas and preemptively implementing mitigation actions can help communities adapt to a changing environment and prepare for hazard events. The Hazard Mitigation element identifies natural and human-made hazards relevant to Bernalillo and the mitigation strategies developed through partnerships with Sandoval County and other agencies to address the risks to the Bernalillo community.

9.2 HAZARD MITIGATION PLANNING and POLICIES

BEST PRACTICES

The Federal Emergency Management Agency (FEMA) and the American Planning Association (APA) work together to provide resources to communities for hazard mitigation planning. The report, *Hazard Mitigation: Integrating Best Practices into Planning (2010),* identified effective multi-jurisdictional hazard mitigation strategies and tools based on a series of case studies for large, intermediate, small town, and rural jurisdictions across the United States.

The following list of best practices, derived from those case studies, offers guidance when updating hazard mitigation and emergency management plans:

- Clearly state the goals and objectives of hazard mitigation efforts and their relationship to the Comprehensive Plan. Hazard Mitigation goals in the Comprehensive Plan should mirror those found in other plans and vice-versa.
- Integrate local government budgets and development regulations in hazard mitigation implementation efforts. The Comprehensive Plan should identify the policies and actions needed to implement hazard mitigation efforts and available funding. Create multi-purpose projects for hazard mitigation to solve multiple goals. Land use regulations can also be used to implement mitigation measures.
- Document existing and predicted future conditions through a hazard mitigation assessment. Hazard mitigation assessments should provide a snapshot of historical hazards and specific events, as well as predict impacts for future hazards.
- Raise public awareness of hazards experienced in-and-around the area and mitigation measures being taken. Stakeholder values must be accounted for in hazard mitigation, and the public should be informed and included in the hazard mitigation planning process. Public participation assists with the identification of all known hazards and the development of effective strategies.
- Sustain leadership across areas of expertise for hazard mitigation.
- Seize opportunities for community or political advocates to move the community towards embracing hazard mitigation objectively.
- Use external drivers and regulations as an impetus for change.
- Adhering to state and federal laws and programs can help drive the implementation of hazard mitigation efforts.
- Develop tools to proactively address implementation of strategies and evaluate the mitigation measures over time.

HAZARD MITIGATION POLICY GUIDE

In 2020, the APA Board ratified the Hazard Mitigation Policy Guide, which includes 13 Guiding Policies on Hazard Mitigation that frame specific policy declarations. The Hazard Mitigation Policy Guide is closely linked to other APA Policy Guides, including Climate Change, Equity, and Housing. It supplements and supports the FEMA and APA's earlier PAS Report, described above, with a focus on recent severe hazard occurrences due to global climate change, including wildfires and flooding, both of which impact the Bernalillo community. These two documents are useful when developing Hazard Mitigation policies and strategies in future planning efforts for Bernalillo.

Climate Change and Community Resilience

The APA Hazard Mitigation Policy Guide includes policies regarding climate change and the specific steps communities should take to mitigate the impact of climate-related disasters. Extreme weather events continue to endanger lives and have negative impacts on health, property, and the environment. It is crucial that communities prepare and adapt to the changing climate and the emergencies that may occur as a result.

The Hazard Mitigation Policy Guide described a three-part set of interrelated strategies to improve community resilience to hazards as follows:

- **Hazard Mitigation:** A series of actions that lessen the severity or intensity of the hazard's impact when it strikes and begins with avoidance and minimization.
- **Adaptation:** Modifying the natural or building environment to make it more suited to changed or changing conditions and situations. Adaptation also includes changing community behavior to safeguard human and environmental health when faced with the stresses imposed by hazards of all types.
- **Response/Recovery:** The response during and after an event to protect public safety, health, and well-being, and to facilitate community recovery through repair or replacement, ideally to a more resilient condition. This may include changes in land uses, densities, development techniques, building codes, utility locations and installation methods, infrastructure investments, and community services.

Traditionally, community hazard planning has focused on mitigation and less on adaptation, response, and recovery. True community resilience should integrate new methods of responding to emergency events that may be stronger and more destructive.

To create a more resilient community, Bernalillo should coordinate with Sandoval County and other agencies on appropriate all-hazards planning that asks four questions:

1. How can Bernalillo adapt to recurring events and changing circumstances?
2. How can Bernalillo prepare better to recover stronger and more resilient from events so that the next and subsequent events are less disruptive and damaging?
3. How can Bernalillo ensure that recovery and resilience efforts equitably benefit all residents, especially socially and economically challenged communities?
4. How can Bernalillo better collaborate and integrate hazards planning in all disciplines?

Bernalillo and Sandoval County can prepare for unpredictable emergency circumstances, exacerbated by changes to the earth's climate, by developing plans that include a variety of tools and input from governments, private and non-profit entities, and community members, ensuring planning efforts are targeted and flexible. Preparation will determine the success of Bernalillo's outcomes.

9.3 EMERGENCY PREPAREDNESS

The Sandoval County Office of Emergency Management is a division of Sandoval County Fire and Rescue and is the primary emergency management resource for the Town of Bernalillo. Responsibilities include:

- Creating the framework for communities to reduce vulnerability to hazards and cope with disasters;
- Disseminating information to the public;
- Maintaining an emergency resource list;
- Updating the Sandoval County Emergency Operations Plan;
- Supporting the Local Emergency Planning Committee;
- Providing training for emergency response agencies;
- Overseeing mitigation and planning for emergencies; and
- Supervising and activating the Emergency Operations Center during incidents and events.

The Office supervises and activates the Emergency Operations Center (EOC) to support incidents and events, and provides oversight on mitigation and planning for emergencies. The EOC is located in

Bernalillo on Idalia Road and serves as the centralized location for emergency management. Organized on the guidelines of the U.S. Department of Homeland Security and FEMA, the EOC utilizes an emergency management system to coordinate county, state, and federal resources to protect Sandoval County residents from the effects of natural or human-caused disasters, including acts of terrorism. Residents can sign up for CodeRED, Sandoval County's emergency alert system to receive text messages on their phone.

The Office of Emergency Management manages several programs that support the Bernalillo community in an emergency, including:

- **Local Emergency Planning Committee:** Encourages emergency planning to respond to chemical accidents and provides governments information on chemical hazards in their respective communities.
- **Community Emergency Response Team:** Comprised of citizens that have taken a course on emergency readiness and can help first responders with communication, medical aid, search and rescue, and organization during disasters.
- **OEM Citizen Academy:** A 9-week course that provides training and education to community members to enable them to work alongside emergency management in the protection of, prevention against, mitigation for, response to, and recovery from natural or man-made disasters or emergency events.

SANDOVAL COUNTY ALL HAZARDS EMERGENCY OPERATIONS PLAN

The Sandoval County Emergency Operations Plan (2015) identifies responsibilities for County officials and guides the mitigation, preparation, and responses to natural or human-made disasters and emergencies, including full recovery. In the event of a disaster or emergency, the Plan is activated with the coordination of the following participating jurisdictions:

- Town of Bernalillo
- City of Rio Rancho
- Village of Cochiti
- Canon
- La Cueva
- La Jara
- Village of Corrales
- Village of Cuba
- Pueblo of Zia
- Villlage of San Ysidro
- Algodones
- Pueblo of Jemez
- Pueblo of San Felipe
- A portion of the Jicarilla Apache Reservation
- Village of Jemez Springs
- La Madera
- Ponderosa
- Placitas
- Pueblo of Santa Ana
- Pueblo of Sandia
- 3 Navajo Chapters
- Pueblo of Cochiti
- Pueblo of Santo Domingo

Sandoval County and the participating jurisdictions will follow the Emergency Operations Plan until the danger to life, limb, and property ends and everyday activities are resumed. The initial emergency response is the responsibility of the local jurisdiction. Should the incident exceed local resources, Sandoval County will step in. If the emergency is a hazardous material incident, the Sandoval County Hazardous Materials Unit or the New Mexico State Police will be notified.

Comprehensive emergency management is divided into four phases, including Mitigation, Preparedness, Response, and Recovery. The Plan offers strategies on how to accomplish each of the four phases.

SANDOVAL COUNTY SHELTER PLAN

The *Sandoval County Shelter Plan* (2015) is an appendix of the now updated *Sandoval County All Hazards Emergency Operations Plan* described below. It delineates the process used for implementing sheltering and mass care operations for evacuees, both human and animal, in the event of a man-made or natural emergency situation in Sandoval County or the surrounding area. Sheltering activities include mass care, mass feeding, emergency first aid, medical care, and disaster welfare information.

SANDOVAL COUNTY NATURAL HAZARDS MITIGATION PLAN

The *Sandoval County Natural Hazards Mitigation Plan* was updated in September 2019. A multi-jurisdictional planning team comprised of representatives from each participating jurisdiction, New Mexico Department of Homeland Security and

Emergency Management, local tribal governments, and several private, local, and state agencies worked together on the update to the 2014 Plan as required by the Disaster Mitigation Act of 2000. The Plan was prepared in compliance with Section 322 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act, October 2007). The *Natural Hazards Mitigation Plan* identified the natural hazards that impact the jurisdictions located within Sandoval County. The analysis included inventory of critical facility infrastructure, assessment of the vulnerability and risk posed by hazards to human and structural assets, development of strategies for mitigating identified hazards, and presentation of maintenance procedures for the Plan.

BERNALILLO CRITICAL FACILITY INFRASTRUCTURE

Critical infrastructure is any system or structure whose incapacity would have a debilitating impact on that community's defense or economic security and significantly hinder a community's ability to recover following a disaster. The *Natural Hazards Mitigation Plan* included a list of critical facility infrastructure in Bernalillo, as shown in Table 9.1 below.

TABLE 9.1: CRITICAL FACILITY INFRASTRUCTURE

Facility Type	Number of Facilities
Communications Infrastructure	4
Electrical Power Systems	2
Gas and Oil Facilities	4
Banking and Finance Institutions	3
Transportation Networks	3
Water Supply Systems	5
Government Services	1
Emergency Services	3
Educational	5
Shelter and Evacuation Facilities	0
Business	4
Flood Control	0
Recreational Facilities	2
Senior Residential	1

Source: Sandoval County Natural Hazards Mitigation Plan, 2019.

9.4 TOWN OF BERNALILLO HAZARDS

The *Natural Hazards Mitigation Plan* contains risk assessments that reflect county-wide levels and vulnerability assessments at a jurisdictional level, including the Town of Bernalillo. The risk assessment profile in this section considers natural and human-caused hazards that impact Sandoval County overall and individual participating jurisdictions. Each potential risk contains a vulnerability assessment that considers exposure and loss estimations and development trend analyses. A summary of the risk assessment is presented in Table 9.2.

TABLE 9.2: BERNALILLO HAZARD EVENTS SUMMARY

Hazard Event	Probability	Severity
Dam failure	Possible	Critical
Flood	Highly Likely	Critical
Wildfire	Highly Likely	Limited
Drought	Likely	Negligible
Severe Weather & Severe Wind	Moderate	Moderate

Source: Sandoval County Natural Hazards Mitigation Plan, 2019.

DAM FAILURE

The primary risk associated with dam failure in Sandoval County is the inundation of downstream facilities by a resulting flood wave should a dam require opening of emergency spillways. The New Mexico Office of the State Engineer Dam Safety Bureau ensures that dams in New Mexico are designed, maintained, and operated safely to prevent dam failures resulting in flooding. There is no documented history of a major dam failure within Sandoval County.

There are four dams considered likely to affect Bernalillo in the event of failure *(see Table 9.3)*. While these dams do not pose a high threat of failure, the majority of Bernalillo is located within the Cochiti Dam and Jemez Dam inundation areas and a small portion of the area for the Enchanted Hills Dam 1, located north of Rio Rancho. Bernalillo received a high vulnerability rating for dam failure due to these factors.

Aerial view of Cochiti Dam.

TABLE 9.3: BERNALILLO AREA DAMS		
Dam	**Purpose**	**Waterway**
Enchanted Hills Detention Dam 1	Flood Control	Venada Arroyo
Enchanted Hills Detention Dam 2	Flood Control	Venada Arroyo
Jemez Canyon Dam	Flood Control	Jemez River
Sandia Mountain #1 Dam (Piedra Liza Dam) Flood Control	Flood Control	Piedra Liza

Source: Sandoval County Natural Hazards Mitigation Plan, 2019.

The *Natural Hazards Mitigation Plan* rated the probability of dam failure in Bernalillo as "Possible" and the severity should a dam failure occur as "Critical". Loss estimations showed 87% of the Bernalillo population being exposed to High Hazard for dam failure and 2,821 residential buildings, with an estimated replacement cost of $526 million.

FLOODING

Flooding refers to those events that result from precipitation and runoff events, but does not include flooding related to dam failure. The primary events that trigger flooding in Sandoval County include heavy winter rain on snowpacks, tropical storm remnants, and summer monsoons. Bernalillo is the most vulnerable community in Sandoval County for flooding. Bernalillo's vulnerability to floods is considered critical due to the population and the residential facilities exposed to flood hazards near the Rio Grande and along acequias.

The *Natural Hazards Mitigation Plan* ranked the probability of a flood in Bernalillo as "Highly Likely", and the magnitude and severity of a flood event as "Critical". Loss estimations showed 58% of the Bernalillo population being exposed to a High Hazard flood event and 1,897 residential buildings (59%), with an estimated replacement cost of $353 million. The Town of Bernalillo has designated flooding as a mitigation priority.

The Southern Sandoval County Arroyo Flood Control Authority (SSCAFCA) and the Eastern Sandoval County Arroyo Flood Control Authority (ESCAFCA) support flood control measures in Bernalillo. Acequias that flow across the Bernalillo landscape are prone to flooding. The Bernalillo Acequia that flows on the eastern edge of Bernalillo is particularly vulnerable to flooding by stormwater from the Sandia Mountains. In 2016, ESCAFCA prepared the *Mid-Bernalillo Acequia Drainage Management Plan,* which proposed solutions to flooding from the Bernalillo Acequia, including building ponding areas along the Acequia and nearby roads, utilizing Athena Pond as a temporary discharge storage facility, and investigating options to convey stormwater flows from Athena Park to the Rio Grande or the Riverside Drain *(see Chapter 7, Infrastructure for more information on Bernalillo's stormwater conveyance system).*

Participants in the Community Survey identified flooding as a hazard that negatively impacts the Bernalillo community. When asked which out of nine infrastructure improvement options Bernalillo should focus on, 54% said expansion of storm drainage systems. Several participants expressed their concerns regarding the high number of flood zones in Bernalillo, flooding along Camino del Pueblo, and flooding due to levees being in disrepair.

Albuquerque Main Canal.

WILDFIRE

Wildfires are unwanted and uncontrolled fires fueled by vegetative fuels. They can be human-caused or naturally sparked, usually by lightning. The greatest threat of wildfire in Bernalillo is the area around the Rio Grande Bosque designated as a Wildland Urban Interface (WUI). The *Natural Hazards Mitigation Plan* ranked the probability of wildfire in Bernalillo as "Highly Likely" and the severity as "Limited" due to the lower burn threshold of Bosque fuels and the Town's Fire Department having an effective response capability to wildfires.

The *Natural Hazards Mitigation Plan* loss estimations showed the Bernalillo population exposed to high hazard of wildfire was 16% and those exposed to medium hazard were 85%. Residential buildings exposed to high wildfire hazard was 479 (15%), and those exposed to medium risk wildfire hazard were 2,735 (85%).

Sandoval County Community Wildfire Protection Plan

The *Sandoval County Community Wildfire Protection Plan* (SCCWPP, 2012) addressed the hazards and risks of wildfire throughout the County and provided recommendations on fuel reduction projects, public outreach and education, structural ignitability reduction, and fire response capabilities. Sandoval County is comprised of diverse landscapes that are susceptible to wildland fires.

The Community Hazard/Risk Severity Ratings assessed Bernalillo as having a moderate rating in the SCCWPP based on the following:

Good

- Low to moderate fuels
- Career Fire Department
- Water availability
- Good access and evacuation potential

Negative

- Higher fire risk close to Bosque

As mentioned in *Chapter 8, Community Services and Facilities*, the Bernalillo Fire Department is trained for wildland fire along the Bosque. They are also developing an internship program for wildland fire fighting with Bernalillo High School students.

DROUGHT

Droughts are periods of time when a geographic region experiences below average precipitation or rainfall. It is difficult to pinpoint when a drought begins because the effects may be hard to identify. The longer a drought persists, the more harmful the impact on the ecosystem. Prolonged droughts can impact the severity of wildfires, the abundance of wildlife and livestock, and adverse economic consequences. The State of New Mexico has declared a drought emergency state-wide.

The *Natural Hazards Mitigation Plan* ranked the probability of drought in Bernalillo as "Likely" and the severity as "Negligible". While the impact of drought may impact certain economic sectors county-wide, overall, the vulnerability is considered moderate. However, the *Natural Hazards Mitigation Plan* listed mitigating drought as a priority for all jurisdictions within Sandoval County.

SEVERE WEATHER and SEVERE WIND

The *Natural Hazards Mitigation Plan* grouped several weather-related hazards under "Severe Weather", including extreme temperatures, hail, lightning, and winter storms. These weather-related events are known to impact varying degrees of risk to the population and infrastructure. Each were not considered to be severe enough to warrant separate assessments. These events are rare in Sandoval County and primarily affect areas with larger populations and building densities.

The Town of Bernalillo is exposed to severe weather infrequently. Overall, Bernalillo's vulnerability to a severe weather event was assessed as "moderate" due to the population and critical infrastructure that would be affected.

Since wind events primarily impact buildings, the most vulnerable locations for severe wind events in Sandoval County are the most populated jurisdictions. Bernalillo's vulnerability for severe wind events was rated as "moderate".

OTHER HAZARDS

Hazardous Materials

The transportation of hazardous materials along Interstate 25, US 550, and NM 528 poses a potential hazard to the community of Bernalillo. Immediate response is crucial to mitigate the impacts of hazardous materials on the community. Sandoval County Fire and Rescue Hazardous Materials Response Team and the New Mexico State Police respond to hazardous material emergencies in Bernalillo.

Pandemics

The COVID-19 pandemic brought to the forefront the essential preparation needed in the management of infectious diseases. The Town of Bernalillo and Sandoval County adhere to the guidance from the Centers for Disease Control and New Mexico Department of Health, including face coverings required in all indoor facilities, physical distancing, and participant limits at public gatherings. Several Town facilities have been either closed to the public or open for appointment only or reduced hours. The Town of Bernalillo continues to post updates and changes in Town functions and the New Mexico COVID-19 Public Health Orders on its website and Facebook page.

The Sandoval County Office of Emergency Management and Sandoval County Fire and Rescue have been at the forefront of COVID-19 testing efforts and vaccine distribution in Bernalillo. Testing was conducted at the Bernalillo Recreation Center as drive-up and walk-up by appointment only. Vaccines were offered at the Recreation Center in conjunction with the New Mexico National Guard and the New Mexico Department of Health. After the initial high demand for vaccines, Sandoval County partnered with Vida Pharmacy to provide vaccines at the Emergency Operations Center.

Climate Change

No jurisdiction is protected from the effects of a changing climate. The Town of Bernalillo could face flooding from strong rainstorms, wildfire exacerbated by prolonged drought, and health impacts due to extreme heat or cold caused by climate change. The Town can take steps to help reduce the severity of those impacts by addressing issues before they arise, such as ensuring the community has the information and awareness in case of an emergency, providing housing for the most vulnerable in the community, and promoting green building techniques and design for new development.

9.5 GOALS, OBJECTIVES, & STRATEGIES

HAZARD MITIGATION GOAL 1

Reduce the community's risk and vulnerability to natural and human-caused hazard events.

Objectives

- *To increase public awareness of risk from natural and human-caused hazards.*
- *To foster emergency preparedness and response during major hazard events.*
- *To provide residents with adequate warning for hazards, including flooding, bosque fires, and severe weather.*

Hazard Mitigation Strategy 1.1

Advocate for and participate in updating the Sandoval County All-Hazards Emergency Operations Plan and Shelter Plan. As part of this strategy, identify facilities in Bernalillo that can be used as emergency shelters for people and domestic animals during major hazard events.

Hazard Mitigation Strategy 1.2

Develop an emergency routing and evacuation plan for passenger vehicles, trucks, and emergency vehicles during major hazard events.

Hazard Mitigation Strategy 1.3

Promote and provide information to Bernalillo residents on Sandoval County's Community Emergency Response Team training program and the CodeRed Alert System.

Hazard Mitigation Strategy 1.4

Educate Bernalillo residents on the importance of creating an emergency supply kit (e.g., water, food, medication, basic sanitary supplies, batteries, flashlights, first aid kit, phone chargers, etc) for use during major hazard events.

Hazard Mitigation Strategy 1.5

Coordinate and encourage ongoing collaboration between the Town of Bernalillo, City of Rio Rancho, Sandoval County, and state and federal agencies on emergency management and mitigation of hazards in Bernalillo and the region.

Hazard Mitigation Strategy 1.6

As part of creating a centralized GIS mapping system for Town-owned and managed facilities and systems, include mapping data on major hazard events, critical infrastructure, Rio Grande wildland-urban interface area, and temporary sheltering facilities.

HAZARD MITIGATION GOAL 2

Minimize the community's vulnerability to and impact from flooding and dam failure.

Objectives

- *To build greater capacity to mitigate flooding and flash floods.*
- *To take appropriate measures to limit development in high-risk flood areas within Bernalillo.*
- *To achieve a shorter recovery time after flooding has occurred.*

Hazard Mitigation Strategy 2.1

In coordination with stormwater management goals in the Infrastructure chapter, complete improvements to existing culverts and arroyos, and install new culverts as needed to protect the Bernalillo community from future flooding.

Hazard Mitigation Strategy 2.2

Participate in a collaborative process with the U.S. Army Corp of Engineers, Sandoval County, and the New Mexico Department of Homeland Security and Emergency Management on mitigating flood hazards in Bernalillo and the region.

Hazard Mitigation Strategy 2.3

Continue the Town of Bernalillo's participation and remain in compliance with the National Flood Insurance Program.

HAZARD MITIGATION GOAL 3

Reduce the impact and risk to life and property from wildfires along the Rio Grande Bosque.

Objectives

- *To protect the Rio Grande corridor and the regional watershed from wildfires.*
- *To encourage on-going participation in Wildland-Urban interface programs.*
- *To work with the Middle Rio Grande Conservancy District, Pueblo of Santa Ana, Pueblo of Sandia, Sandoval County, and private*

landowners on fuel reduction in the wildland/urban interface areas within and adjacent to Bernalillo.

Hazard Mitigation Strategy 3.1
Participate in an update to the Sandoval County Community Wildfire Protection Plan.

Hazard Mitigation Strategy 3.2
Collaborate with Sandoval County on developing a public information program on the importance of reducing fuel loads, removing combustible materials around structures, and reducing the ignitability of structures, particularly for those within the Rio Grande Bosque wildfire-urban interface area and along acequias. As part of this strategy, provide public information on the Bernalillo Fire and Rescue Department's fire and life safety inspections.

Hazard Mitigation Strategy 3.3
Work with the Middle Rio Grande Conservancy District on weed, invasive species, and brush removal to reduce fuel load within the Rio Grande Bosque and within MRGCD-owned parcels adjacent to acequias.

Hazard Mitigation Strategy 3.4
Become a member of the Fire Adapted New Mexico Learning Network and utilize the knowledge and resources available to reduce the risk of wildfires in Bernalillo and the surrounding watershed.

HAZARD MITIGATION GOAL 4

Improve Bernalillo's capacity to respond to hazardous material spills and releases.

Objectives

- *To ensure a rapid and coordinated response to accidents associated with the transport of hazardous materials through Bernalillo on Interstate 25, US 550, and NM 528.*
- *To coordinate with Sandoval County Emergency Management and the New Mexico State Police on improving local response to hazardous material events.*
- *To protect the community from hazardous material spills and releases at fixed commercial sites and residential properties.*

Hazard Mitigation Strategy 4.1
Work with the NMDOT, NM State Police, Sandoval County, and Rio Rancho on developing and administering procedures for responding to hazardous spills and removals along Interstate 25, US 550, and NM 528.

Hazard Mitigation Strategy 4.2
In conjunction with Infrastructure Strategy 1.6, provide information to the Bernalillo community on the safe and proper disposal of household and commercial hazardous waste.

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CHAPTER 10

IMPLEMENTATION

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10.1 INTRODUCTION

Successful implementation of the Bernalillo Comprehensive Plan means referencing its goals, objectives, and strategies when faced with decision making regarding growth and development, pursuing and securing available funding, allocating adequate staff resources, and engaging in meaningful partnerships with other local, regional, and state entities. The Implementation chapter contains a series of matrices that list each of the strategies that will help achieve the community's vision for the future of Bernalillo. The matrices are listed by Plan element and are intended to assist Town Council, Planning and Zoning Commission, Town staff, and the community in measuring the successful progress and overall implementation of the Comprehensive Plan.

Resources needed to implement the Bernalillo Comprehensive Plan include both time and funding. Time resources will be needed from the Town Council, Planning and Zoning Commission, Town staff, community organizations, and most importantly, from Bernalillo's community members. Implementation time frames are provided for each of the strategies and are intended to assist the Town of Bernalillo in planning for and securing funding or administrative resources for projects. They are not binding. The time frames are supplemented with the responsible lead entity shown first, followed by other support entities shown in parentheses.

The implementation time frames are defined as follows:

- 2022-2024 (short)
- 2025-2027 (medium)
- 2028-2035 (long)
- On-going (no end date)

Relative to funding, the Town of Bernalillo should seek to avail itself of the many local, state, and federal funding programs, where possible. Appendix C of the Comprehensive Plan provides a wide range of funding resources that may be pursued by the Town to implement the capital projects identified in the strategies. However, it should be noted that not all the strategies involve capital outlay.

10.2 IMPLEMENTATION MATRICES

The implementation matrices starting on page 152 provide the complete list of strategies contained in the Comprehensive Plan and are organized by Plan element. For more detail on each of the strategies or the goals and objectives, refer back to the specific chapter. The implementation tables are organized as follows:

- **Chapter 4: Land Use & Community Character** (pages 152-153)
- **Chapter 5: Economic Development** (pages 154-155)
- **Chapter 6: Transportation** (pages 156)
- **Chapter 7: Infrastructure** (pages 157-159)
- **Chapter 8: Community Services & Facilities** (pages 160-161)
- **Chapter 9: Hazard Mitigation** (page 162)

CHAPTER 4: LAND USE & COMMUNITY CHARACTER - IMPLEMENTATION SCHEDULE		
Implementation Strategies	**Date**	**Responsible Entity**
Strategy 4.1.1: Designate the neighborhood in the southern area of Bernalillo on the east and west sides of the railroad tracks as an Metropolitan Redevelopment Area (MRA), as illustrated on the Future Land Use Scenario. Subsequently, solicit professional services of a consultant to create a MRA plan that identifies strategies for redevelopment and allows the Town of Bernalillo to contribute to projects in accordance with the New Mexico Metropolitan Redevelopment Act.	2025-2027	Planning & Zoning Dept (Economic & Community Development and Public Works)
Strategy 4.1.2: In coordination with NMDOT, create streetscape improvement plans for Camino del Pueblo, Avenida Bernalillo, US 550, and NM 528 that address sidewalks, pedestrian crossings, traffic calming, landscaping, and lighting. As part of this strategy, the Town of Bernalillo would take the lead on identify specific beautification elements, which may include landscape improvements, signage control, and public art.	2025-2027	Public Works (Capital Projects and Economic & Community Development)
Strategy 4.1.3: Consider the establishment and funding of a facade improvement program to support the maintenance and improvement of commercial buildings along Camino del Pueblo and Avenida Bernalillo.	2025-2027	Planning & Zoning Dept (Administration and Economic & Community Development)
Strategy 4.1.4: Evaluate the adequacy of current code enforcement staffing levels to enforce existing code regulations that address dilapidated buildings, weeds and litter, and dumping. If staffing levels are deemed inadequate, hire additional code enforcement staff to address the staffing gap.	2022-2024	Planning & Zoning Dept (Administration)
Strategy 4.1.5: Work with the community to help define Bernalillo's unique identity, and develop a brand that is incorporated into community gateway/entries, wayfinding signs, and promotional materials.	2025-2027	Museum (Economic & Community Development and Administration)
Strategy 4.1.6: Design and construct community gateways (signage and landscape) at the east and west major entries into Bernalillo on US 550 and at the south entry on Camino del Pueblo, as identified on the Future Land Use Scenario. The existing east entry on Avenida Bernalillo noted on the Future Land Use Scenario should continue to be maintained and improved, as needed.	2025-2027	Administration (Public Works)
Strategy 4.1.7: Develop a wayfinding signage program that directs visitors to Camino del Pueblo, Coronado Historic Site, Rotary Park, and other key community destinations.	2025-2027	Museum (Economic & Community Development and Administration)
Strategy 4.1.8: Amend the Zoning Ordinance to allow for context-sensitive development standards for the mixed-use area (i.e. current Historic Overlay Zone) along Camino del Pueblo, as identified on the Future Land Use Scenario. The development standards should define the minimum requirements for parking, setbacks, building height and massing, relationship to the street, building entries, commercial floor area ratios, etc. As part of this strategy, amend the Official Zoning Map to clearly delineate this area.	2025-2027	Planning & Zoning Dept (Planning & Zoning Commission)
Strategy 4.1.9: Complete an update to the Subdivision Ordinance that is consistent with the recommendations in the Comprehensive Plan, including but not limited to, identification of the threshold for requiring a development agreement with a private developer, depending on the size of the project. The development agreement should address potential transportation and drainage improvements required to be completed by the project developer.	2022-2024	Planning & Zoning Dept (Planning & Zoning Commission)
Strategy 4.1.10: Promote the use of the New Mexico State Income Tax Credit for Registered Cultural Properties, Federal Tax Credit for National Registered Historic Places, and the Historic Preservation Loan Fund to encourage the rehabilitation of historic buildings within Bernalillo.	Ongoing	Museum (Economic & Community Development)

CHAPTER 4: LAND USE & COMMUNITY CHARACTER - IMPLEMENTATION SCHEDULE (continued)		
Implementation Strategies	**Date**	**Responsible Entity**
Strategy 4.2.1: Work with local and regional builders and developers to determine the appropriate incentives to encourage infill development and expansion of residential building types. This could include, but not be limited to, increased residential densities, reductions or waivers in utility extensions and permit fees, and where appropriate, reductions in minimum lot size and setbacks, parking reductions, etc.	Ongoing	Planning & Zoning Dept (Economic & Community Development)
Strategy 4.2.2: Create an inventory of land owned by the Town of Bernalillo that would be appropriate for donation towards the development of income-qualified, multi-family rental housing for special populations, such as single-parent households, veterans, disabled people, seniors, etc. As part of this strategy, consider the acquisition of vacant and abandoned properties to increase the inventory available for this purpose.	Ongoing	Planning & Zoning Dept (Economic & Community Development and GIS)
Strategy 4.2.3: Work with owners of vacant properties on zone map amendments that would be consistent with the preferred land use illustrated on the Future Land Use Scenario.	Ongoing	Planning & Zoning Dept (Planning & Zoning Commission)
Strategy 4.2.4: Work with owners of non-conforming industrial or commercial properties on zone map amendments that would better align existing land use with the appropriate zoning category, with a particular focus on industrial or commercial development in residential zones.	Ongoing	Planning & Zoning Dept (Planning & Zoning Commission and Economic & Community Development)
Strategy 4.2.5: Develop an annexation policy for property adjacent to the municipal boundary that can be efficiently served by municipal infrastructure and emergency services, in accordance with state enabling legislation. The policy should focus on requests by property owners to annex their property to the Town of Bernalillo, and should contain a cost-benefit analysis.	2022-2024	Planning & Zoning Dept (Finance and Public Works)
Strategy 4.3.1: Work with local residential developers and builders on creating incentives that will encourage the build-out of existing, but vacant, residential lots within the Town of Bernalillo.	2022-2024	Planning & Zoning Dept (Public Works and Finance)
Strategy 4.3.2: Amend the Zoning Ordinance to allow for the development of family compounds in single-family zones as a conditional use through cluster housing provisions as an alternative to conventional subdivision design. Regulations should include, but not be limited to: 1) The minimum overall property size; 2) Maximum number of dwelling units allowed; 3) Minimum percentage of common open space required and that will be dedicated in perpetuity through a platting action; 4) Location and orientation of the common open space and adjacency to acequias, if applicable; 5) Uses allowed within common open space; and 6) Setbacks from adjacent development.	2022-2024	Planning & Zoning Dept (Planning & Zoning Commission)
Strategy 4.3.3: Amend the Zoning Ordinance to require adequate separation and/or landscape buffers between new residential development and heavy commercial or industrial development.	2022-2024	Planning & Zoning Dept (Planning & Zoning Commission)
Strategy 4.3.4: Work with local builders on developing a set of voluntary energy guidelines for new single-family and multi-family development that address best building and construction practices that include, but is not limited to: 1) Minimum energy efficiency standards; 2) Site development practices; 3) Reduction in maintenance costs; 4) Construction materials; 5) Indoor water use; and 6) Water efficient landscapes.	2025-2027	Planning & Zoning Dept (Planning & Zoning Commission)
Strategy 4.3.5: For new subdivisions with greater than 30 units, require the dedication and development of neighborhood parks that will serve the needs of the subdivision residents. Where applicable, require that the subdivision provide a pedestrian connection to existing or planned multi-use trails.	2022-2024	Planning & Zoning Dept (Public Works and Parks Dept)

CHAPTER 5: ECONOMIC DEVELOPMENT - IMPLEMENTATION SCHEDULE		
Implementation Strategies	**Date**	**Responsible Entity**
Strategy 5.1.1: Promote Bernalillo as a business-friendly community with strong quality of life assets, amenities, and opportunities including: 1) Historic Downtown/Main Street area (Camino del Pueblo corridor); 2) Access to the Rio Grande Bosque; 3) Excellent access to multi-modal transportation systems including Interstate 25, US 550, NM 528, New Mexico Rail Runner Express, and off-street trails; 4) Proximity to major metropolitan area; 5) Designated Opportunity Zone; 6) Moderate cost of living; 7) Potential LEDA funding for qualifying businesses; and 8) Potential workforce training grants, tax abatements, and tax credits for redevelopment.	Ongoing	Economic & Community Development (Museum)
Strategy 5.1.2: Promote the Bernalillo Industrial Park and other industrial zoned and vacant land along Hill Road and NM 528 to businesses involved in manufacturing, wood and construction products and materials, warehousing, and distribution.	Ongoing	Economic & Community Development
Strategy 5.1.3: Coordinate and participate with the local business community and economic development organizations, including the Bernalillo Economic Development Department, Sandoval County Economic Development Department, Sandoval Economic Alliance, and the New Mexico Economic Development Department on local and regional economic development initiatives.	Ongoing	Economic & Community Development (Sandoval County Economic Development)
Strategy 5.1.4: Develop an annual business recognition program for those businesses that have demonstrated: 1) Outstanding business achievement as evidenced by growth in sales, employees, or new markets entered; 2) Commitment to the community through contributions or service to a civic group, volunteer program, or non-profit organization; or 3) Establishment and creativity of a new business.	2022-2024	Economic & Community Development
Strategy 5.1.5: Provide regular updates on the Town of Bernalillo's economic development efforts and accomplishments on the Town's website and social media page.	Ongoing	Economic & Community Development
Strategy 5.2.1: Complete a feasibility study for developing a small business incubator that supports locally grown, created, or manufactured products and services.	2028-2035	Economic & Community Development
Strategy 5.2.2: In consultation with New Mexico MainStreet, pursue the recertification of Bernalillo as a MainStreet community so that the Town and business owners can reap the benefits of this program through ongoing training and education, technical assistance, and enhanced access to public infrastructure funds and other financial resources. As part of this strategy, establish a MainStreet board comprised of business owners, real estate professionals, and other interested parties; and identify an Executive Director, with assistance from New Mexico MainStreet.	2022-2024	Economic & Community Development (Museum)
Strategy 5.2.3: Incorporate small-scale manufacturing into the Zoning Code as a conditional use in the C-1 Zone that requires review and approval by the Town Planning and Zoning Commission to ensure the use will not be harmful to adjacent properties or redevelopment efforts.	2022-2024	Planning & Zoning Dept (Planning & Zoning Commission)
Strategy 5.2.4: Promote the services offered by the Small Business Development Center at Central New Mexico Community College to existing and potential small business owners in Bernalillo.	Ongoing	Economic & Community Development
Strategy 5.2.5: Work with banks and economic development organizations on expanding small business access to capital through a revolving loan fund.	Ongoing	Economic & Community Development
Strategy 5.3.1: Develop a targeted marketing campaign that highlights Bernalillo's historic resources, including 1) Camino del Pueblo, Coronado Historic Site, Coronado Campground, and El Camino Real de Tierra Adentro National Historic Trail; 2) Pueblos of Santa Ana and Sandia; and 3) local and regional outdoor recreation assets including the Rio Grande and the Bosque. As part of this strategy, determine the markets in New Mexico that should be targeted and advertise in online publications and social media.	2022-2024 (Ongoing)	Museum (Economic & Community Development)

CHAPTER 5: ECONOMIC DEVELOPMENT - IMPLEMENTATION SCHEDULE (continued)		
Implementation Strategies	Date	Responsible Entity
Strategy 5.3.2: Promote Bernalillo as a community with an unmet demand for the development of new restaurants, retail, outdoor adventures and recreation, and hospitality uses. As part of this strategy, actively pursue collaboration between the Bernalillo Economic Development Department, Sandoval County Business Development Division and Tourism Division, Sandoval Economic Alliance, and the New Mexico Outdoor Recreation Division on identifying and working with potential developers of tourism and outdoor recreation related businesses.	2022-2024 (Ongoing)	Economic & Community Development
Strategy 5.3.3: Allocate a portion of lodgers' tax revenues towards marketing Bernalillo as a destination for arts and culture and outdoor recreation attractions and opportunities.	2022-2024 (Ongoing)	Economic & Community Development (Museum and Parks Dept)
Strategy 5.4.1: Participate in discussions and initiatives with local businesses and Bernalillo Public Schools, Central New Mexico Community College, and the University of New Mexico West on developing and expanding workforce training and educational programs related to existing and future business clusters, including film production, photovoltaics and renewable energy technology, healthcare and social sciences, communication, culinary arts, visual arts, etc.	Ongoing	Economic & Community Development (Administration and Bernalillo Public Schools)
Strategy 5.4.2: Support and promote the online classes and continuing education programs offered by New Mexico colleges and universities.	Ongoing	Economic & Community Development (Bernalillo Public Schools)
Strategy 5.4.3: Work with employers in Bernalillo on seeking workforce investment funding (Job Training Incentive Program - JTIP) from the New Mexico Economic Development Department.	Ongoing	Economic & Community Development
Strategy 5.4.4: Sponsor and promote job expos that focus on STEM technologies, including life sciences, engineering, computer programing, natural sciences, etc., to encourage Bernalillo's young adults to enter these fields.	Ongoing	Economic & Community Development (Museum and Library)

CHAPTER 6: TRANSPORTATION - IMPLEMENTATION SCHEDULE		
Implementation Strategies	**Date**	**Responsible Entity**
Strategy 6.1.1: Pursue funding from the New Mexico Finance Authority for a Asset Management Plan that contains: 1) A Pavement Management Program that inventories all roadway and bridge assets and existing conditions; 2) Cost projections for future needs and improvements to the roadway system; 3) Funding strategies; 4) Phased list of prioritized projects according existing condition, traffic volume served, support for public services and tax base, and leveraging potential; and 4) Coordination of projects with the Town's Infrastructure Capital Improvement Plan (ICIP).	2022-2024	Administration (Finance, Public Works, and Capital Projects)
Strategy 6.1.2: In conjunction with Transportation Strategy 6.1.1 and Infrastructure Strategies 7.2.3 and 7.4.2, create a GIS functional database for the existing transportation network in Bernalillo. The database should be maintained and updated on an ongoing basis.	2022-2024	Public Works (GIS)
Strategy 6.1.3: Create an off-street multi-use trails master plan that identifies connections and expands the existing trail system to connect residential neighborhoods to schools, commercial areas, transit stations, and other destinations. Utilize the most current AASHTO Guide for the Development of Bicycle Facilities standards.	2022-2024	Public Works (Planning & Zoning Dept, GIS, and Economic Development)
Strategy 6.1.4: In conjunction with NMDOT, evaluate and determine the feasibility of adding bicycle lanes on E. Avenida Bernalillo (NM 473). New bicycle lanes should be designed in compliance with AASHTO (American Association of State Highway and Transportation Officials), as amended.	2022-2024	Public Works (Capital Projects)
Strategy 6.1.5: Continue to coordinate and work with the NMDOT on upgrading its facilities within Bernalillo, including roadways, sidewalks, traffic signals, turn lanes, bridges, and drainage structures.	Ongoing	Public Works (Capital Projects)
Strategy 6.1.6: Pursue funding for transportation-related projects through NMDOT programs, including the Local Government Road Fund; Municipal Arterial Program; Cooperative Projects; Safety Projects; Bicycle/Pedestrian/Equestrian Program; Transportation Alternatives Program; and Recreational Trails Program.	Ongoing	Public Works (Administration and Capital Projects)
Strategy 6.1.7: Conduct an analysis of traffic volumes, function, access, and speed to determine whether changes to the functional classification are appropriate. This strategy should include coordination with and support from MRCOG for changes to functional classification.	2025-2027	Public Works (Streets and MRCOG)
Strategy 6.2.1: Create a preventative street maintenance plan that identifies priorities and secures funding for improvements to and resurfacing of pavement, reconstruction of deteriorated streets and bridges, and annual maintenance activities, such as crack sealing, seal coating, patching, pavement marking, etc.	2022-2024	Public Works (Streets)
Strategy 6.2.2: Develop a construction and replacement plan for cracked, deteriorated, or missing sidewalks, ramps, and pedestrian crossings to meet ADA accessibility requirements.	2022-2024	Public Works
Strategy 6.2.3: Develop minimum street standards for local roads within residential neighborhoods that allow for reduced pavement width where traffic volume is relatively low, and address surfacing, curbing and drainage swales, walkways, and visitor parking. The standards should be delineated according to the number of residential parcels to be served.	2022-2024	Public Works (Planning & Zoning Dept)
Strategy 6.3.1: Evaluate and quantify the need for higher frequency service, additional bus shelters, and transit stops in Bernalillo to serve current and future residents.	2028-2035	Administration (Rio Metro)
Strategy 6.3.2: Work with Rio Metro on expanding its Dial-a-Ride paratransit service to Bernalillo residents who do not own a passenger vehicle or are unable to drive due to disability.	2028-2035	Administration (Rio Metro)
Strategy 6.3.3: Work with Rio Metro on determining the demand for intercity service to and from Albuquerque, Rio Rancho, and Santa Fe.	2028-2035	Administration (Rio Metro)
Strategy 6.3.4: Promote and provide information regarding the Rail Runner Express service to Bernalillo residents. As part of this strategy, work with Rio Metro and NMDOT to expand frequency of service.	Ongoing	Economic & Community Development (Rio Metro)

CHAPTER 7: INFRASTRUCTURE - IMPLEMENTATION SCHEDULE		
Implementation Strategies	**Date**	**Responsible Entity**
Strategy 7.1.1: Identify and secure funding for water storage improvements and replacement of water storage tanks and wells, as needed. This should include an Arsenic Treatment System for Well Site #2 located east of Interstate 25 and north of US 550.	Ongoing	Public Works (Capital Projects)
Strategy 7.1.2: Continue to provide water quality reports to the public on an annual basis to educate citizens about water quality and the importance of preventative measures, and provide opportunities for making informed decisions regarding the Town's drinking water.	Ongoing	Public Works
Strategy 7.1.3: Sponsor community events on a quarterly basis for the collection of household hazardous waste and to educate the public on the proper disposal of hazardous materials, such as tires, fertilizers, paint and paint thinner, gasoline, pesticides, anti-freeze, batteries, fluorescent light bulbs, household cleaning products, unused medication, etc.	Ongoing	Public Works (Economic & Community Development)
Strategy 7.2.1: Prepare a Water System Master Plan that includes the following components: 1) Background information on the Town's water system (water pressure zones, treatment, storage, transmission, and distribution components); 2) Development of a hydraulic model for the Town's water distribution system to evaluate the water system for the current and future capacity of the transmission; 3) Distribution and storage system; 4) Improvements, replacements, and expansions to correct deficiencies and meet future demands; 5) Annual review as funding becomes available and projects are completed; and 6) Coordination with the Town's capital outlay program and any other available funding sources.	2022-2024	Water Dept (Public Works)
Strategy 7.2.2: Develop an Operations and Maintenance (O&M) Plan that includes the following components: 1) Water system maintenance programs; 2) Standard operating procedures; 3) Emergency response plan; 4) Employee safety program; 5) Rehabilitation and replacement schedule; and 6) Capacity assurance planning.	2022-2024	Water Dept (Public Works)
Strategy 7.2.3: Pursue and secure funding for the development of a GIS functional database that maps the Town's existing water distribution system. This strategy also includes providing updates to the database on an on-going basis as the system is expanded.	2022-2024	Public Works (GIS, Administration, Planning & Zoning Dept, Capital Projects)
Strategy 7.2.4: Prioritize and pursue capital outlay funding for improvements to the Town's water distribution system, including water line extensions; replacements and repair of leaks; and looping and properly sizing water lines to generate more fire flow.	2022-2024	Public Works (Administration)
Strategy 7.3.1: Complete the update to the Town's Municipal Water Conservation Plan and implement projects that will improve the operational efficiency of the Town's water supply and distribution system.	2025-2027	Public Works (Finance)
Strategy 7.3.2: Implement a Water Loss Control Program consisting of the following components: 1) Water audits to identify and quantify water uses and losses from the Town's existing wells, water storage tanks, and water distribution system; 2) Replacement of water meters and repair of leaking water system components; and 3) Periodic evaluation of water rates, with adjustments as needed.	2022-2024	Public Works (Finance)
Strategy 7.3.3: Develop a public education program on water conservation measures for residential and commercial customers that emphasizes the importance of repairing water leaks, installation of high efficiency plumbing fixtures, conversion of cool season turf grass with native or low water use landscape materials appropriate for Bernalillo, and water conservation initiatives at area hotels.	Ongoing	Public Works (Finance)
Strategy 7.3.4: Determine the feasibility of developing a water reuse system that would replace the use of potable water with treated effluent for irrigation at public park facilities.	2028-2035	Public Works (Water Dept and Parks Dept)

CHAPTER 7: INFRASTRUCTURE - IMPLEMENTATION SCHEDULE (continued)		
Implementation Strategies	**Date**	**Responsible Entity**
Strategy 7.4.1: Develop a Wastewater System Master Plan that contains the following components: 1) Information and metrics on the Town's existing wastewater collection system and current wastewater contribution rates; 2) Future wastewater flow projections; 3) Computer modeling to evaluate the wastewater system with regard to the current and future capacity of the wastewater system; 4) Recommendations where expansion, upsizing, repair, or upgrading is needed to correct deficiencies and meet future demand; and 5) Coordination with the Town's capital outlay program and other available funding sources.	2022-2024	Public Works (Wastewater Dept)
Strategy 7.4.2: As identified in Infrastructure Strategy 2.3, pursue and secure funding for the development of a GIS functional database that maps the Town's existing wastewater collection system. This strategy also includes providing updates to the database on an on-going basis as the system is expanded.	2022-2024	Public Works (Wastewater, Administration, Planning & Zoning Dept, GIS)
Strategy 7.4.3: Replace or rehabilitate old and deteriorated manholes in the wastewater collection system to prevent infiltration.	Ongoing	Public Works
Strategy 7.4.4: Conduct ongoing sampling and analysis for water quality to remains in compliance with Pueblo of Sandia and federal standards associated with treated water discharge to the Rio Grande.	Ongoing	Public Works
Strategy 7.4.5: Prioritize and secure capital outlay funding for the ongoing replacement of old and deteriorated sewer lines and lift stations; improvement and expansion to the Town's wastewater treatment system to address capacity issues; development of a SCADA system; and the purchase of a new vacuum truck.	Ongoing	Public Works (Administration and Capital Projects)
Strategy 7.4.6: Design and secure funding for the phased expansion of sewer services to properties within the Town of Bernalillo currently utilizing septic systems, including but not limited to, unserved properties along Hill Road, between the Bernalillo Industrial Park and the Rio Grande, and areas west of NM 528.	2025-2027	Public Works (Administration and Capital Projects)
Strategy 7.5.1: Develop and implement a Drainage Management Plan that addresses: 1) Coordination with the Southern Sandoval County Arroyo Flood Control Authority (SSCAFCA) and the Eastern Sandoval County Arroyo Flood Control Authority (ESCAFCA) on their respective assessments and determination of existing watershed conditions and areas at risk of flooding within and adjacent to Bernalillo; 2) Coordination with the Middle Rio Grande Conservancy District (MRGCD) on maintenance and improvements to acequias and conveyance structures within its jurisdiction; 3) Identification of Town-led projects to improve drainage retention and detention in areas at risk for flooding; and 4) Engineering cost estimates for the improvements. The Drainage Management Plan should be reviewed on an annual basis as funding becomes available and projects are completed, and coordinated with the Town's capital outlay program and other available funding sources.	2022-2024	Public Works (Administration and ESCAFCA)
Strategy 7.5.2: Prioritize and construct stormwater drainage improvements to minimize the risk of flooding in Bernalillo, as identified in the Drainage Management Plan.	2028-2035	Public Works (ESCAFCA)
Strategy 7.5.3: Incorporate and allow Low Impact Development (LID) techniques in the Town's Subdivision Ordinance that address stormwater detention and retention, such as water harvesting, bioretention, cisterns, rain gardens, permeable pavement, etc.	2022-2024	Planning & Zoning Dept (Planning & Zoning Commission)
Strategy 7.6.1: Engage in a dialogue with existing and prospective telecommunication providers on improving and expanding high-speed broadband services in Bernalillo.	Ongoing	Administration (IT)
Strategy 7.6.2: Adopt a "Dig Once" policy that requires public and private excavators to coordinate with the Town of Bernalillo Public Works Department on installing fiber conduit during construction within public rights-of-way.	2022-2024	Public Works

CHAPTER 7: INFRASTRUCTURE - IMPLEMENTATION SCHEDULE (continued)		
Implementation Strategies	Date	Responsible Entity
Strategy 7.7.1: Develop a public education program on the benefits of reducing, reusing, and recycling; encourage the community to participate in the recycling program; and prevent the contamination of recyclable materials. Include metrics on the amount of waste that has been diverted from the Sandoval County Landfill.	2028-2035	Public Works (Road Runner Waste Service)
Strategy 7.7.2: Coordinate with Road Runner Waste Service on determining the cost of providing and servicing additional recycling bins in public locations.	2028-2035	Administration (Road Runner Waste Service)
Strategy 7.7.3: As part of Bernalillo's Keep Bernalillo Beautiful initiative, continue to sponsor community events for the collection of yard waste, trash, and unused medication.	Ongoing	Public Works (Sandoval County Landfill)
Strategy 7.7.4: Work with the New Mexico Environment Department, Solid Waste Bureau on developing a waste reduction program that includes electronic devices and household hazardous waste.	2028-2035	Public Works (NM Environment Dept)
Strategy 7.7.5: Coordinate with and co-sponsor community events with the Middle Rio Grande Conservancy District (MRGCD) for removing trash within the Rio Grande Bosque.	Ongoing	Administration (MRGCD)

CHAPTER 8: COMMUNITY SERVICES & FACILITIES - IMPLEMENTATION SCHEDULE		
Implementation Strategies	**Date**	**Responsible Entity**
Strategy 8.1.1: Work with the Bernalillo Police and Fire Departments on developing a comprehensive Public Safety Needs Assessment that includes: 1) Data collection on past calls for non-emergency and emergency services, including ambulance transport, over the past five years; 2) Identification of current and future program, training, and certification needs, including hazmat training; 3) Identification of existing and future technology, equipment, vehicle, and dispatch needs for fire, police, and emergency transport; and 4) Identification of existing and future staffing levels to maintain an excellent ISO rating and emergency response times.	2022-2024	Police Department and Fire Department (Administration)
Strategy 8.1.2: Based on the Public Safety Needs Assessment, pursue and prioritize funding to purchase replacement equipment, vehicles, engine and ladder trucks; renovation of Station 142; and replacement of the Main Fire Station. The vehicle and equipment replacement program should prioritize expenditures over a 10-year planning horizon.	Ongoing	Police Department and Fire Department
Strategy 8.1.3: Provide on-going training and certification for current and future police officers, firefighters, and emergency medical technicians.	Ongoing	Police Department and Fire Department
Strategy 8.1.4: Participate in community events and informal meetings to solicit feedback from residents and business owners regarding public safety services in Bernalillo.	Ongoing	Police Department and Fire Department
Strategy 8.2.1: Develop and administer an on-going preventative maintenance and replacement program for the Town's park facilities that include:1) Regular safety inspections and installation or replacement of playground equipment as needed; 2) Maintenance and replacement of irrigation systems, turf and plant materials, and ball field equipment;3) Installation of shade structures; 4) ADA upgrades; and 5) Water conservation through xeriscape principles of design and irrigation best practices.	2028-2035	Public Works (Parks Dept)
Strategy 8.2.2: Create and implement a parks and recreation master plan that includes, but is not limited to: 1) Recreation needs survey; 2) Level of service delivery analysis; 3) Inventory of existing park, trail, and indoor recreation facilities and conditions; 4) Inventory of recreation programming for youth, adults, and seniors; 5) Demographic analysis and population projections; 6) Identification of future land acquisition for park and trail facilities; 7) Development standards for new park facilities; 8) Recommendations for capital improvements, recreation programming, and staffing levels; and 9) Implementation plan for capital improvements and potential funding sources.	2025-2027	Parks Dept and Recreation Dept (Public Works)
Strategy 8.2.3: Utilizing the recommendations generated by the Parks and Recreation Master Plan identified in Community Services & Facilities Strategy 1.1, plan for and pursue available funding for improvements to existing park and recreation facilities.	2028-2035	Public Works (Parks Dept)
Strategy 8.2.4: Work with the Middle Rio Grande Conservancy District and the New Mexico Paddlers Coalition on completing the improvements identified for public access to the Rio Grande at the US 550 bridge area. As part of this strategy, complete the licensing agreement for public access to the Middle Rio Grande Conservancy District facilities.	Ongoing	Public Works, MRGCD
Strategy 8.2.5: Work with Bernalillo Public Schools on a Memorandum of Understanding that addresses the conditions to allow for the joint use of park and school facilities.	2022-2024	Administration (Public Works and Parks Dept)
Strategy 8.2.6: Continue to coordinate with local volunteer groups on co-hosting community events that celebrate the rich and varied history and culture of the Bernalillo community.	Ongoing	Museum (Library)

CHAPTER 8: COMMUNITY SERVICES & FACILITIES - IMPLEMENTATION SCHEDULE (continued)		
Implementation Strategies	**Date**	**Responsible Entity**
Strategy 8.3.1: Create and maintain a systematic preventative maintenance and replacement program for all Town-owned facilities.	2025-2027	Administration (Public Works)
Strategy 8.3.2: Complete a Needs Assessment for the Martha Liebert Public Library that evaluates existing and future capital and program needs, and provides recommendations for capital and program improvements; facility space and computer equipment; and staffing levels.	2022-2024	Library
Strategy 8.3.3: In conjunction with Community Services & Facilities Strategy 2.2, pursue available funding to meet the capital and program needs of the Martha Liebert Public Library, as identified in the Library Needs Assessment.	2022-2024	Library
Strategy 8.3.4: In conjunction with Community Services & Facilities Strategy 1.1, pursue available funding to meet the capital and program needs of the Bernalillo Recreation Center as identified in the Parks and Recreation Master Plan.	2022-2024	Recreation Dept
Strategy 8.3.5: Work with the Museum Advisory Council to identify capital and program needs for the Bernalillo Community Museum. As part of this strategy, pursue available funding to address the identified needs.	Ongoing	Museum
Strategy 8.3.6: Designate the area encompassing the former Roosevelt Elementary School, Martha Liebert Public Library, Bernalillo Community Museum, and Town Hall as a Cultural Campus. As part of this strategy, develop a phased master plan that incorporates: 1) An archway or markers at Calle Malinche and Camino Del Pueblo defining the entrance to the Cultural Campus; 2) Customized wayfinding signage and kiosks along streets to serve the dual purpose of telling the story of Bernalillo's cultural heritage and providing directions to the Cultural Campus area; 3) Street trees and special landscape treatments; 4) Installation of paved walkways; and 5) Public art including murals and sculpture featuring local artists.	2028-2035	Library and Museum (Administration and Economic and Community Development)
Strategy 8.3.7: Identify locations for the installation of solar panels on Town-owned buildings and electric vehicle charging stations on Town properties and along Camino del Pueblo.	2025-2027	Administration
Strategy 8.4.1: Coordinate with UNM Sandoval Regional Health Center, Presbyterian Rust Center, El Pueblo Health Services, UNM Department of Dental Medicine, and other health care providers on disseminating information to the general public on available community health care services.	2025-2027	Communications Coordinator
Strategy 8.4.2: Advocate for and pursue the development of an urgent care facility in Bernalillo that would help serve the medical needs of the Bernalillo community.	2025-2027	Economic and Community Development
Strategy 8.4.3: Recruit a senior living developer/operator that offers continuing care, including independent living, assisted living, memory care, and skilled nursing to allow residents to age-in-place.	2025-2027	Economic and Community Development (Sandoval County)
Strategy 8.5.1: Initiate and engage in an on-going community dialogue between the Town of Bernalillo, Bernalillo Public Schools, Central New Mexico Community College, University of New Mexico, and Highlands University on addressing access to education; raising the high school graduation rate; expanding dual credit courses for high school students; educational initiatives related to film production and STEM technologies; and expanding opportunities for high school and college graduates.	2025-2027	Economic and Community Development (Bernalillo Public Schools)
Strategy 8.5.2: Disseminate information on available adult education classes (High School Equivalency - HSE and English as a Second Language - ESL) offered at Bernalillo Public Schools through the University of New Mexico - Los Alamos Adult Learning Center; CNM's Adult and General Education Program; and the tutoring program at the Martha Liebert Public Library.	Ongoing	Communications Coordinator (Library and Museum)
Strategy 8.5.3: Work with Bernalillo Public Schools on establishing an after school program to improve students' academic performance, encourage physical activity, promote health and wellness, and prevent negative behaviors.	2025-2027	Recreation Dept (Bernalillo Public Schools)

CHAPTER 9: HAZARD MITIGATION - IMPLEMENTATION SCHEDULE		
Implementation Strategies	**Date**	**Responsible Entity**
Strategy 9.1.1: Advocate for and participate in updating the Sandoval County All-Hazards Emergency Operations Plan and Shelter Plan. As part of this strategy, identify facilities in Bernalillo that can be used as emergency shelters for people and domestic animals during major hazard events.	Ongoing	Planning & Zoning Dept (Fire Dept)
Strategy 9.1.2: Develop an emergency routing and evacuation plan for passenger vehicles, trucks, and emergency vehicles during major hazard events.	2022-2024	Police Dept and Fire Dept
Strategy 9.1.3: Promote and provide information to Bernalillo residents on Sandoval County's Community Emergency Response Team training program and the CodeRed Alert System.	2022-2024	Police Dept and Fire Dept (Communications Coordinator)
Strategy 9.1.4: Educate Bernalillo residents on the importance of creating an emergency supply kit (e.g., water, food, medication, basic sanitary supplies, batteries, flashlights, first aid kit, phone chargers, etc) for use during major hazard events.	Ongoing	Police Dept and Fire Dept
Strategy 9.1.5: Coordinate and encourage ongoing collaboration between the Town of Bernalillo, City of Rio Rancho, Sandoval County, and state and federal agencies on emergency management and mitigation of hazards in Bernalillo and the region.	Ongoing	Police Dept and Fire Dept (Sandoval County Emergency Management)
Strategy 9.1.6: As part of creating a centralized GIS mapping system for Town-owned and managed facilities and systems, include mapping data on major hazard events, critical infrastructure, Rio Grande wildland-urban interface area, and temporary sheltering facilities.	2022-2024	Fire Dept (GIS)
Strategy 9.2.1: In coordination with stormwater management goals in the Infrastructure chapter, complete improvements to existing culverts and arroyos, and install new culverts as needed to protect the Bernalillo community from future flooding.	2025-2027	Public Works (SSCAFCA, ESCAFCA, and MRGCD)
Strategy 9.2.2: Participate in a collaborative process with the U.S. Army Corp of Engineers, Sandoval County, and the New Mexico Department of Homeland Security and Emergency Management on mitigating flood hazards in Bernalillo and the region.	Ongoing	Planning & Zoning Dept (SSCAFCA and ESCAFCA)
Strategy 9.2.3: Continue the Town of Bernalillo's participation and remain in compliance with the National Flood Insurance Program.	Ongoing	Planning & Zoning Dept (Administration)
Strategy 9.3.1: Participate in an update to the Sandoval County Community Wildfire Protection Plan.	2025-2027	Fire Dept
Strategy 9.3.2: Collaborate with Sandoval County on developing a public information program on the importance of reducing fuel loads, removing combustible materials around structures, and reducing the ignitability of structures, particularly for those within the Rio Grande Bosque wildfire-urban interface area and along acequias. As part of this strategy, provide public information on the Bernalillo Fire and Rescue Department's fire and life safety inspections.	2025-2027	Fire Dept (Sandoval County)
Strategy 9.3.3: Work with the Middle Rio Grande Conservancy District on weed, invasive species, and brush removal to reduce fuel load within the Rio Grande Bosque and within MRGCD-owned parcels adjacent to acequias.	Ongoing	Public Works (MRGCD)
Strategy 9.3.4: Become a member of the Fire Adapted New Mexico Learning Network and utilize the knowledge and resources available to reduce the risk of wildfires in Bernalillo and the surrounding watershed.	2022-2024	Fire Dept
Strategy 9.4.1: Work with the NMDOT, NM State Police, Sandoval County, and Rio Rancho on developing and administering procedures for responding to hazardous spills and removals along Interstate 25, US 550, and NM 528.	Ongoing	Police Dept and Fire Dept (Sandoval County)
Strategy 9.4.2: Provide information to the Bernalillo community on the safe and proper disposal of household and commercial hazardous waste.	Ongoing	Public Works (Communications Coordinator)

APPENDICES

- APPENDIX A: GLOSSARY OF TERMS
- APPENDIX B: COMMUNITY SURVEY RESULTS
- APPENDIX C: FUNDING RESOURCES

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Affordable Housing - Defined by the U.S. Department of Housing and Urban Development as rental or ownership housing and utilities whose monthly cost burden represents no more than 30% of the gross income of an individual or a family. Affordable housing is supported and incentivized by many programs administered through the Department of Housing and Urban Development (HUD).

Annexation - The process that a municipality undertakes to incorporate new territories into its existing boundaries, per Article 3-7-1 through 3-7-18 NMSA 1995.

Acequia - A community-operated irrigation canal first developed by the Spanish colonists using many existing waterways developed by Indigenous peoples. The acequia system is designed to share water for agriculture in dry land and continues in use today.

Buffering - The use of walls, fencing, plant materials, and/or setbacks to minimize the potentially adverse impact of one land use on another.

Bosque - A forest habitat found along a riparian flood plain of stream and riverbanks.

Community Facility - A building or structure owned and operated by a governmental agency to provide service to the public. A community center, school, senior center, and police station are examples.

Density, Net - The number of residential dwelling units per the total developable acreage of land, excluding public rights-of-way, open space, and utilities.

Density, Gross - The number of residential dwelling units per the total acreage of land.

Development Standards - Standards that control the size of structures and the relationships of structures and uses to each other and to open areas and lot lines. Development standards include regulations controlling maximum building height, minimum lot area, minimum lot frontage, minimum size of yards and setbacks, etc.

Easement - A "non-possessory" property interest that allows the beneficiary to use property that he or she does not own or possess for a specific purpose. The beneficiary cannot occupy the land or to exclude others from the land, unless they interfere with the beneficiary's use.

Eastern Sandoval County Arroyo Flood Control Authority (ESCAFCA) - ESCAFCA is the lead agency in eastern Sandoval County Region that addresses flood control, watershed management, and flood control projects.

Economic Development - The process by which a community improves the local economy and social well-being of the people. This could include an improvement in the number of jobs, incomes, education levels, organization capacity or other forms of capital.

Economic Base Job - A job in which services or goods provided are exported outside the local economy (i.e., sold to outside customers) and bring new money into the economy. Economic Base jobs are the key to a community's economic growth and support a strong retail sector.

Evapotranspiration - The process by which water is transferred from the land to the atmosphere by evaporation from the soil and other surfaces and by transpiration from plants.

Extraterritorial Jurisdiction - An established area outside of a town, city, etc. to exercise zoning and subdivision powers outside of their boundaries. It is intended to protect the use of land on the edge of communities from being encroached on by incompatible activities that might degrade adjoining property or cause a nuisance.

Flood Zone - A flood hazard area as defined by the Federal Emergency Management Agency, categorized by the likelihood and depth of flooding expected annually.

Gateway - A monument, signage, and/or landscape feature that provides a sense of entry and arrival to a community.

Geographic Information System (GIS) - A computer based system for generating maps comprised of different informational elements such as topographical data, roadways, property lines, land use, etc.

Gross Receipts - The gross amounts realized on the sale or exchange of property, the performance of services, or the use of property or capital (including rents, royalties, interest and dividends) in a transaction which produces business income.

Groundwater - The supply of freshwater under the surface in an aquifer or geologic formation that forms the natural reservoir for potable water.

Infrastructure Capital Improvement Program (ICIP) - The multi-year scheduling of public physical improvements for the community that is typically prepared five-years in advance with a clear priority of what is needed most by the city or county, and including a cost estimate.

Infill - The development of vacant or partially developed parcels that are surrounded by or in close proximity to areas that are substantially or fully developed. For example, the construction of a new home on an empty lot within an existing developed residential subdivision.

Infrastructure - The underlying foundation or basic framework of a town including streets, water, sewer, storm drainage, parks, bridges, and street lights.

Land Use - Denotes how a parcel of land is currently used, what activities are or are not permitted on a parcel of land, and the possible requirements for future uses.

Local Economic Development Act (LEDA) - Legislation that allows for the public support of economic development to foster, promote, and enhance local economic development efforts while continuing to protect against the unauthorized use of public money and other public resources (i.e., Anti-Donation Clause in the New Mexico Constitution). Public entities use LEDA to enter into a "public/private partnership" for an economic benefit. LEDA can be used to support 3 types of projects, including Infrastructure/ Improvement, Economic Development (Job Creator), and Retail.

Local Emergency Planning Committee (LEPC) - Under the Emergency Planning and Community Right-To-Know Act (EPCRA), LEPCs develop an emergency response plan, review the plan at least annually, and provide information about chemicals in the community to citizens.

Light Industrial - The assembly, fabrication, or processing of goods and materials, including growing food or plants in an indoor structure, using processes that ordinarily do not create noise, smoke, fumes, odors, glare, or health or safety hazards outside of the building or lot where such assembly, fabrication, or processing takes place, where such processes are housed entirely within a building.

Lot - A parcel of land occupied or intended to be occupied by a main building or group of main buildings and accessory buildings, together with such yards, open spaces, lot width and lot areas, as recorded on a plat of record or described by metes and bounds.

Manufactured Home - Constructed to the standards of the United States Department of Housing and Urban Development, the National Manufactured Housing Construction and Safety Standards Act of 1974 (42 U.S.C 5401 *et seq.*), and the Housing and Urban Development Zone Code II or the Uniform Building Code, as amended to the date of the unit's construction, and installed consistent with the Manufactured Housing Act [60-14 NMSA 1978] and with the regulations made pursuant thereto relating to permanent foundations.

Metropolitan Redevelopment Area (MRA) - A designated area within a New Mexico municipality that has been targeted for reinvestment and public improvements due to the presence of "blighted" conditions that arrest the orderly development of the municipality. Municipalities may contribute public funds to private projects as well as public improvements. Metropolitan Redevelopment Areas are regulated by the New Mexico Metropolitan Redevelopment Code (Article 3-60A-1 to 3-60A-48 NMSA 1978).

Middle Rio Grande Conservancy District - The Middle Rio Grande Conservancy District (MRGCD) operates, maintains, and manages irrigation, drainage, and river flood control in the Middle Rio

Grande Valley. It promotes efficient and responsible water management, protects the environment, wildlife and endangered species in cooperation with other local, state and federal agencies, and it provides multi-use recreational opportunities within the Middle Rio Grande Valley.

Mixed-use Development - The development of a tract of land or building or structure with two or more different uses such as but not limited to residential, office, retail, public, or entertainment, in a compact urban form.

Mobile Home - A movable or portable housing structure larger than 40 feet in body length, eight feet in width or 11 feet in overall height, designed for and occupied by no more than one family for living and sleeping purposes but that is not constructed to the standards of the United States Department of Housing and Urban Development, the National Manufactured Housing Construction and Safety Standards Act of 1974 and the Housing and Urban Development Zone Code II or Uniform building Code, as amended to the date of the unit's construction or built to the standards of any municipal building code.

Mobile Home Park (MHP) - A parcel of land on which space is leased for occupancy by two or more mobile homes, and which contains facilities for the use of mobile home occupants.

Multi-modal - Transportation infrastructure that allows for the safe and effective travel of all users by providing multiple transportation choices, including options for motor vehicles, public transit, bicycles, pedestrians, and other users.

Net Metering - A utility billing mechanism available in New Mexico that offers a credit to residential and business customers who are making excess electricity with their solar panel systems and sending it back to the grid.

New Mexico Construction Industries Division - A division of the New Mexico Regulation and Licensing Department. The CID protects consumers by licensing and regulating the state's industry. The CID is responsible for ensuring construction is performed in a safe manner; licensing contractors and enforcing licensing laws; required licensure for any person practicing or offering to practice constructing contracting; enforcing the laws, regulations, and standards governing construction contracting; and providing resolution to disputes that arise from construction activities.

New Mexico Manufactured Housing Division - A a division of the New Mexico Regulation and Licensing Department. The Manufactured Housing Division's mission is to ensure the health and safety of manufactured homes and that the business practices of the industry are fair and orderly.

New Mexico Economic Development Department (NMEDD) - NMEDD houses a variety of economic development programs that provide direct assistance to New Mexico businesses and support community development. NMEDD administers programs such as Local Economic Development Act, Job Training Incentive Program, FUNDIT, MainStreet Program, Rural and Economic Development Council, and Business Incubator Certification, among others.

New Mexico Finance Authority (NMFA) - The NMFA assists qualified governmental entities in the financing of capital equipment and infrastructure projects at any stage of completion - from pre-planning through construction - by providing low-cost funds and technical assistance through a variety of financing resources.

New Mexico Mortgage Finance Authority (MFA) - The MFA provides financing for housing and other related services to low to moderate-income New Mexicans. There are 37 state and federal programs administered by the MFA that provide financing for housing, including low interest mortgage loans and down payment assistance, weatherization, green building and rehabilitation, and tax credit programs. The MFA partners with lenders, Realtors, non-profit, local governments, and developers. All state and federal housing programs are administered by the MFA, including Section 8 housing funds and other HUD projects.

Nonconforming Structure - A structure that was lawfully established but that no longer complies

with applicable zoning regulations because of the adoption or amendment of zoning regulations after the structure was established.

Nonconforming Use - A nonconforming use is a use that was lawfully established in accordance with all zoning regulations in effect at the time of its establishment but that is no longer allowed by the use regulations of the zoning district in which the use is located. Lawfully established uses that do not comply with separation distance (spacing) requirements are also deemed to be nonconforming uses.

Nuisance - The use of property or land that creates unusual, unnecessary, or undue problems or situations for persons in the vicinity that would not have normally occurred otherwise.

Ordinance - A municipal statute or legislative action adopted by a local government that has the force of law.

Overlay District - Supplemental regulations that have been tailored to a specific area of the community, such as an historic district. The regulations are applied in conjunction with a general or base zone to address specific issues.

Outdoor Recreation - Outdoor recreation includes activities that occur outdoors in natural environments and in outdoor urban man-made environments. They include such activities such as hiking and camping; hunting and fishing; canoing, kayaking, and rafting; sailing and motor-boating; biking; rock climbing; horseback riding; skiing; and restoration and conservation activities.

Planned Unit Development (PUD) - An area zoned to accommodate master-planned developments. This may include a mix of commercial uses, residential and non-residential uses, a range of residential densities, and allows for more innovative and efficient layout and design.

Plat - A plan or a map of a plot of land, containing a description of the property and everything on it, including roads, boundaries, and real property.

Public Health - The study and promotion of the overall health of a population, as opposed to looking at the health of individuals alone. Public health includes efforts to improve health outcomes in a community by addressing factors that may impact many residents, such as pollution, disease exposure, access to clean water, access to health facilities, etc.

Redevelopment - The process of renovating, replacing, and improving the built environment through reinvestment, new construction, and reuse. Redevelopment usually involves occupation and habitation of vacant buildings, rehabilitation of older buildings, construction of new facilities, public investment in infrastructure, and other economic development activities.

Renewable Energy - An energy resource that is rapidly replaced by a natural process, such as power generated from the sun or from wind. Includes biomass resources, such as agriculture, animal waste, or small diameter timber, but does not include energy generated by the use of fossil or nuclear energy.

Residential Density Bonus - The allocation of development rights that allow a parcel to accommodate additional residential units beyond the maximum for which the parcel is zoned, usually in exchange for the provision or preservation of an amenity.

Resolution - A formal expression of the opinion or will of an official municipal body adopted by a majority vote. Unlike ordinances, resolutions do not have the force of law.

Southern Sandoval County Arroyo Flood Control Authority (SSCAFCA) - An independent corporate political body with an elected board entrusted with flood and storm water control in Southern Sandoval County.

Streetscape - A design term referring to all the elements that constitute the physical makeup of a street and that, as a group, define its character including building frontage, street paving, street furniture, landscaping (trees and other plantings), awnings and marquees, signs, and lighting.

Subdivision - The division of land, lot, tract, or parcel into two or more lots, tracts, parcels, plats, or sites, or other divisions of land.

Subdivision Ordinance - A law or regulation set forth and adopted by a governmental authority, usually a city or county, to control the division of land by requiring development according to design standards and procedures.

Substandard Building - Any building or portion thereof, including any dwelling unit, guest room or suite of rooms, or the premises on which the same is located, in which there exists conditions to an extent that endangers the life, limb, health, property, safety or welfare of the public or the occupants.

Transit Oriented Development (TOD) - A mix of commercial, residential, office and entertainment centered around or located near a transit station. Dense, walkable, mixed-use development near transit attracts people and adds to vibrant, connected communities.

Vacant Building - A dwelling, dwelling unit, efficiency dwelling unit, habitable space, residential building, or structure lacking the continuous habitual presence of human beings who have a legal right to be on the premises for a period of 90 days or longer but excluding property under a listing agreement with a real estate agent licensed in New Mexico.

Wildland Urban Interface (WUI) - An area where human made structures and infrastructure are in or adjacent to areas prone to wildfire.

Zoning - The division of a municipality into different districts or zones, in which specific land uses are permitted, allowed conditionally, or prohibited.

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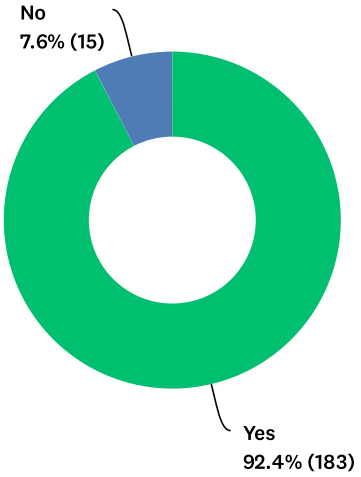
INTRODUCTION

As part of the planning process to update the Comprehensive Plan, Consensus Planning designed and administered a community survey to gain public input on a wide range of community issues. Responses were collected between June 15 and July 31, 2021. The Community Survey was available electronically via Survey Monkey and printed versions were available at public locations. A total of 198 people responded to the Survey. The Comprehensive Plan incorporates key takeaways from the Community Survey within each relevant section. The full survey results are shown in the charts below and are followed by the participant's verbatim written comments.

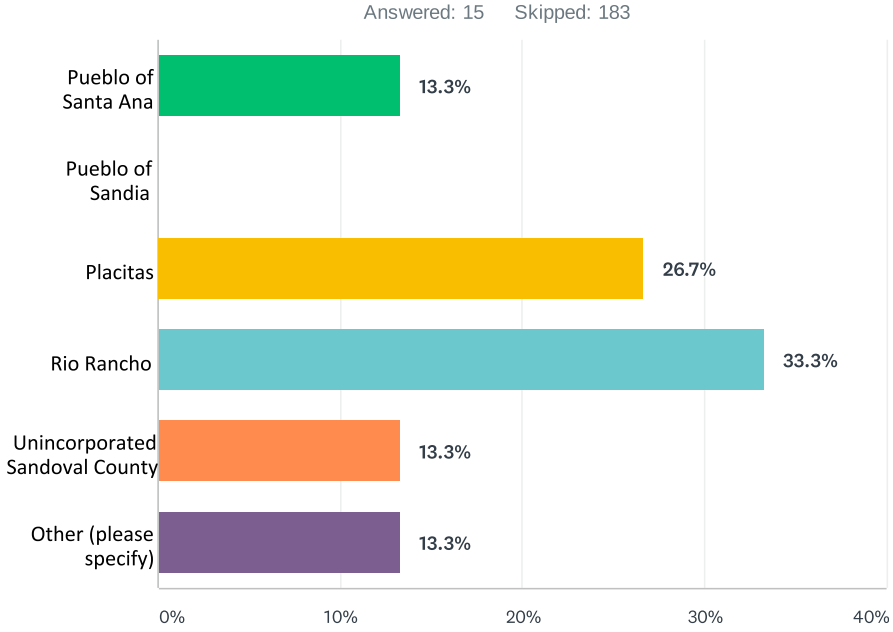
Q1 Do you live in the Town of Bernalillo?

Answered: 198 Skipped: 0



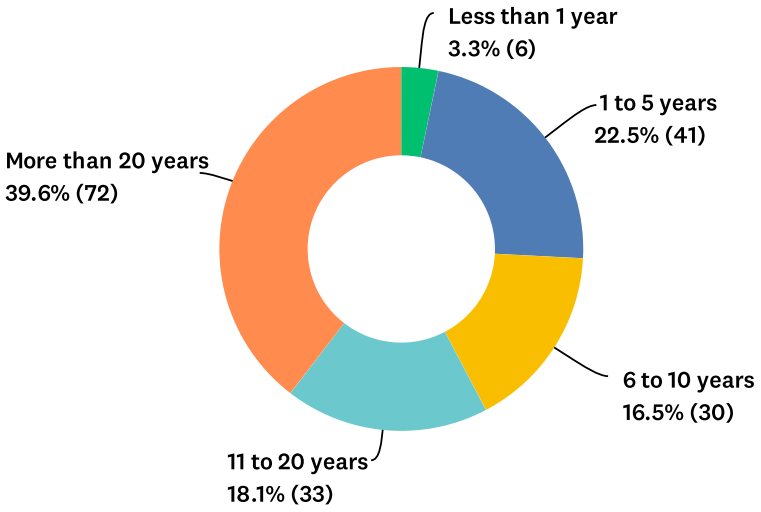
Q2 Where do you live outside of Bernalillo?

Answered: 15 Skipped: 183



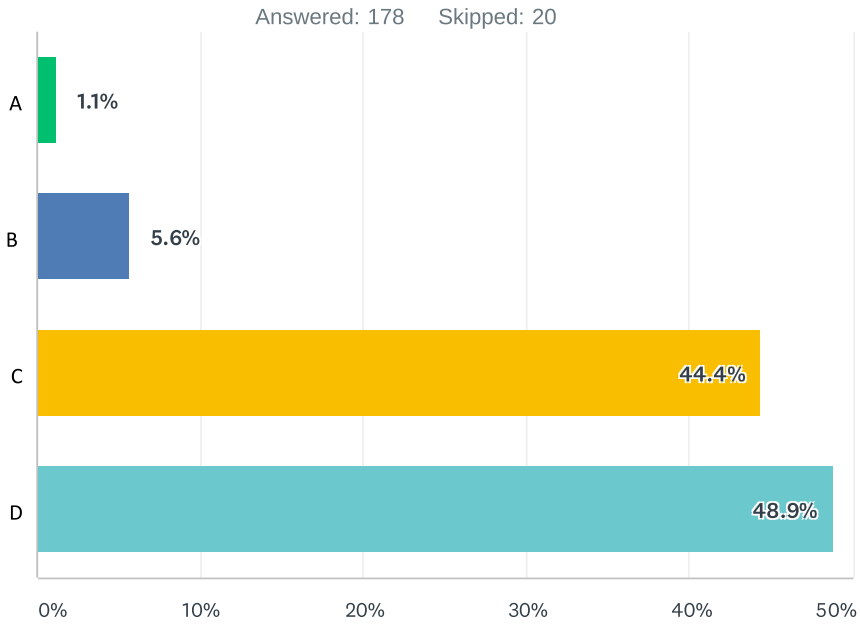
Q3 How long have you lived in Bernalillo?

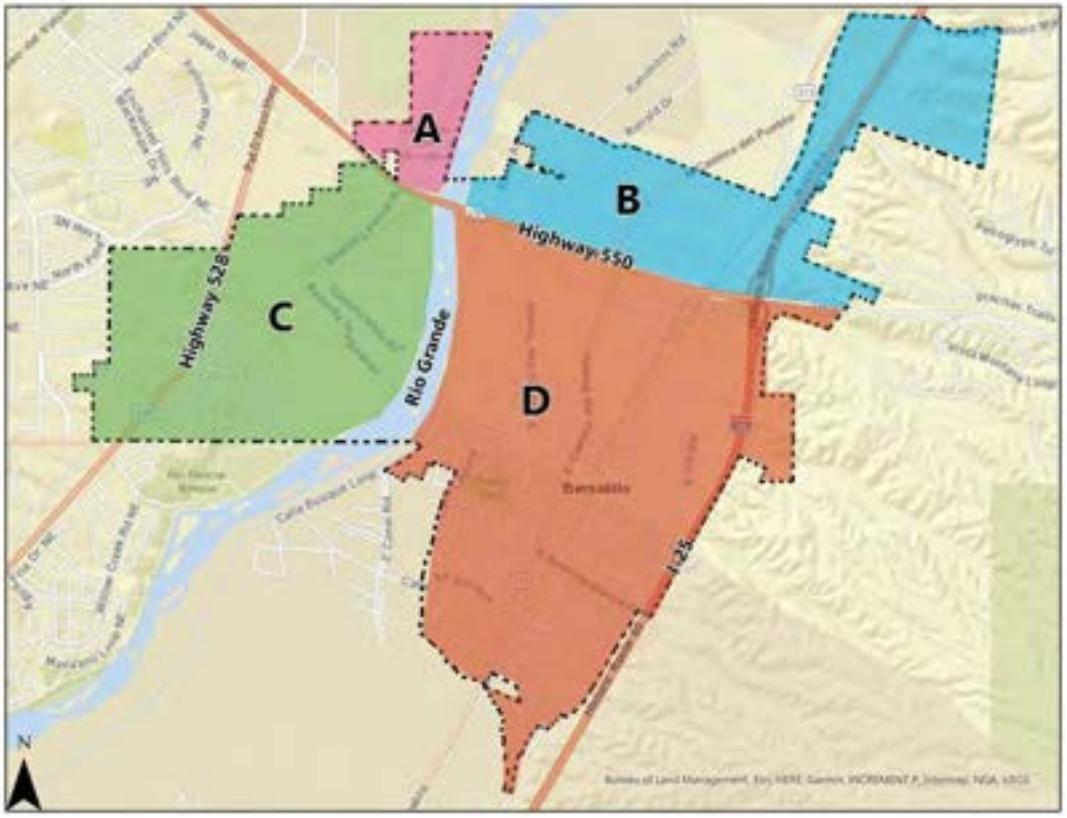
Answered: 182 Skipped: 16



Q4 Using the map below for reference, where do you live in Bernalillo?

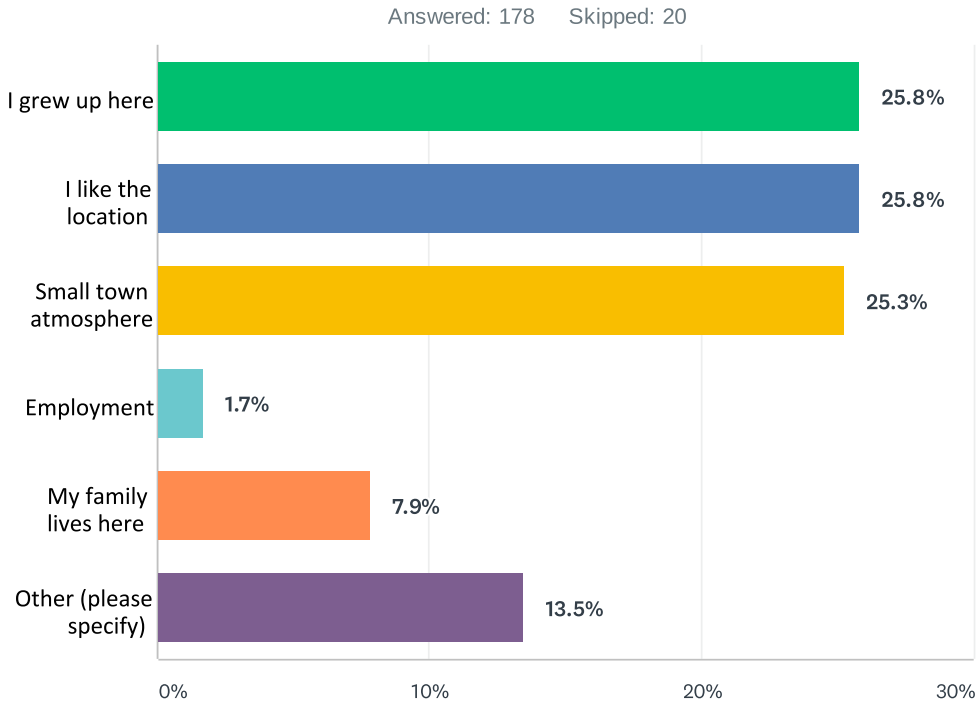
Answered: 178 Skipped: 20





Q5 What is the main reason why you live in Bernalillo?

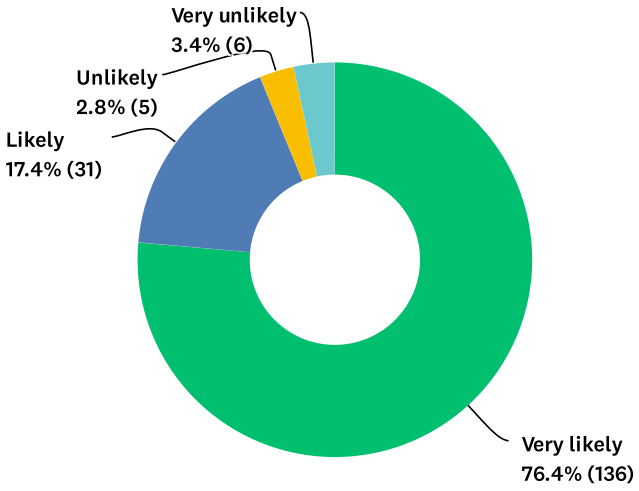
Answered: 178 Skipped: 20



Q5 OTHER (PLEASE SPECIFY)
I grew up here, I like the location, Small town atmosphere, my family lives here
Small town atmosphere and humidity in the east was unbearable
be near friends
Employment and My family lives here
Because if I lived in Albuquerque I would probably be dead.
All the above
married,to wife who lived here.
No housing on Tribal community
Found home for sale we liked on Zillow
Found home for sale we liked on Zillow
Small town with lovely scenic locations
beautiful views and great people
Married someone that lives here
Close to the Railrunner
We like the small community and security of our neighborhood.
Neighborhood and safety
Beauty of the bosque and quietness
The house we have and the neighborhood that we live in.
Safety, Location and Small Town atmosphere
I lived here and went to school here, after 35 years in cal. I enjoyed it when I came back on vacation, so I moved back
History, culture, beauty of surroundings, low taxes
Found an outstanding home in a quiet neighborhood.
Real estate acquisition to build homes off sheriffs Posse rd.
all the above

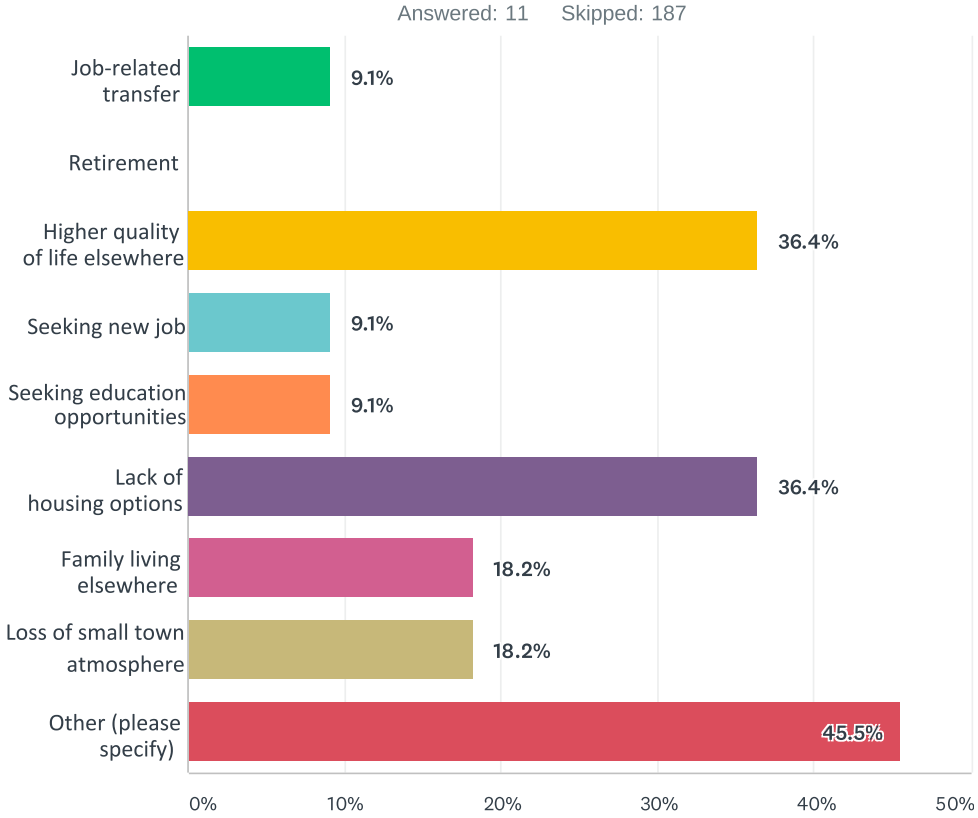
Q6 How likely are you to live in Bernalillo for the next 2 to 5 years?

Answered: 178 Skipped: 20



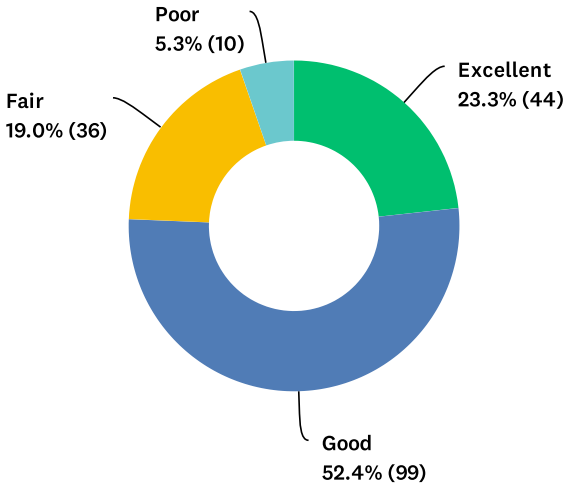
Q7 Which of the following reasons would cause you to leave Bernalillo?(choose all that apply)

Answered: 11 Skipped: 187



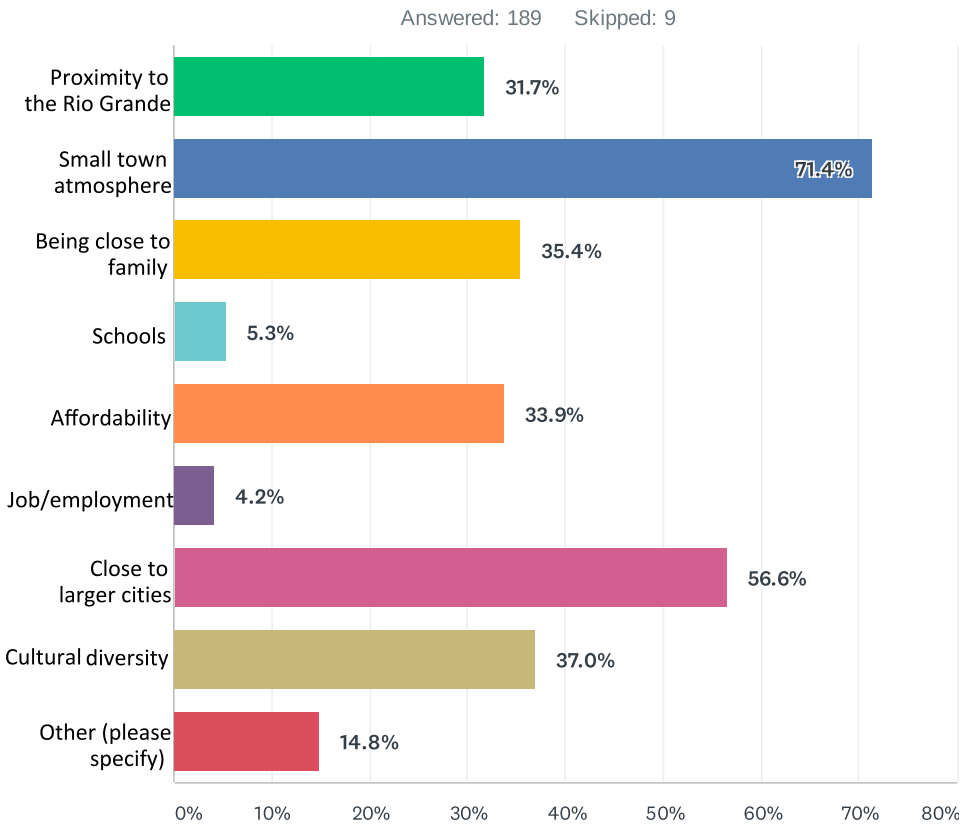
Q8 How would you rate the quality of life in Bernalillo?

Answered: 189 Skipped: 9



Q9 What are your favorite aspects about Bernalillo? (choose all that apply)

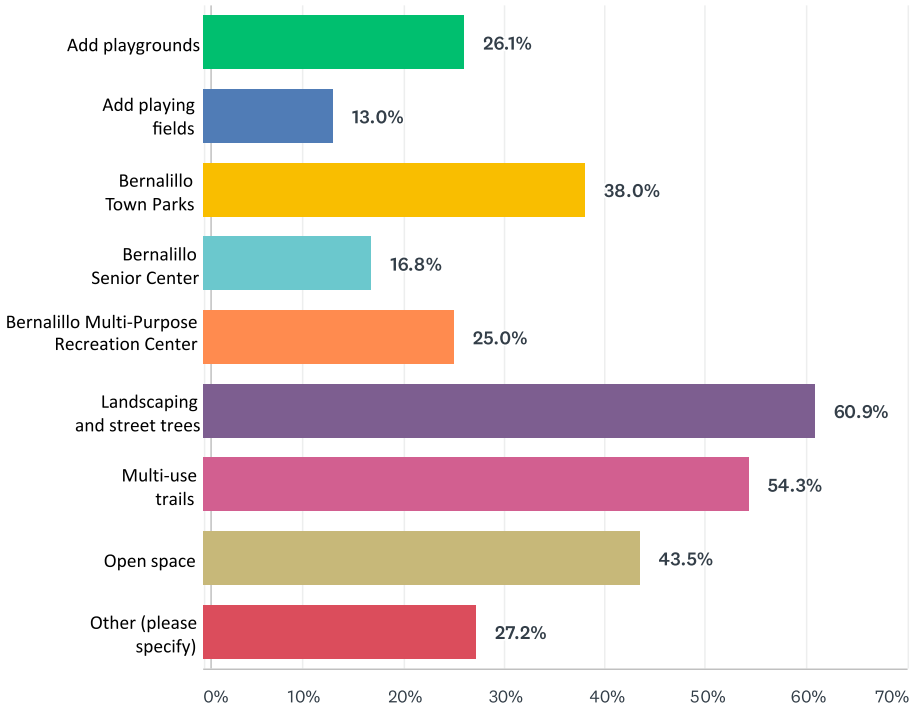
Answered: 189 Skipped: 9



Q9 OTHER (PLEASE SPECIFY)
Rodeo
Did not select an answer
Senior Center
Senior Center
City and agriculture
We have 2/3 of an acre of land which I like. I have a garden and grapevines and fruit trees.
My grandparents located here, my siblings and I grew up here,my grandfather owned a large amount of property here and was well known for his up bringing as a cattle rancher the biggest land owner in Mt. Taylor, and I still live in the family home where we were brought up. We also had San Lorenzo here and are very proud of our family culture and up bringing.
Farmland
Proximity to most stores needed to live
Bernalillo is a safe town
no longer like town
Wonderful history, historical town, great restaurants and friendly people.
close to services
Close to outdoor recreation opportunities, dry climate
Low crime rate
Good government
close to I-25
Gated community
Easy transit access to I-25
less crime than Albuquerque
Low crime and safety
Rural feel
Loved the house and yard we bought with view of mountain.
History
Friendly people, Annual Events
The people who make up the community
Newer homes - especially on West side.
weather and access to the western part of the country

Q11 What Town facilities should be improved or expanded? (choose all that apply)

Answered: 184 Skipped: 14



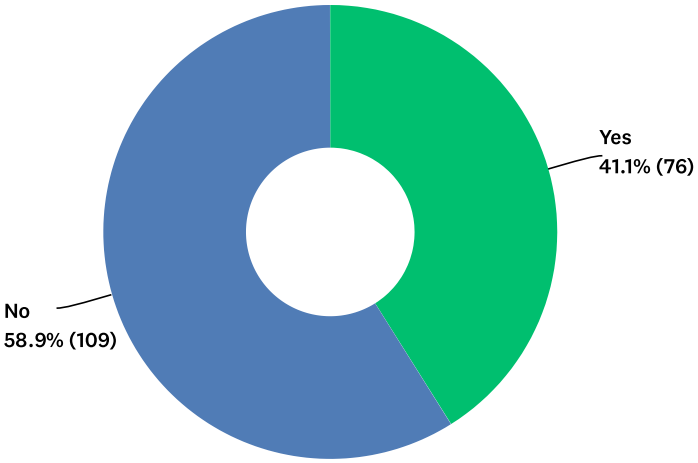
Q11 OTHER (PLEASE SPECIFY)
Allow residents to have priority to Rec Center. Have job training workshops, learning classes, etc.
Add more facilities and programs for the children of Bernalillo to be involved in so they don't find something else to do with their time that is not good for the town or the citizens of Bernalillo.
mainstreet walking improvements
The Town should try to purchase open space when it becomes available to minimize population and density growth
The new drainage and park at the south end of town is a nice improvement!
Make playground useable in the heat. Provide shade over equipment.
Clean up town and add flooding resources
Unneeded stop signs.
work training, self awareness programs and training
Pueblo, Spanish architecture only and much better sign loves restricting pole signs signs larger than 50 square feet and giving businesses and incentive to put monument signs on the ground. Good sign laws make for attractive communities bernalillo doesn't have to look like Kansas or Arkansas or Texas it's too beautiful a place it really needs much better sign loss much better landscaping much better traditional architecture

Repaving of streets, Sheriff Posse Rd. & Better standards for Industrial and other businesses. Eliminate grandfather properties that no longer serve the communities. Besides all core Town of Bernalillo services consider other areas to place services. Area East of Walmart. .
They need to have activities for children during the summer
Graded roads should be maintained regularly, regraded and stone added OR better yet PAVED
Graded roads should be maintained regularly, regraded and stone added OR better yet PAVED
Enforce zoning rules like blighted properties that are never cleaned up/condemned.
Skate Park, Public Pickleball Courts at Sr. Center
We moved to Bernalillo during the pandemic. We hope to use many more of the towns amenities' going forward
roads, water system
Pools
Bicycle lanes
I'd like to see more opportunities to take classes , join clubs, make friends.
We like it the way it is
desperately need more businesses/restaurants
Clean what is already in place!
Access to the Rio Grand
Complete the @Rio project
Dog park
Outdoor pickleball courts
Focus large scale development in old town Bernalillo
Access to river needs to be improved. Also, how can we reduce traffic on Sheriff Posse Road
bicycle lanes and paths
Too much litter around shopping centers
Street lights, animal shelter for the cat problem
Swimming pool other activities fir kids
Urban forestry, historical statuary, public gardens, landscaping, bike lanes (it is truly a cycling town), roadside landscaping. There is no use having an amazing history of the town does not celebrate that history in tangible, visible ways.
I dont belive you have to landscape all town properties but I do support planting more trees in public places
Sherriff Posse Road
Open Space near the River.
Housing
clean up and fix roads in area of mountain view estates

Add businesses to Downtown area and beautify that area. Make people aware of area - I only know of two parks and one has no benches or playgrounds. I have no idea what is in the Recreation Center and who can use it.
Finish/install sidewalks on roads that are used more often
Finish El Molino
Downtown could attract more visitors and shoppers
Litter clean up. The litter is horrible surrounding Walmart.

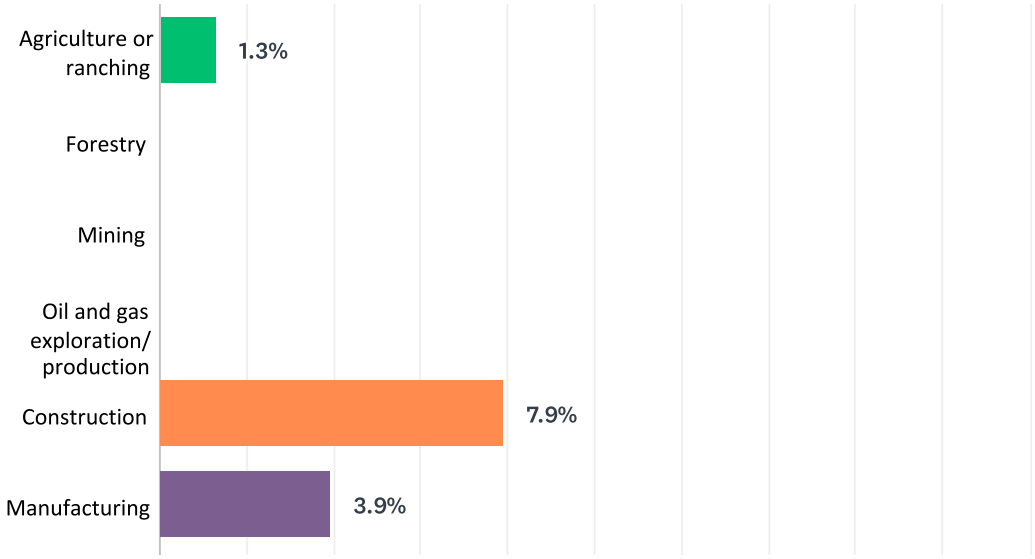
Q12 Are you currently employed?

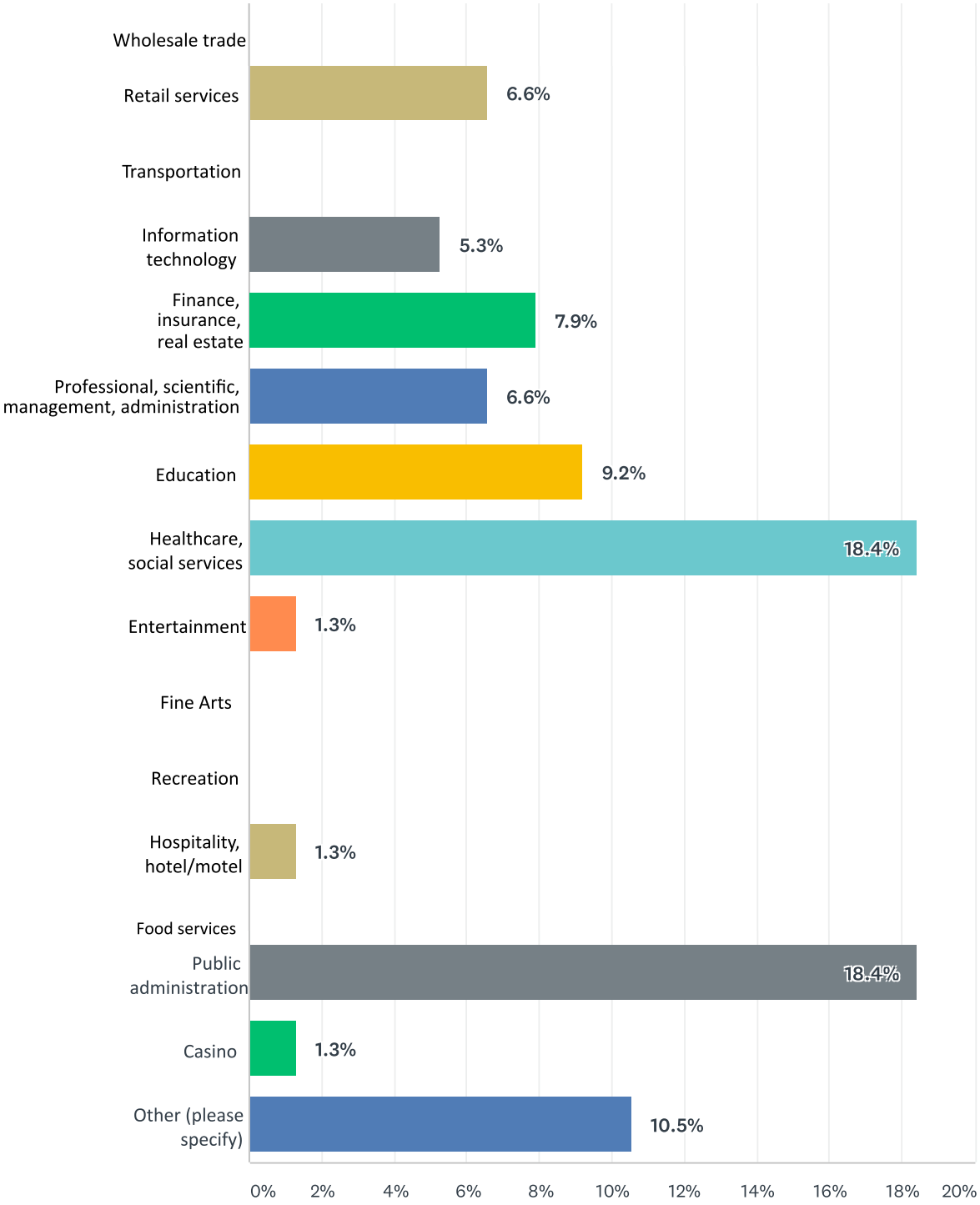
Answered: 185 Skipped: 13



Q13 What type of employment are you primarily engaged in?

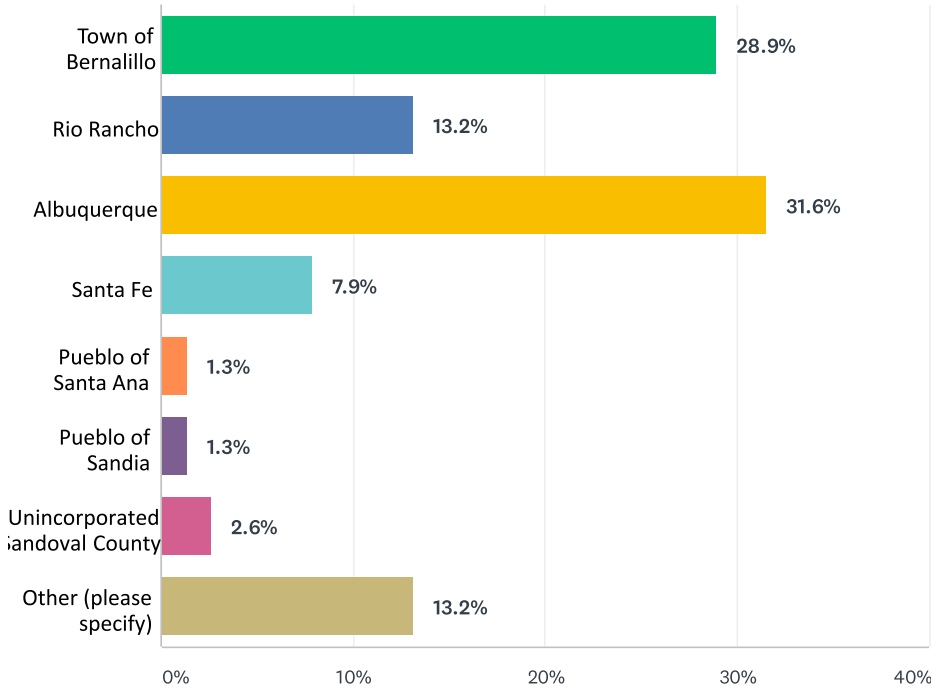
Answered: 76 Skipped: 122




Wholesale trade
Retail services
6.6%
Transportation
Information technology
5.3%
Finance, insurance, real estate
7.9%
Professional, scientific, management, administration
6.6%
Education
9.2%
Healthcare, social services
18.4%
Entertainment
1.3%
Fine Arts
Recreation
Hospitality, hotel/motel
1.3%
Food services
Public administration
18.4%
Casino
1.3%
Other (please specify)
10.5%
0%
2%
4%
6%
8%
10%
12%
14%
16%
18%
20%

Q14 Where is your job located?

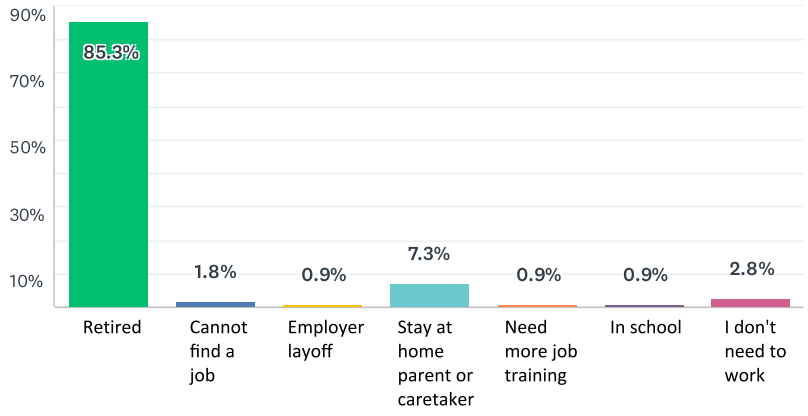
Answered: 76 Skipped: 122



Q14 OTHER (PLEASE SPECIFY)
Placitas
Contract license
Self-employed
Retired
Offices are in Albuquerque but currently working remote from home
All over between Albuquerque & Santa Fe
Edgewood
Edgewood
ABQ/Los Alamos

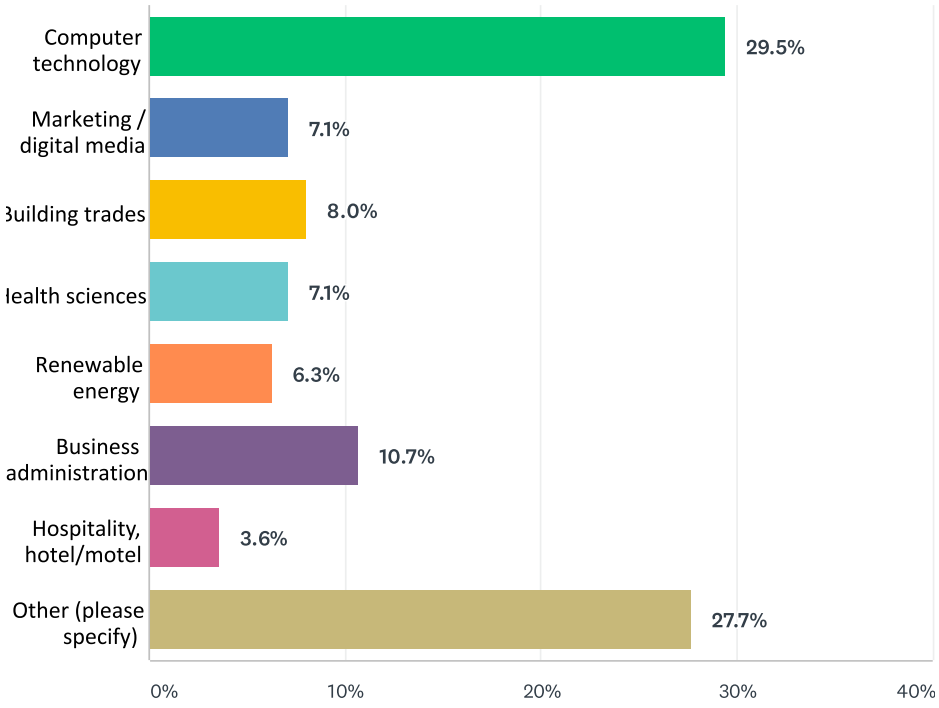
Q15 If you are unemployed, what has prevented you from getting a job?

Answered: 109 Skipped: 89



Q16 If you feel like you need more job training, what type of training or education would that be?

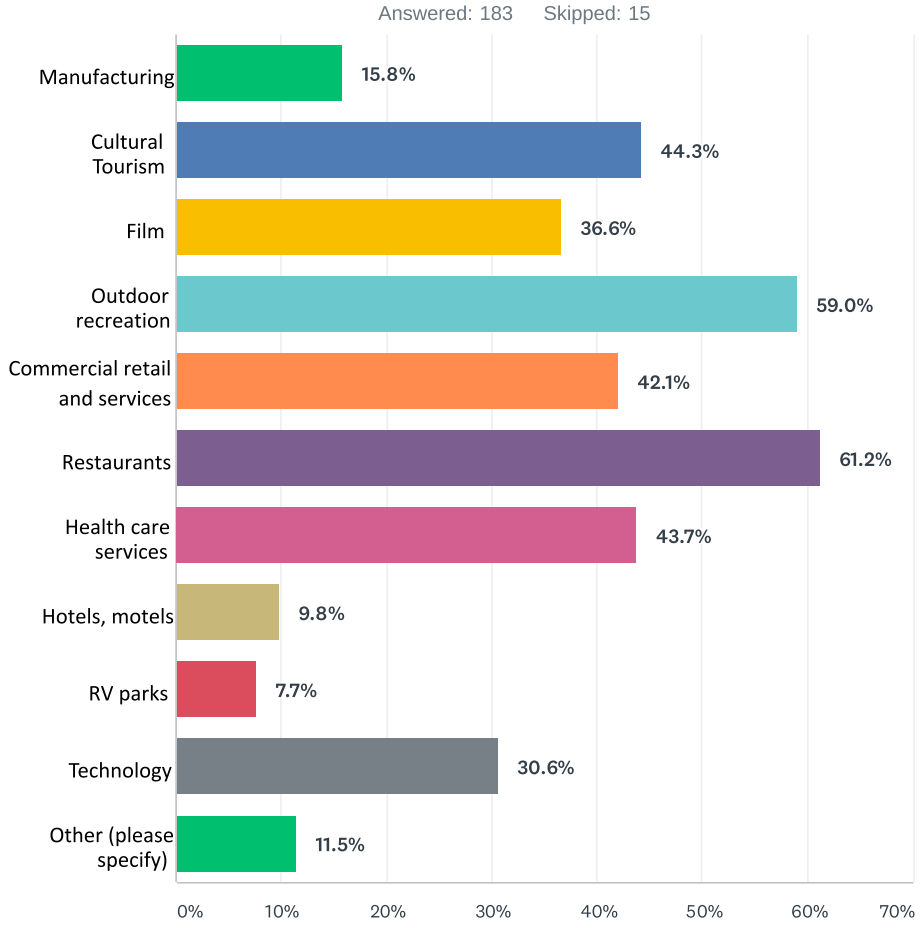
Answered: 112 Skipped: 86



Q16 OTHER (PLEASE SPECIFY)
Computer technology, building trades
Mental health and addiction
Disabled, health issues
There's isn't that many jobs in bernalillo for any of these
comp tech,reneawble energy and trades
Anger management
Advanced Math
Any job training or educational options would be welcomed
Mental health and addiction

Q17 What areas of economic development should Bernalillo focus on expanding? (choose all that apply)

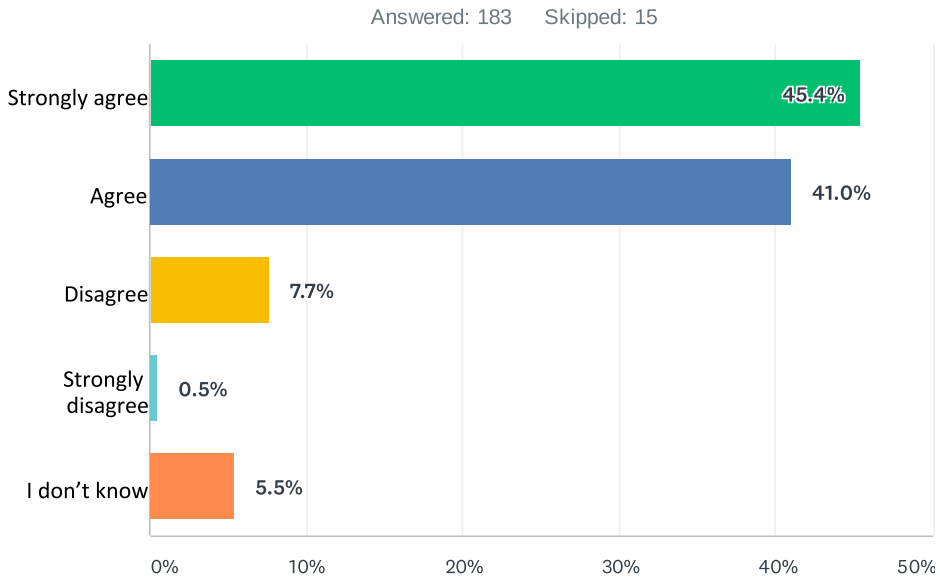
Answered: 183 Skipped: 15



Q17 OTHER (PLEASE SPECIFY)
Housing - Apartments
I would like to see some townhomes near the Rail Runner and perhaps a full scale development of the old elementary area. The very center of Bernalillo could support slightly more density and activity. I would like to see more options for younger people and first time home buyers. For couples who work in both ABQ and Santa Fe the location is great.
open up more opportunitys for younger children in the community, example the swimming pool, playtime for kids of all ages at the park.
Safe places to walk
In Old Town like plaza with restaurants, beer gardens that have beautiful patios and views.
develop main street w more small business/ galleries
Green energy
g Smiths would be ideal
Grocery store addition
Condemn empty and falling down houses and make a deal with builders/developers to build more affordable housing.
We like it the way it is
Keeping mendacious developers off the Bosque
Better access to the Rio Grande
Would like to see walking trail along river linked to Willow Creek trail.
Cleaning up town
Banks

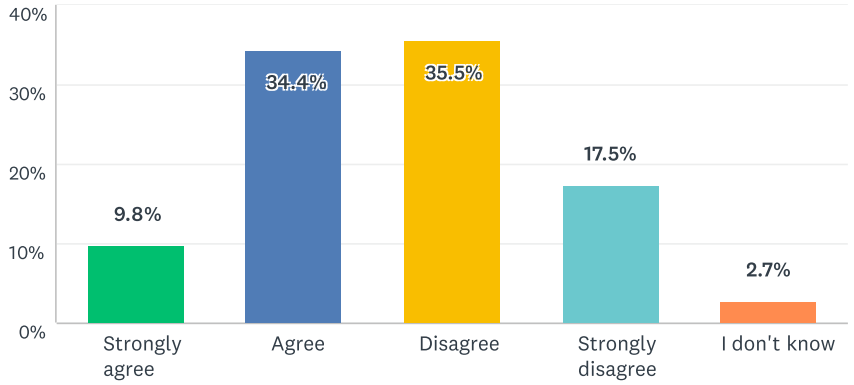
Q18 The visual appearance of the Town should be improved.

Answered: 183 Skipped: 15



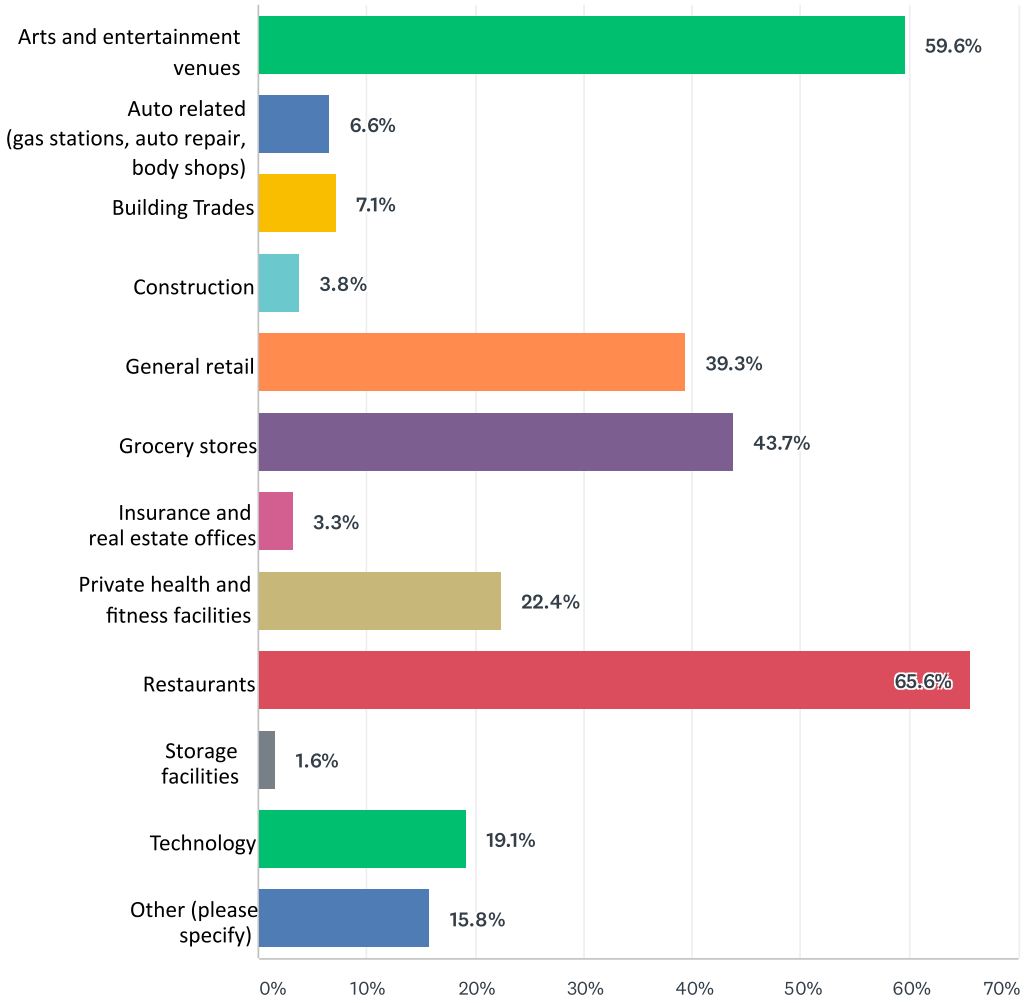
Q19 There are adequate commercial retail (e.g. grocery stores, bakeries, clothing stores, building material stores, etc.) and services (e.g. banks, vehicle repair, hotels, restaurants, self-storage, etc.) in Bernalillo.

Answered: 183 Skipped: 15



Q20 What types of commercial retail or services are needed in Bernalillo? (choose all that apply)

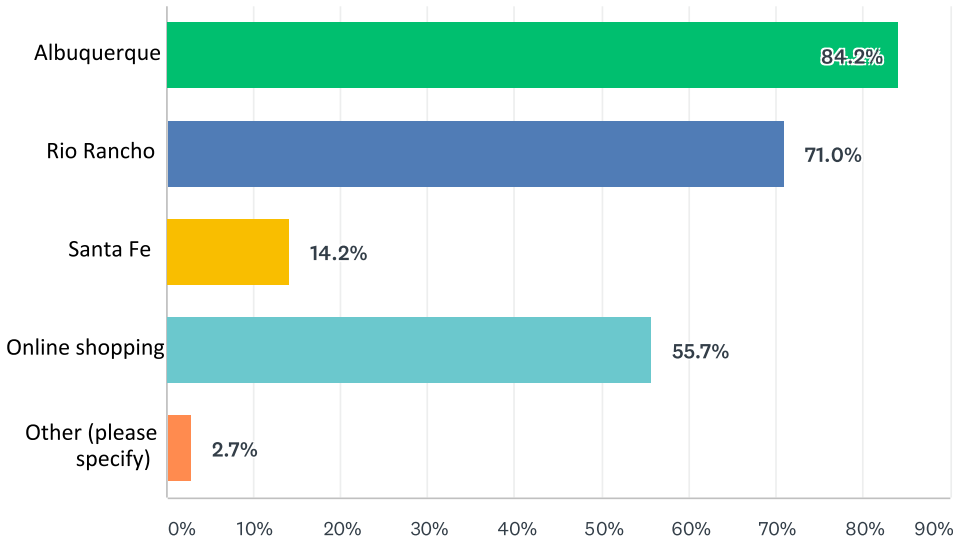
Answered: 183 Skipped: 15



Q20 OTHER (PLEASE SPECIFY)
Did not make a selection
Did not make a selection
did not select an answer
Did not make a selection
no
Something for the youth of Bernalillo.
NONE
All new fast food restaurants should be built in traditional New Mexico architecture with monument signs only. We should keep bernalillo bernalillo not Texas.
bakery, coffee shop, pub
Better review of standards for all industries and businesses. Bernalillo has become a "a dumping ground" for industries and businesses that Albuquerque rejects. s
Target
Zoning enforcement like noise ordinances, run down properties, littering, animal abuses and speeding through town.
Movie Theater!, Sprouts or Trader Joe's, dry cleaner on West Side.
Outdoor recreation
I don't think we need more. We can go to RR for lots of those things. I like our small town feel.
we don't need more. I like the small town
Costco would be a great addition.
Medical
Restaurants that are not fast food
Outdoor pickleball venue
Trader Joes Stop the graft and nepotism keeping them out.
Small business. Not franchises.
Sprouts, Trader Joe's, Movie Theatre, Nice Bakery
Banks
Traditional, historically informed crafts, pottery, jewelry, galleries.
Less fast food - more casual dining. We need a Sprouts
Clothing Stores Preferably high end if possible. But any garment store will do.
Bakeries
Plant nursery

Q21 If Bernalillo doesn't have what you need, where do you go for shopping or commercial services? (choose all that apply).

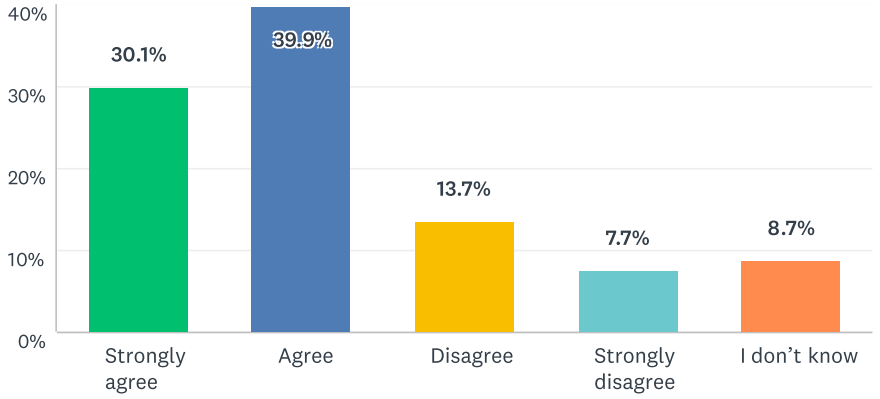
Answered: 183 Skipped: 15



Q21 OTHER (PLEASE SPECIFY)
Did not make a selection
no
Not necessary mostly
550
When we go back to Missouri & Illinois, I shop there. - Would prefer to do it here.

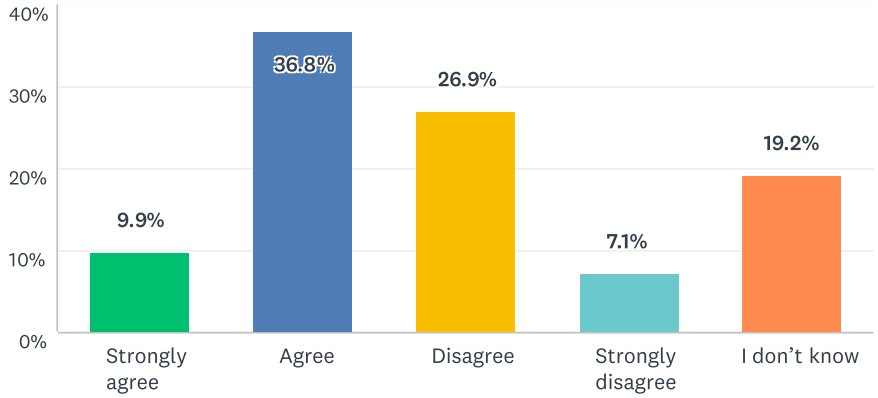
Q22 Bernalillo should encourage the development of vacant or underutilized parcels in areas that are already largely developed.

Answered: 183 Skipped: 15



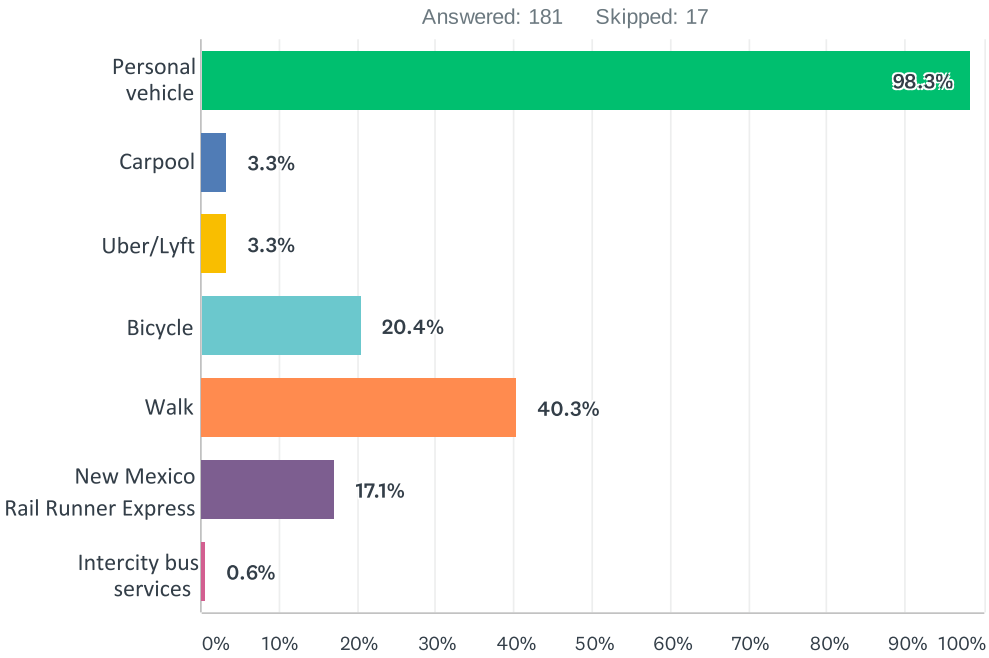
Q23 Bernalillo should encourage development that allows people to live and work in the same building or on the same site.

Answered: 182 Skipped: 16

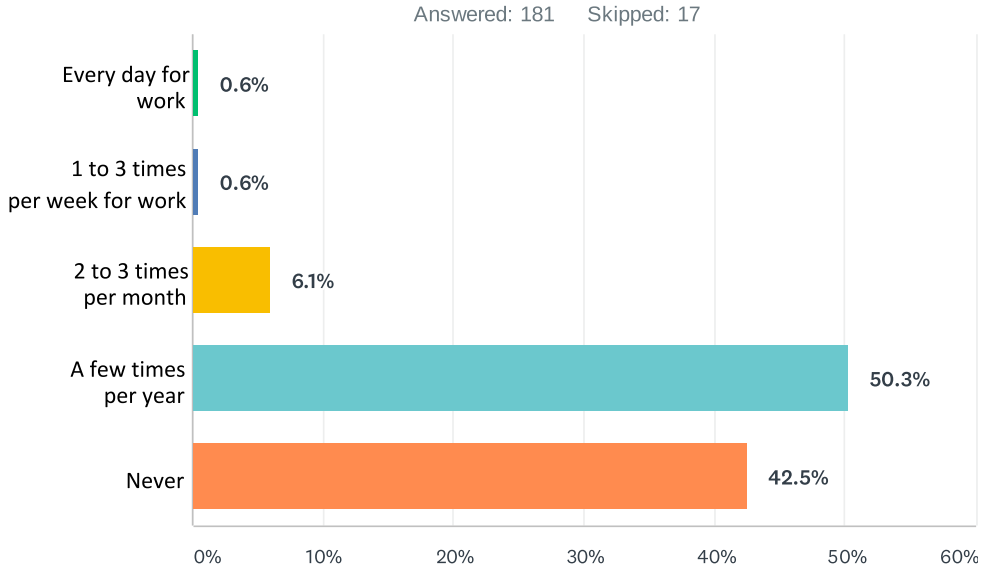


Q24 Please indicate the transportation modes that you currently use (choose all that apply).

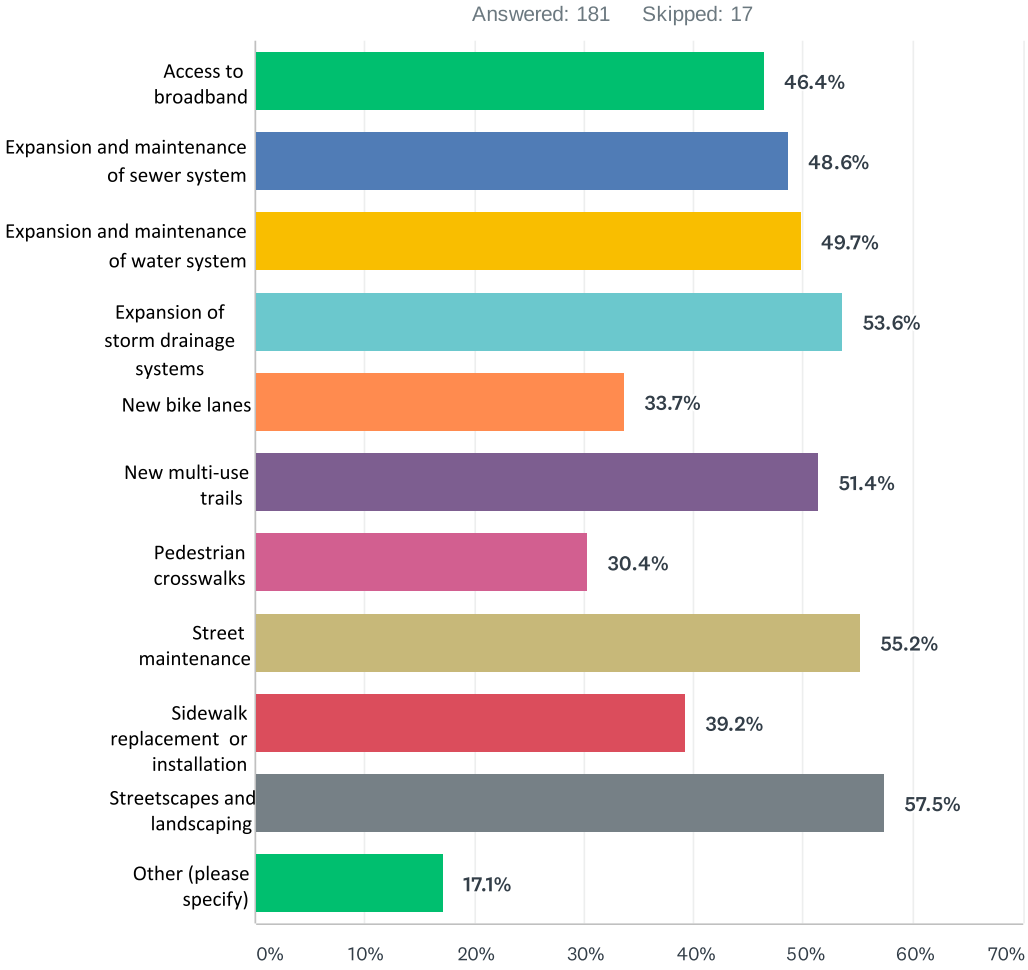
Answered: 181 Skipped: 17



Q25 How often do you use the New Mexico Rail Runner Express?



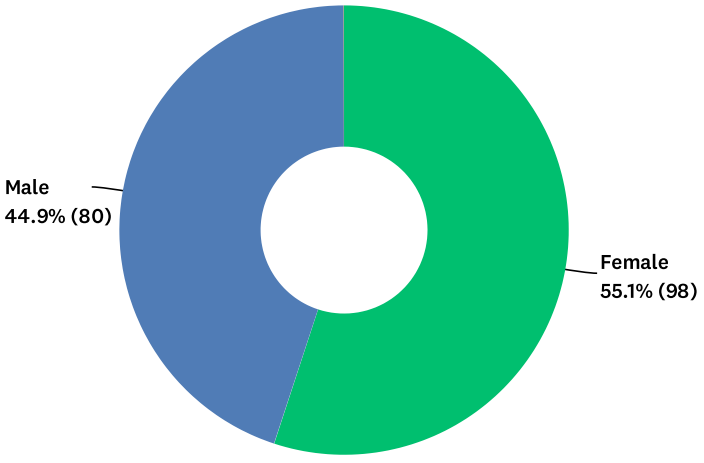
Q26 The Town of Bernalillo should focus on the following transportation and infrastructure improvements (choose all that apply).



Q26 OTHER (PLEASE SPECIFY)
did not write an answer
fix I-25 off ramps, on ramps, - overpasses, 550 - second level (illegible) lower (illegible) grading east to 528
Paving of streets on the south side placing speed humps on San Lorenzo St to slow the traffic down, Semi trucks pas through residential area the streets are getting worse messed up have them take a different route.
Paving the streets on the south side, placing speed humps on San Lorenzo, the cleaning of weeds on Main Street, and have the sweeper clean the streets at least once a month.
Housing
did not write an answer
The main street in Bernalillo has flooded since I've been living here. It's unfortunate that even if the roads and sidewalks are improved there is still a "lake" as you drive down the street EVERY TIME it rains.
The town has too many restrictions on what the people can do with their own property. If we own our property we should not have to get permission to do something like a deck or fence (etc) especially if it is for the safety of the property owner.
I'd like to have a sidewalk/bike lane on Sheriff's Posse Road to access the retail on the westside of the river.
Bernalillo need's to keep up with the most current way's that bigger town's and cities use to install water meter's. The city should not require the home owner to pay the construction part of it when other small town's have there worker's do the work, alot of plumer's do not have the equipment the town has.
transportation
General clean-up. Took much trash and debris on some roads and around mailbox clusters
No business should be allowed to open bernalillo unless it's completely landscaped. Landscaping must be a part of every building plan that is created and all signage should be monument signs.
clean streets/streetside of garbage, filth, junk, litter

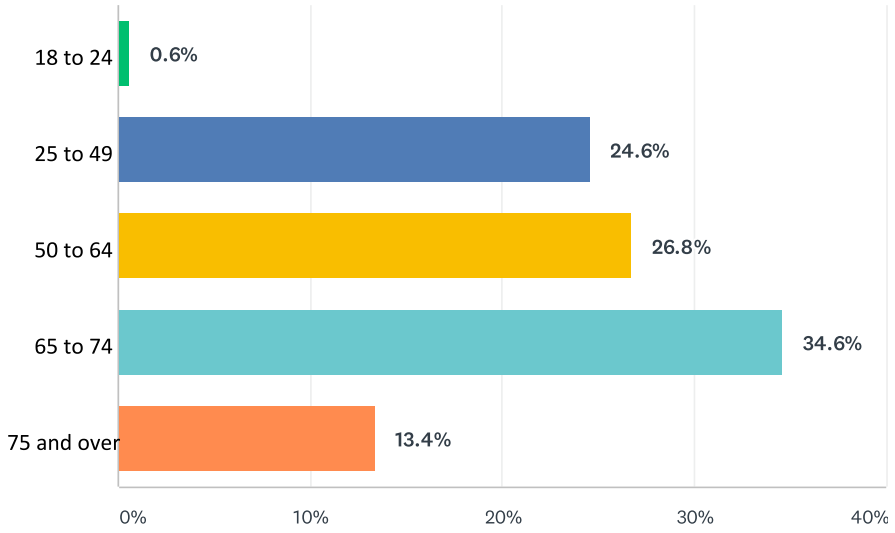
Q27 What is your gender?

Answered: 178 Skipped: 20



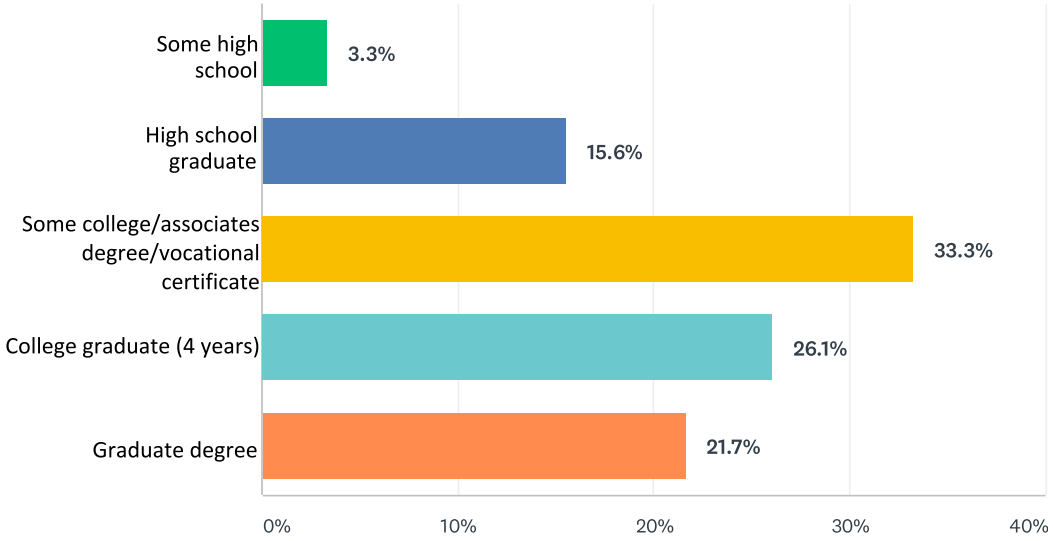
Q28 What is your age category?

Answered: 179 Skipped: 19



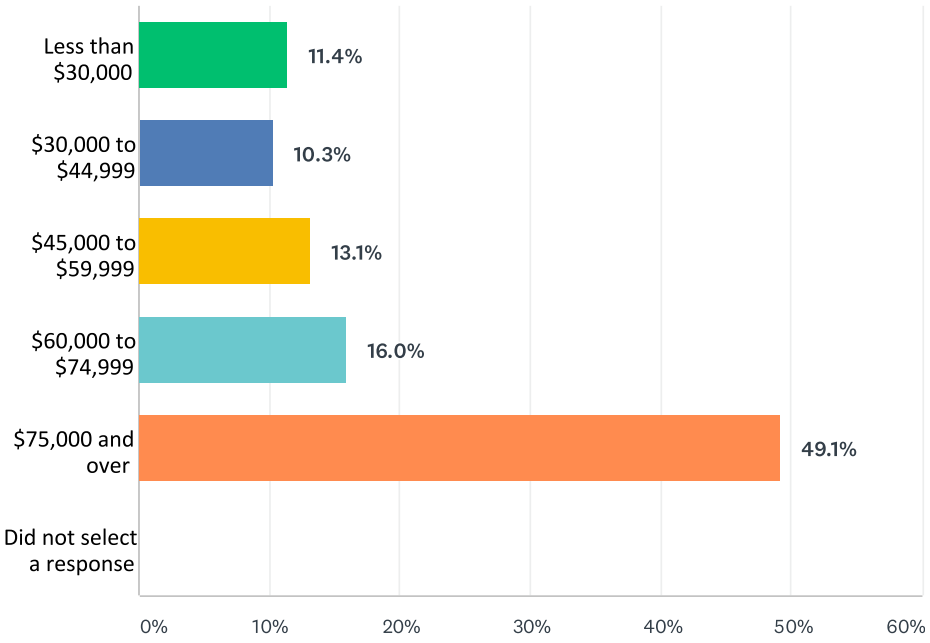
Q29 What is the highest level of education you have attained?

Answered: 180 Skipped: 18



Q30 Which of the following categories best describes your total household income?

Answered: 175 Skipped: 23



Q31 How do you describe your race and ethnicity?

Answered: 163 Skipped: 35

Q32 Are there any additional comments you would like to share with the Town of Bernalillo?

Answered: 106 Skipped: 92

#	RESPONSES
1	The town is dull, has lost its traditional roots, no entertainment, rec center usually used by outside of town residents
2	Bernalillo should limit the time the Mayor, Council and Judge serve, like the state or government do.
3	Yes. The Wine Festival is gone. Have a Western Week. Music, riding events, native american (illegible), western cooking and southwest food, horse trading, western clothing and native dress, jewelry, (illegible), saddles etc.
4	Cops - leave older homeless people alone - home for the homeless
5	- Cops - leave the older homeless people alone. - Apartments - for the homeless - Art classes for the seniors
6	Instead of spending money on street lamps, please fix the road flooding that occurs every time it rains. It's unfortunate for an elderly person like myself to feel "threatened" every time it's raining for fear of an accident because of poor drainage on the main road through the town.
7	I feel that the town is too busy catering to the tourist instead of the people of Bernalillo. Our school system has much to be desired. There are so many problems that need to be addressed in the middle school and high school. Pueblo Government do not belong in the public school system. If a student from the Pueblos need to be disciplined, Bernalillo needs to handle the situation NOT THE PUEBLOS. The staff of the schools. Last time I checked it was called Bernalillo Public Schools not Sandia, Santa Ana, or any other pueblo public school. People move here to get away from the big cities for peace and quiet and Bernalillo has turning into the opposite and that is really sad. Focus more on the people of Bernalillo.
8	Traffic flow across bridge Healthy food and shopping Don’t sell the best land to Walmart
9	no
10	Need more sidewalks and fill in cracks on ashphalt around the town
11	I love to walk but don't because of unattended dogs. They are a real problem, especially in the early morning. All the new sidewalks, open spaces, etc. are off-limits for me because of dogs.
12	Yes - I would love to see the Town of Bernalillo create an RFP using CDBG funds and any others available (perhaps also collaborate with Pueblos nearby - consider feasibility of County wide?) to request a plan to create a carbon neutral town within 10 years in the best case scenario - 20 worst case. Personally, i found David Attenborough’s recent film “Breaking Boundaries” an excellent frame. It would be wonderful to give the tools for each household to cut their carbon emissions in half every ten years. To consider regenerative gardening techniques (i didn’t realize tilling the soil creates massive carbon emissions, for example) - to motivate restaurants to highly sustainable menu items - could be fantastic. Towns and cities are doing this around the world. Let’s join in!! Bernalillo can do this - i do believe it to be true. I can see electric bikes - helping to insulate and rehab homes - creating not only sustainable housing but maintaining affordable housing. (Work with the NMMFA to perhaps do 10 roofs/year in Bernalillo). It would create more efficiency and build pride in our town. Thank you for doing this survey.
13	Sheriffs Pose needs improvement. There is too much traffic on it.
14	My family loves living here.
15	Keep up the good work.

16	Get rid of abandoned homes and buildings
17	Clean up the sawmill housing area.
18	I was so pleased to see that a pedestrian bridge was added to the south side of 550 over the river. It feels like that was about all Bernalillo residents got from all the 550 construction (other than congestion, difficulty breathing and too fast traffic). However, once you cross the river on foot or by bike, there's no way to get to the retail centers in the west side of Bernalillo. A continuation of the trail or a bike/pedestrian lane on Sheriff's Posse Road would really help Bernalillo residents who don't drive. It's very scary to see young families trying to safely negotiate that route.
19	I appreciate that you are asking for input.
20	Bernalillo is a great place but something needs to be done about the homelessness, drugs and trash near businesses on 550
21	I think the town need's to focus more on the clean up required by homeowners. We have trash, none running vehicles,in many homes more than 1, and weed's. Homeowner's should be held accountable of face a fine.
22	You do not ask about maintaining existing zoning/plan for Bernalillo. To me, this is the critical issue for at least the west side of Bernalillo, where we purchased our house 15 years ago based on that plan, which basically would keep this residential area essentially low density residential. I'd like to see a focus on keeping our area as it was "promised" when we moved here. I'd also like to see business development efforts focused on existing commercially zoned areas.
23	Do what is right for the residents of Bernalillo not Rio Rancho
24	Bernalillo needs to stay a small town. That is what make is special.
25	No
26	The town of Bernalillo needs to have a plan in place as well as financial backup incase there is another pandemic. The town did not offer adequate assistance.
27	Local police need to follow up on calls. Seems all they can handle are traffic. Drug houses seem to have impunity to the law. Address loud noises and not ignore them. Tone down police intimidation.
28	1) decrease arsenic in water 2) flood zone - fix levy to decrease flood zone 3) litter messaging 4) enforce night time dog noise 5) condemn empty homes and solicit builders to beautify...or make owners beautify.
29	The small-town characteristics of Bernalillo appeal to me and I'd like to see it retain its small-town vibe.
30	The Town needs to hold the home owners accountable for the vacant properties/homes. There are so many properties that are vacant and need to be cleaned up. There are houses falling down. They are a eye soar and make our town look awful.
31	town has lost its tradional views, no longer feels like a close community,
32	We need better traffic control. Speeding, especially on side streets, and loud engines/mufflers are annoying. Speeding is a safety issue in residential areas.
33	…my town is dirty little town, with household yards filled with old cars, appliances, broken wood, etc…no pride and cleanliness…550 is 550, not so much Bernalillo, so more small businesses needed…parks need more benches and more picnic facilities…senior center cold, unfriendly, not comfy…small community gardens would be nice…
34	I think we should do everything we can to transition all public buildings and private housing to renewable energy.
35	I would love to see a road study done, especially as the town continues to grow.
36	* I would like to see more programs/activities for children to do in summer and after school. * Make home owners knock down or remodel the abandoned homes. On San Lorenzo there are about 4 homes that have been abandoned for years. On Don Tomas there are two homes on the same side of the street. * We need to keep our "town beautiful"

37	Because this is a small town more emphasis on the culture of the town and decorating the Main Streets for holidays, like putting banners on the street lights at Christmas and for special occasions. In addition there are several neighborhoods that are very dark at night and increasing lights in those neighborhoods.
38	So far the Town concentrates on the two major arteries of Camino del Pueblo and Don Tomas while the interior neighborhoods get more and more trash filled and run down. Enforce general zoning rules and make owners clean up their properties.
39	We should preserve the opportunity for light industry and specialty agriculture (cannabis) to flourish and grow in Bernalillo. Residential development should be discouraged along major arteries like 313, 528 and 550. Multi-purpose development (i.e., retail at ground level, apartments above) should be encouraged. Adaptive re-use and low-income neighborhood redevelopment should be encouraged. Commercial and residential development should be separated by buffer open space or blended-use development.
40	Sheriffs Posse Road needs special attention.
41	No
42	Shared bicycle lanes that go up into Placitas would be wonderful. Lots of cyclists, but roads are not as safe as they could be.
43	I love little Bernalillo. I like the mix of chains and hometown owned businesses. I strongly advise you to foster the small businesses and offer them the exact same perks you offer big businesses (highway cut outs and turn ins - ease of zoning - tax advantages - utility advantages, etc. I don't want Bernalillo to look exactly like Colorado Springs, Amarillo, or any right-off-the-freeway town. Also please continue to fund a good police presence - and please continue to keep Bernalillo from becoming a homeless encampment. You guys have done so much cleaning up in the past 10 years, Bernalillo looks much nicer. I'm also proud of our Railrunner Stop - perhaps we could have signage and walking paths from the train to Bernatown businesses or tourist destinations.
44	We should keep our small town. Why make it another Rio Rancho
45	No
46	The Town needs to focus on adding more amenities to the South Side such as Restaurants, Gas Stations, Grocery/toiletry/retail store(s), etc. Also sidewalks for safety, and street lighting. The north side/all of US 550 have more than enough of everything. T&T Supermarket is OK for some things however the selection is extremely limited. People are sick of going to Albuquerque and Wal-Mart on 550/528 for what they need. Also the lack of sidewalks through Mountain View, down Gutierrez Road and through the Bosque makes walking or riding a bike dangerous and unsafe.
47	Whole foods, natural grocers or Sprouts needed in Bernalillo. Including, the infrastructure for boutique shops, retails, additional restaurants to support small local businesses.
48	We need more shopping and restaurants, tired of driving into ABQ or Santa Fe. I'd like more options within 5 miles.
49	Code enforcement should apply the law and do their job. Stop allowing people to collect trash, broken down vehicles. Allows homes to be lived in without utilities. Does not followup on issues.
50	A bypass around our town from I25 to 550 would do wonders for traffic and really improve the small town feel of our town
51	Clean up the town, clean the graffiti. Enforce code violations.
52	The town needs to expand town amenities on the west side of the river. Library, city hall, Senior Center are all on the east side.
53	It is important to study the traffic on Sheriff's Posse Rd. This road will soon be overwhelmed with traffic as additional lots are developed. This will destroy the rural character of the area and cause some to relacate.
54	I've been visiting Bernalillo since I was 8 years old. I love living here. Please expand slowly keeping the feel of the small town. High density housing will destroy the culture and small town

	feel of Bernalillo. Help low income families with their own homes or single level units. Please no high rise apartments.
55	thank you
56	Been here three months. Love it!
57	We would love to have more retail attractions and a boardwalk along the river would be great.
58	I've noticed a lot of dumping and litter around Walmart and Venada plaza. Also weed control on public sidewalks need to be maintained.
59	I love the rural residential feel and livability of the town
60	Need more mid-range restaurants. Less industrial look to the town, I feel safe living here. 550 will always be an issue, some work around would be nice.
61	We need more Latin stores, more variety in shoe and clothing stores,
62	Better parks water park better pool open the pool community center where kids can hang out skate park better access to education more local job opportunities landscape on main street devolpe shops in downtown bernalillo encourage businesses owners to landscape store frouts
63	I would like to see more areas landscaped make OUR TOWN more attractive, I've seen other towns with hanging flower Potts from the Main Street light posts, I live in the bosque and would like to have the sewage services out there.
64	Need to stay on top of road repairs.
65	Limit use of Sheriffs Posse road by non residents of the road.
66	There are a couple of deserted structures along Camino del Pueblo that should be destroyed. Real eye-sores.
67	Think in planning for decades not years
68	No
69	I would love to see an outdoor pickleball facilities built in the town of bernalillo. This would be highly beneficial to the town for economic reasons and tourism reasons. I believe the @ Rio commercial development would also be great for the town.
70	Don't kill town revenue sources like some small towns do (like fighting retail/restaurant chains, etc.).
71	Need a comprehensive transportation plan for the Sheriff's Posse Road Area.
72	No
73	Bernalillo is a wonderful town with a magnificent cultural heritage. People come here for that reason, please do not destroy it with ill conceived commercial and high density housing development.
74	Bernalillo is a wonderful town that faces growth challenges that other towns do not have to deal with, mostly because it is hemmed in by the pueblos and Rio Rancho/Enchanted Hills. Other towns can grown in different ways and different directions. Not so for Bernalillo. That makes it more important that Bernalillo leaders consider how the town grows. They simply can't make mistakes. There are no do-overs, no "that didn't work there, but we'll do better over here." For instance, below and around Walmart: That could be restaurants and shops and a daycare/nursery and a garden center, or it can be a bunch of chain stores and storage sheds and tin buildings and crap. If it is the latter, that is Bernalillo forever. Downtown, with support from the town, can attract artist co-ops, coffee shops, restaurants and businesses that create their own synergy, which will bring visitors and walkers and bike riders … and a holistic type of growth that makes a town vibrant.
75	1) There needs to be a study of the traffic usage for Sheriff Posse Road as new development continues. 2) Bernalillo has the potential to be a destination if the town could create development along the river that included restaurants and shops, with walking access
76	Too much nepotism and not enough diversity in town government
77	Please do not ruin Sheriff's Posse Road by widening or closing one end so that there's only

	one way out. It's a lovely road the way its landscaped. Sherrif's Rodeo Arena has deep drifts of fine dust that is extremely unpleasant when windy for people living nearby. Can that road along the arena and wall of Bosque del Rio Grande be paved or put down rock or gravel. It can be really terrible. Also, for third time. Please do something about trash in vacant fields around shopping centers. Very embarrassing.
78	I love living in Bernalillo. I moved here from Phoenix and I've never been happier. It would be perfect if Venada Plaza was closed between Spanish Bluffs Rd and the Goodwill, or made one way from Hwy 550 to Hwy 528. There is WAY to much cut thru traffic on our small road.
79	The town should focus on preservation of quality of life. There is very little green space in this part of New Mexico and we need to protect what little we have left in Bernalillo especially when it involves the bosque areas.
80	Listen to the residents of an area and not see $$$ signs when a developer has grand ideas about a crazy development in a beautiful area. Work on the areas of Bernalillo that are old and need improvement. (East of the river). That area is where the focus of the development needs to be. Respect the bosque area, clean it up and keep it residential. Again listen to the residents.
81	No development on the proposed property's on sheriffs posse road. The road access should be closed at Spanish bluffs road. Sheriffs posse road is entirely to small and over run with traffic not from Bernalillo residents.
82	There is no order in the town! Unmanaged Renters are a nuisance to the neighborhood. There are infestations of cats and other rodents. Huge Chinese elms have blocked the "Mountain View". Granite shops are allowed to expel dangerous dust into the neighborhood. All issues the town is aware of.
83	So sad to see our small town sell oit and turn into a pass through for Rio Rancho residents.
84	Focus on small town atmosphere instead of a through way for Rio Rancho
85	Yed we need a bigger pool. Teach our kids to swim. Rec center should have internet for kids to use. Our play grounds should be just as good or better then Rio Rancho why do we not have. M More activities for our kids.. Attract better jobs for our young adult
86	The town does very little to celebrate its history through visible signifiers, such as monuments, statuary, fountains, gardens, and architecture. Nothing about the Town's current physical appearance tells the Town's amazing story. Overdevelopment and the wrong kind of development have given the Town a slipshod, run-down look. Way too many unused buildings and weeds. Grotesque buildings, such as the giant tin barn of the Bosque Brewery are ugly and diminish or destroy the Town's sense of it's own history. The Town looks like any run-down town anywhere and lacks architectural distinction.
87	We watch the show HOME TOWN and feel that Bernalillo would benefit from changing the atmosphere of the downtown area, attracting new businesses, and making it easier to park and shop.
88	Spend money on replacing old water lines that constantly break!
89	Yes, sidewalks along 550 and Main street need to be swept. There is a lot of gravel and sand on sidewalks. Bicyclist and those who walk can be injured with the debris on the sidewalks. On-call public works employees need to be professional when dealing with customers. On June 20th I called to report a possible water line break and the on-call public works employee was very rude and unprofessional. Thank you.
90	Additional staff at the mvd office.
91	Keep town clean, nice landscaping along main street. Keep the culture and small town traditions. Water tank on I25 should have Spartan on it, we have no spirit or pride in BHS, most small towns have their high school on a hill or water tank near an interstate.
92	None
93	If possible to repave roads and add nice landscape trees or plants to most trafficked areas. Also please add a garment store to the nearby areas, its a hasle to go to Albuquerque for clothes.
94	Work on downtown revitalization. Bakery, small movie theater? Hardware store, more upscale grocery store

95	NO
96	I have been serving members of the community for five years in a mental health capacity and the people that live and work in Bernalillo are what truly make this Town an asset.
97	If traveling north on I-25 and you exit the first exit for Bernalillo, it is not a very good impression of the city. Clean up shoulders of road, fences along houses, add landscaping.
98	No
99	Clean the town up
100	I feel that the Town has taken a moderately conservative approach to development. I do appreciate that there is an effort to preserve the old traditions of Bernalillo, but we must not be too conservative, or we will get left by the wayside.
101	No
102	Clean up the town
103	The town ordinance needs to go around and have residents clean up their yards. Bernalillo is looking nasty and the graffiti around town is not presentable. If people have cars that don't work they should be removed. Bernalillo has gotten to laid back. Homeless and drugs have picked up. Also people are questioning how is the town helping the elders in our community. And how is the low income housing area being handle? You seen may people driving very nice and expensive vehicles but yet living in the low income housing area? When you have many low income elderly on fixed incomes on wait lists…
104	Keep Bernalillo small, don't let other cities within Sandoval county control Bernalillo.
105	What has happened to the proposed river walk? Our entire family was looking forward to that and other family members were considering moving here because of the Tien was being progressive and open to doing something that Albuquerque has not been open to. Let's do it!
106	love Bernalillo, love living here. traffic on Sheriffs possee rd should be studied before more commercial or residential expansion. totally against the 'river walk' commercial expansion.

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INTRODUCTION

This section includes a brief list and description of federal and state resources available to both local governments and people involved in community development, business development, historic preservation, brownfield redevelopment, and housing assistance. Each of these programs require applicants to meet certain qualifications in order to be eligible for funding.

COMMUNITY DEVELOPMENT

ArtPlace America, National Creative Placemaking Fund

ArtPlace America focuses on creative placemaking and works with foundations, federal agencies, and financial institutions in order to position arts and culture as a core sector of community planning and development. The National Creative Placemaking Fund is a competitive national program that invests money in communities across the country in which artists, arts organizations, and arts and culture activity help drive community development.

Contact: ArtPlace America
195 Montague Street, 14th Floor
Brooklyn, New York 11201
Phone: (347) 853-7817
Website: www.artplaceamerica.org

Cooperative Agreements Program (COOP) Local Government Road Fund

The COOP assists local governments and other public entities to improve, construct, maintain, repair, and pave highways and streets and public parking lots. Funds must be used for the construction, maintenance, repair, and the improvements of public highways, streets, and parking lots. The local match is 40% and awards range from $9,000 to $192,000. Funds are made available at the beginning of the fiscal year and must be encumbered and spent no later than the end of the fiscal year.

Contact: NMDOT, Maintenance Section
1120 Cerrillos Road
P.O. Box 1149
Santa Fe, NM 87504-1149
Phone: (505) 827-5498
Website: www.dot.state.nm.us

Land and Water Conservation Fund (LWCF)

The LWCF is a federal program administered by the National Park Service. The state side of the LWCF provides matching grants to states and local governments for the acquisition and development of public outdoor recreation areas and facilities. The New Mexico State Parks Division administers the state program. Hundreds of projects throughout New Mexico have been funded, from baseball and soccer fields to trails, playgrounds, and picnic areas. State agencies, municipalities, counties, schools, and tribes have developed and improved over 1,000 close to home outdoor recreation areas in response to the needs of its citizens and visitors by providing a permanent legacy of parks, facilities, and open space.

Contact: National Park Service
1849 C Street, NW, Org-2225
Washington, D.C. 20240
Website: www.nps.gov

Local Government Planning Fund (LGPF)

The LGPF provides up-front capital necessary to allow for proper planning of vital water and wastewater projects. The 2005 Legislature (HB 304, Sandoval) broadened project eligibility to include comprehensive or master plans, conservation plans, and economic development plans and to allow NMFA to "forgive" the loan if the entity finances the project through NMFA.

Contact: New Mexico Finance Authority
207 Shelby Street
Santa Fe, NM 87501
Phone: (505) 984-1454
Toll Free: (877) ASK-NMFA
Website: www.nmfa.net

Municipal Arterial Program (MAP) Local Government Road Fund

This program assists municipalities construct and reconstruct streets that are principal extensions of the rural highway system and other streets which qualify under New Mexico Department of Transportation (NMDOT) criteria. Municipalities are required to contribute 25% to the cost of the project. There is no set limit to the amount of awards, but the state share typically ranges from $50,000 to $1.1 million per project. Applications must be received by March

15th for funding to be considered by the fiscal year beginning July 1.

Contact: NMDOT, Engineer Maintenance Section
1120 Cerrillos Road
PO Box 1149
Santa Fe, NM 87504-1149
Phone: (505) 827-5498
Website: www.dot.state.nm.us

Public Project Revolving Fund (PPRF)

The PPRF offers many examples of the NM Finance Authority's investment of time, expertise, and capital. Created in 1994, the PPRF program assists a wide range of public credits in accessing the capital markets with advantage of offering to all borrowers (regardless of their credit worthiness) fixed 'AAA' - insured interest rates.

Contact: New Mexico Finance Authority
Address: 207 Shelby Street
Santa Fe, NM 87501
Phone: (505) 992-9639
Toll Free: (877) ASK-NMFA
Website: www.nmfa.net

Small Cities Community Development Block Grant Program (CDBG)

This program is administered by the State of New Mexico through the Local Government Division of the Department of Finance and Administration for communities with populations under 50,000. Funds can be applied towards planning projects, economic development activities, emergency activities, construction or improvement of public buildings, and rehabilitation or repair of housing units. CDBG funds can be used for towns engaged in downtown revitalization including redevelopment of streets and fund facade improvement programs. There is a $500,000 grant limit per applicant ($50,000 maximum for planning efforts) and a 5% cash match by the applicant is required.

Contact: NM Local Government Division
131 S. Capitol
Bataan Memorial Bldg., Suite 201
Santa Fe, NM 87503
Phone: (505) 827-8053
Website: www.nmdfa.state.nm.us

USDA Rural Development Programs

The USDA provides assistance to rural communities, including loan and grant programs that address small businesses and rural businesses, rural housing, rural community facilities, and rural utilities. The USDA provides loan programs such as the B&I Loan and also grant programs. USDA Rural Development grants can be made directly to small businesses that are accomplishing innovative economic development work or energy efficiency installations, but must flow through a non-profit or local government intermediary. The Albuquerque Field Office covers Sandoval County. Assistance may be available through the following programs:

- Business and Industry Loan Guarantees
- Single Family Housing Direct Home Loans
- Single Family Housing Guaranteed Loan Program
- Community Facilities Direct Loan and Grant Program
- Single Family Housing Repair Loans and Grants
- Water and Waste Disposal Loan and Grant Program

Contact: USDA Rural Development -
Albuquerque Field Office
100 Sun Avenue NE, Suite 130
Albuquerque, NM 87109
Phone: (505) 761-4950
Fax: (855) 543-9497
Website: www.rd.usda.gov/nm

Transportation Alternatives Program (TAP)

The TAP is a federal aid funding program authorized through the FAST Act as part of the new Surface Transportation Block Grant (STBG) Program. TAP funds can generally be used for bicycle and pedestrian infrastructure and activities. Each state's DOT administers the program using its own competitive process, in accordance with the law. Approximately every two years, the NMDOT coordinates with the state's seven RTPOs and five MPOs on soliciting TAP applications.

Contact: NMDOT District 5 Office
7315 Cerillos Road
Santa Fe, New Mexico 87502
Phone: (505) 795-0533
Website: www.dot.state.nm.us

OUTDOOR RECREATION

New Mexico Outdoor Recreation (NMOR)

The NMOR is a division of the New Mexico Economic Development Department. It was created to grow and champion outdoor recreation in New Mexico as a powerful economic engine to expand wealth and job opportunities. The NMOR administers three funding programs:

Outdoor Equity Fund - This fund aims to support transformative outdoor experiences for New Mexico youth that foster stewardship and respect for New Mexico lands, waters, and cultural heritage. Applicants must be from an area that serves a population where at least 40% of youth are low income. Awards range from $1,500 to $15,000.

Outdoor Recreation Incubators - This grant program is geared to business incubators that assist early stage outdoor recreation companies. These awards are $50,000 and eligible programs can include those that support startups in service, retail, and manufacturing.

Special Projects and Infrastructure Fund - This grant program supports projects that enhance trails, river parks, wildlife viewing areas, and other infrastructure projects that enhance outdoor recreation primarily in rural, tribal, and traditional land-grant communities. Awards are between $5,000 and $25,000 for projects that are shovel ready and can be completed within 24 months of the award.

Contact: New Mexico Economic Development
Outdoor Recreation Division
1100 South St. Francis Drive
Santa Fe, NM 87505
Phone: (505) 827-0300
Website: www.nmoutside.com

ARTS and CULTURE

National Endowment for the Arts (NEA)

The NEA provides funding for feasibility studies related to the renovation, restoration, or adaptive reuse of facilities or spaces for cultural activities, architectural studies, cultural tourism projects, or the revitalization or improvement of cultural districts. Funding is not available for renovation or construction costs.

The NEA also administers Our Town Grants, which support creative placemaking projects that help transform communities into lively, beautiful, and resilient places with the arts at their core. Our Town offers support for projects in two areas: 1) arts engagement, cultural planning, and design projects. Matching grants range from $25,000 to $200,000; and 2) projects that build knowledge about creative placemaking. These are projects available to arts and design service organizations and other organizations that provide technical assistance to those doing place-based work. Matching grants range from $25,000 to $100,000.

Contact: National Endowment for the Arts
400 7th Street, SW
Washington, DC 20506-0001
Phone: 202-682-5400
Website: www.nea.gov

New Mexico Arts

New Mexico Arts is a division of the Department of Cultural Affairs. Its primary function is to provide financial support and technical assistance or arts services and programs to non-profit organizations statewide and to administer the 1% public art program for the State of New Mexico. The organization enters into arts services contracts with eligible organizations that perform specified arts services within a particular time period. All funding must provide a 50% match by the applicant organization, at least half of which must be in cash. New Mexico Arts is a partner of the New Mexico Arts and Cultural Districts program.

Contact: New Mexico Arts
Bataan Memorial Building
407 Galisteo Suite 270
Santa Fe, New Mexico
Phone: (505) 827-6490
Website: www.nmarts.org

BUSINESS DEVELOPMENT

ACCION New Mexico

ACCION New Mexico makes loans to small businesses that may not qualify for bank loans, and also provides business support services.

Contact: ACCION New Mexico
20 First Plaza NW, Suite 417
Albuquerque, NM 87102
Phone: (505) 243-8844
Website: www.accionnm.org

New Mexico Department of Agriculture (NMDA)

The NMDA administers the Agricultural Development and Promotion Funds Program (ADPFP), which was created to promote agricultural growth and rural stability, maintain and increase markets for new products, and develop value-added products. The ADPFP may be used to promote and market specialty crops and livestock.

Contact: New Mexico Dept. of Agriculture
Marketing and Development
MSC 5600
Las Cruces, NM 88003-8005
Phone: (575) 646-4929
Website: www.nmda.nmsu.edu

High Wage Jobs Tax Credit

A taxpayer who is an eligible employer may apply for and receive a tax credit for each new high-wage economic-base job. The credit amount equals 8.5% of the wages and benefits paid for each new economic-base job created. Qualified employers can take the credit for four years. The credit may only be claimed for up to one year after the end of the four qualifying periods. The credit can be applied to the state portion of the gross receipts tax, compensating tax, and withholding tax. Any excess credit will be refunded to the taxpayer.

Contact: NM Taxation and Revenue Dept.
1100 South St. Francis Drive
Santa Fe, NM 87504
Phone: (505) 827-0700
Website: www.gonm.biz

Job Training Incentive Program (JTIP)

The JTIP is one of the most valuable incentives offered to new employers in New Mexico and can be used effectively in recruitment packages. This program reimburses 50 to 70% of employee wages and required travel expenses during an extended training period for new hires to new and expanding companies in New Mexico. The JTIP must be applied for and approved prior to reimbursable wages being paid.

Contact: Joseph M. Montoya Building
1100 S. St. Francis Drive
Santa Fe, NM 87505-4147
Phone: (505) 827-0249
Website: www.gonm.biz

New Mexico Clean Energy Incentives

The State of New Mexico offers programs and several tax incentives for clean energy development through the Energy Conservation and Management Division.

Clean Energy Performance Financing - The Energy Savings Performance Contracting (ESPC) is a process that facilitates facility improvements without the need for up front capital funding from the agency.

New Mexico State Tax Incentives for Renewable Energy - Tax incentives are available for the development of sustainable and renewable energy projects including sustainable buildings, agricultural biomass, geothermal heat pumps, biodiesel facilities, renewable energy production, and solar markets. New Mexico also provides a gross receipts tax exemption for wind and solar systems.

Contact: NM Energy, Minerals, and Natural Resources Dept.
Energy Conservation and Management Division
1220 South St. Francis Drive
Santa Fe, NM 87505
Phone: (505) 476-3200
Website: www.emnrd.state.nm.us

CNM Small Business Development Center

The CNM Small Business Development Center (SBDC) is located in Albuquerque at CNM's Workforce Training Center approximately 9 miles south of Bernalillo. The SBDC provides assistance to both new and existing businesses through workshops, counseling, and procurement resources.

Contact: 5600 Eagle Rock Avenue NE
Albuquerque, NM
Phone: (505) 224-5250
Website: www.cnm.edu

SBA 7A Loan Program

SBA 7A Loan Program is the standard SBA loan guarantee program. Up to 80% of a bank loan to a private business can be guaranteed. Banks still accomplish normal due diligence, but may be willing to accept slightly more risk. This program increases the aggregate amount of funds available to small business in the banking system. It can also serve to extend term.

Contact: U.S. Small Business Administration, NM
625 Silver Avenue SW, Suite 320
Albuquerque, NM 87102
Phone: (505) 248-8225
Website: www.sba.gov

New Mexico Manufacturing Extension Partnership

The New Mexico Manufacturing Extension Partnership provides efficiency training, training in lean manufacturing, and ISO 9000 certification (now temporarily suspended) to the state's small and medium-sized businesses. Aztec is served by the Northwest Region located in Farmington.

Contact: New Mexico Manufacturing Extension Partnership, Farmington
5051 College Boulevard, #5047
Farmington, NM 87402
Phone: (505) 860-9961
Website: www.newmexicomep.org

New Mexico Partnership

The New Mexico Partnership is a private, non-profit organization that offers assistance to businesses looking to expand or relocate to New Mexico. It can assist businesses on a variety of business initiatives including:

- Initiate real estate searches;
- Coordinate site-selection trips;
- Personalize briefings and orientations;
- Assist in evaluating and applying for incentives;
- Facilitate the permitting process;
- Organize strategic meetings with key government and community officials;
- Collaborate on media and public relations; and
- Provide data on key business factors.

The New Mexico Partnership can also assist with agri-business tax credits.

Contact: New Mexico Partnership
1720 Louisiana Blvd NE, Suite 312
Albuquerque, NM 87110
Phone: (505) 247-8500
Website: www.nmpartnership.com

SMART Money Loan Participation Program

This program is administered by the New Mexico Finance Authority (NMFA) and intended to leverage funds provided by local New Mexico banks for businesses that create quality jobs. The program provides bank participation loans, direct loans, and loan and bond guarantees on behalf of private for-profit and non-profit entities. The program is designed to create greater access to capital for businesses throughout New Mexico, lower the cost for the borrower, and share the risk with the bank creating a benefit to both the bank and borrower. Business loans must result in job creation and economic benefit and carry a minimum of risk.

Contact: New Mexico Finance Authority
207 Shelby Street
Santa Fe, NM 87501
Phone: (505) 992-9638
Website: www.nmfa.net

The Loan Fund

The Loan Fund provides loans, training, and business consulting to small businesses that do not qualify for a bank loan, but still have a viable need for a loan and the ability to pay it back. This program started out as a micro-lending organization, but can now make loans up to $200,000 in exceptional circumstances. Loans carry a higher than market rate to compensate for risk.

SBA 504 Loan Program - SBA 504 Loan Program is a cooperative loan program between the SBA, a bank, and a certified development corporation. An SBA 504 loan is a participation loan in which the SBA loans money directly to a business in participation with a bank. This loan can only be used for fixed asset financing. The primary benefit to borrowers is that it allows for minimal equity (10%) and it can also serve to extend the term.

SBA Microloan Program - Loans to small businesses up to $50,000. Loans can be used for working capital, inventory or supplies, furniture or

fixtures, machinery or equipment. Loans less than $10,000 carry interest rates of 8.7%. Loans above $10,000 carry interest rates of 7.875%. All loans can have up to 6 years for repayment.

Contact: The Loan Fund
423 Iron Avenue SW
Albuquerque, NM 87102-3821
(505) 243-3196
Website: www.loanfund.org

WESST

WESST is a non-profit, economic development organization that provides business skills training, product marketing, development opportunities, and small loans to viable start-up or growing New Mexico businesses owned by women and minorities. The WESST office for Bernalillo is co-located with the Rio Rancho Chamber of Commerce. WESST provides training to create and grow self-sufficient, successful small businesses in Sandoval County. WESST is also a participant in the Small Business Administration (SBA) Microloan Program.

Contact: WESST - Rio Rancho
4001 Southern Boulevard SE, Suite B
Rio Rancho, NM 87124
Phone: (505) 892-1238
Website: www.wesst.org

HISTORIC PRESERVATION

Federal Historic Preservation Tax Incentives Program

This program is administered by the National Park Service (NPS), in partnership with the IRS and State Historic Preservation Offices. The NPS must certify all rehabilitation projects of certified historic structures seeking the 20% tax credit. In order for a rehabilitation project to become certified, the NPS must find that the rehabilitation is consistent with the historic character of the property, and where applicable, with the district in which it is located. Abandoned or under-used schools, warehouses, factories, churches, retail stores, apartments, hotels, houses, and offices in many cities have been restored to life in a manner that retains their historic character. The program has also helped to create moderate and low-income housing in historic buildings.

Contact: National Park Service Technical Preservation Services
1201 "Eye" Street NW, 6th Floor
Washington, DC 20005
Phone: (202) 513-7270
Website: www.nps.gov

National Trust for Historic Preservation

The National Trust for Historic Preservation is a nonprofit organization that provides leadership, education, advocacy, and resources to save America's diverse historic places and revitalize our communities. The National Trust Preservation Fund offers several types of financial assistance to nonprofit organizations, public agencies, for-profit companies, and individuals involved in preservation-related projects.

Contact: National Trust for Historic Preservation
1785 Massachusetts Avenue NW
Washington, DC 20036-2117
Phone: (202) 588-6000 or (800) 944-6847
Website: www.preservationnation.org

State Tax Credit for Registered Cultural Properties

This program is available to owners of historic structures who accomplish qualified rehabilitation on a structure or stabilization or protection of an archaeological site. The property must be individually listed in, or contributing to a historic district listed in the State Register of Cultural Properties. The credit is applied against New Mexico income taxes owed in the year the project is completed and the balance may be carried forward for up to four additional years. Maximum in eligible expenses is $50,000 for a tax credit of $25,000, unless the project is within a state-approved and certified Arts and Cultural District, in which case the maximum is $50,000. There is no minimum project expense. This program has provided accessible and useful for small projects, including facade improvements.

Contact: Department of Cultural Affairs
New Mexico Historic Preservation Division
Bataan Memorial Building
407 Galisteo Street, Suite 236
Santa Fe, NM 87501
Phone: (505) 827-6320
Website: www.nmhistoricpreservation.org

U.S. Department of Transportation (DOT)

The Transportation Enhancement (TE) activities offer funding opportunities to help expand transportation choices and enhance the transportation experience

through 12 eligible activities related to surface transportation, including pedestrian and bicycle infrastructure and safety programs, scenic and historic highway programs, landscaping and scenic beautification, historic preservation, and environmental mitigation.

Contact: USDOT Federal Highway Administration
New Mexico Division
4001 Office Court Drive, Suite 801
Santa Fe, NM 87507
Phone: (505) 820-2021
Website: www.fhwa.dot.gov

BROWNFIELDS

Environmental Protection Agency (EPA) Brownfields Program

The Brownfields Program provides direct funding for brownfield assessment, cleanup, revolving loans, and environmental job training. To facilitate the leveraging of public resources, the Brownfields Program collaborates with other EPA programs, other federal partners, and state agencies to identify and make available resources that can be used for brownfield activities. The EPA also provides technical information on brownfield financing matters.

EPA Brownfield Assessment Grants - Assessment grants provide funding to inventory, characterize, assess, and conduct planning and community involvement related to brownfield sites. An eligible entity may apply for up to $200,000 to assess a site contaminated by hazardous substances, pollutants, or contaminants (including hazardous substances co-mingled with petroleum) and up to $200,000 to address a site contaminated by petroleum. Applicants may seek a waiver of the $200,000 limit and request up to $350,000 for a site contaminated by hazardous substances, pollutants, or contaminants and up to $350,000 to assess a petroleum contaminated site. Waivers must be based on the anticipated level of hazardous substances, pollutants, or contaminants (including hazardous substances co-mingled with petroleum) at a single site. A coalition of three or more eligible applicants can submit one grant proposal under the name of one of the coalition members for up to $1.0 million. The performance period for these grants is three years.

EPA Brownfield Cleanup Grants - Eligible entities may apply for up to $200,000 per site. Due to budget limitations, no entity can apply for funding cleanup activities at more than three sites. These funds may be used to address sites contaminated by petroleum and hazardous substances, pollutants, or contaminants (including hazardous substances co-mingled with petroleum). Cleanup grants require a 20% cost share, which may be in the form of a contribution of money, labor, material, or services, and must be for eligible and allowable costs. The match must equal 20% of the amount of funding provided by EPA and cannot include administrative costs. Applicants may request a waiver of the 20% cost share requirement based on hardship. Applicants must own the subject site at the time of application. The performance period for these grants is three years.

Contact: Environmental Protection Agency
Fountain Place 12th Floor, Suite 1200
1445 Ross Avenue
Dallas, TX 75202-2733
Phone: (214) 665-2200
Website: www.epa.gov

HOUSING ASSISTANCE

New Mexico Mortgage Finance Authority (MFA)

The MFA provides financing for housing and other related services to low- to moderate-income New Mexicans. There are 37 state and federal programs administered by the MFA that provide financing for housing, including low interest mortgage loans and down payment assistance, weatherization, green building and rehabilitation, and tax credit programs. The MFA partners with lenders, realtors, non-profit, local governments, and developers. All state and federal housing programs are administered by the MFA, including Section 8 housing funds and other HUD projects. Some of the primary rental and homeownership programs administered by MFA include:

HOME Investment Partnerships Program - Assistance is provided to income qualified homeowners who lack the resources to make necessary repairs to their homes. Assistance can be used for reimbursement of costs for rehabilitation, including applicable codes, standards or ordinances, rehabilitation standards, essential improvements,

energy-related improvements, lead-based paint hazard reduction, accessibility for disabled persons, repair or replacement of major housing systems, incipient repairs and general property improvements of a non-luxury nature, site improvements and utility connections. Non-profits, housing authorities, and local governments administer the HOME program. Funds are awarded through a RFP application process. The MFA has also reserved funds for the Reservation Rehabilitation program to provide loans to homeowners on a house-by-house, first-come, first-served basis.

New Mexico Housing Trust Fund - Provides flexible funding for affordable housing initiatives for persons or households of low or moderate income served by nonprofit and for-profit organizations, governmental housing agencies and entities, regional housing authorities, tribal governments and housing agencies, etc. Interest rates are approximately 1 to 5% per annum. Construction is up to three years (current maximum is $1,500,000). Long term amortizing up to 30 years (current maximum is $500,000). Income requirements for rental households are those earning 60% or less AMI, and for single family households, at or less than 80% AMI.

New Mexico Affordable Housing Tax Credit - This program encourages private investment in affordable housing by providing donors to qualified housing developments with a credit on their state taxes. The donation must be made to an affordable housing development that has been approved by the MFA. Donors receive investment vouchers for up to 50% of the value of the donation, which they can use towards a tax deduction on their state taxes. Eligible projects include the development of single family homes and multifamily rental housing.

Low Income Housing Tax Credits (LIHTC) - The LIHTC provides federal income tax credits to individuals or organizations that develop affordable housing through either new construction or acquisition and rehabilitation. The tax credits provide a dollar for dollar reduction in the developer's tax liability for a 10 year period. Tax credits can also be used by nonprofit or public developers to attract investment to an affordable housing project by syndicating, or selling, the tax credit to investors. In order to receive tax credits, a developer must set-aside a number of units for households below 60% AMI and the units must remain affordable for a minimum of 30 years. In addition to tax credits, the financing "gap" for certain LIHTC projects may be filled with a below market rate HOME loan. Tax credits and rental HOME loans are awarded annually through a competitive application process according to the state's Qualified Allocation Plan.

Contact: NM Mortgage Finance Authority
344 Fourth Street SW
Albuquerque, NM 87102
Phone: (505) 843-6880
Website: www.housing.org

HOPE VI Main Avenue Program

This program provides grants to communities with a population under 50,000 for development of affordable housing undertaken in connection with a MainStreet revitalization effort. Obsolete commercial offices or buildings can be reconfigured into rent-producing affordable housing. The grants cannot be used on general infrastructure or commercial development.

Contact: US Dept. of Housing and Urban Development
451 7th Street S.W.
Washington, DC 20410
Phone: (202) 708-1112
Website: www.hud.gov

ATTACHMENT 5

PROPOSED HIGH DENSITY RESIDENTIAL DEVELOPMENT LOT 5B

PARCEL 1
0.54 AC
SHERIFF'S POSSE ROAD
LOT 5-B 7.33 AC/168 PROP. UNITS
62.42
62.20
CALLE DEL CIELO
60.35
59.64
59.96
59.60
S44°50'46"E