Albuquerque Bernalillo County
Water Utility Authority

PO Box 568
Albuquerque, NM 87103-0568
505-289-3000
www.abcwua.org

Chair
Trudy E. Jones
City of Albuquerque
Councilor, District 8

Vice Chair
Debbie O'Malley
County of Bernalillo
Commissioner, District 1

Pat Davis
City of Albuquerque
Councilor, District 6

Timothy M. Keller
City of Albuquerque
Mayor

Klarissa J. Peña
City of Albuquerque
Councilor, District 3

Steven Michael Quezada
County of Bernalillo
Commissioner, District 2

Lonnie Talbert
County of Bernalillo
Commissioner, District 4

Ex-Officio Member
Pablo R. Rael
Village of Los Ranchos
Board Trustee

Executive Director
Mark S. Sanchez

Website
www.abcwua.org

October 1, 2018

James R. Topmiller, P.E.
Vice President
Bohannan Huston, Inc.
Courtyard I
7500 Jefferson St. NE
Albuquerque, NM 87109-4335

RE: Water and Sanitary Sewer Serviceability Letter #180108
Santolina Level A and Level B.1
Lands lying just south of I-40, from approximately Shelley Rd. to 118th St. Level A - Encompassing projected sections 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 14, 15, 16 & 17, T9N, R1E and sections 6, 7, 8, 16, 17 & 18, T9N, R2E and sections 32, 33, 34, 35 & 36, T10N, R1E and sections 30 & 31, T9N, R2E, N.M.P.M., Town of Atrisco Grant, Albuquerque, Bernalillo County, New Mexico and containing an approximately 13,700 acres.

Dear Mr. Topmiller:

Project Description: The subject site is generally bounded by Interstate 40 to the north, 118th St. and the escarpment open space to the east, the Pajarito Mesa on the south, and the escarpment area adjacent to the Rio Puerco Valley on the west. The site is within the unincorporated area of Bernalillo County. Level A consists of approximately 13,851 acres and Level B consists of approximately 4,243 acres. The land use is per the Level A and Level B.1 Plans approved by the Bernalillo County Commission. The Level A Master Plan Area spans across Pressure Zones 1WR through 8W of the Atrisco Trunk. The full buildout of Level B spans across pressure zones 5WR to 8W of the Atrisco Trunk. Santolina is envisioned as a master planned community developed over a 40-50 year timeframe, with a mixture of land uses, a variety of housing and employment opportunities and places for civic life.

Development Agreement: Pursuant to the System Expansion Ordinance, this property is outside of the Water Authority service area and the Water Authority Board must approve a Development Agreement to serve this property and establish requirements as a condition of service. Contact Utility Development in regards to Development Agreements.

The development agreement shall be consistent with Water Authority policies and City and County land use policies. The majority of developable land in the Santolina master plan area is in the "Reserve Area" of the Albuquerque Bernalillo County Comprehensive Plan. Pursuant to Policy 5.5.2, WALH will need to prepare environmental, fiscal and economic analyses that demonstrate development feasibility and plan phasing. In addition, cost of service studies will need to be completed for water supply and infrastructure service requirements. Compliance with this policy will assist the Water Authority in determining adequate rates and charges consistent with the utility's no net expense policy.

EXHIBIT
C

Pursuant to Policy 12.1.2, WALH must follow the east-to-west water zone method of water service delivery on the West Side. An exception to the east-to west water zone method of water service delivery is allowed only in areas designated specifically for employment growth. This policy is consistent with Water 2120 Policies D and L:

> Policy D-4. The Water Authority shall work with the City and County to foster the efficient management and use of water in development and infrastructure.
>
> Policy L. The Water Authority shall coordinate and cooperate with the City, County and all other entities with planning authority to integrate water management policies with land use decisions.
>
> Policy L-1. The Water Authority should work with the City and County to update the Albuquerque/Bernalillo County Comprehensive Plan and/or other plans to ensure that system expansion is concurrent with infrastructure service levels and that the extension of facilities and services be phased in an efficient and orderly manner.

Pursuant to Policy 13.2.1, WALH must coordinate with the Water Authority to plan and maintain an adequate water supply to meet all needs that ensure the overall resilience and sustainability of our community. This Policy is consistent with Water 2120 Policy G Rationale:

> A more diversified water supply portfolio that includes more renewable sources is essential to provide a resilient and sustainable water supply that can meet customer demands in perpetuity.

Water Supply Charge: All developments located outside of the Water Authority's Adopted Service Area will be assessed a Water Supply Charge (WSC) as provided in the Water Authority's Water and Sewer Rate Ordinance for the development of new water resources, rights and supplies necessary to serve the development. The WSC shall not be used for reimbursement of master planned facilities.

Existing Conditions: The water, reuse and wastewater infrastructure that exist and required are provided in Attachment 1.

Water Service: New metered water service to the property can be provided contingent upon a developer funded project as described in detail in Attachment 1. Service is also contingent upon compliance with the Fire Marshal's instantaneous fire flow requirements. Water service will not be sold without adequate fire protection. Water service will only be sold in conjunction with sanitary sewer service.

Non-Potable Water Service: New metered non-potable water service to the property can be provided contingent upon a developer funded non-potable water reclamation plants, reuse pump stations, reservoirs and pipelines as described in Attachment 1.

Sanitary Sewer Service: Sanitary sewer service can be provided contingent upon a developer funded construction of an interceptor and other sewer facilities as outlined in Attachment 1.

Fire Protection: All new required hydrants as well as their exact locations must be determined through the Bernalillo County Fire Marshal's Office and verified through the Utility Development Office prior to sale of service.

Cross Connection Prevention: Any residential premises having existing private wells and who desire to connect to the public water system shall have two options as follows:

1) Customers shall permanently abandon the use of private wells by plugging the wells as accepted by the Water Authority prior to connecting to the public water system; or 2) Customers who choose to maintain their private wells shall completely sever the private well from the premises' potable plumbing system and shall install a reduced pressure principle backflow prevention assembly approved by the Water Authority at the terminal end of the water service from the public water system (e.g., service connection).

Per the Cross Connection Ordinance, all new non-residential premises must have a reduced pressure principle backflow prevention assembly approved by the Water Authority and installed at each domestic service connection at a location accessible to the Water Authority. All new fire line services to fire protection systems shall be equipped with a reduced pressure principle backflow prevention assembly approved by the Water Authority and Fire Marshal having jurisdiction at each service connection. A double check valve assembly approved by the Water Authority and Fire Marshal having jurisdiction may be installed instead of a reduced pressure backflow prevention assembly provided the fire protection system contains ANSI/NSF Standard 60 or 61 water piping throughout the entire fire protection system, the fire sprinkler drain discharges into atmosphere, and there are no reservoirs, fire department connections, connections from auxiliary water supplies, antifreeze nor other additives. The Water Authority requests that all backflow (containment) devices be located above ground just outside the easement or roadway right-of-way. Contact Cross Connection at 289-3439 for more information.

Pretreatment: If the development is for industrial use, and if either of the following apply, then contact the Industrial Pretreatment Engineer at (505) 289-3439 or pretreatment@abcwua.org:

1) The industry falls under one or more EPA categories found in Title 40 Code of Federal Regulations Parts 400-699, or
2) The industry plans to discharge more than 25,000 gallons of wastewater per day.

Easements: Exclusive public water and sanitary sewer easements are required for all public lines that are to be constructed outside of any dedicated rights-of-way. A minimum width easement of 20 feet is required for a single utility and 25 feet for water and sewer both within the same easement. Easements for standard sized water meters need to be five feet by five feet and include the length of the water service if located on private property. For larger meters that require a meter vault, a 35 feet by 35 feet easement is required. Actual easement widths may vary depending on the depth of the lines to be installed. Side yard easements are not acceptable for either water or sanitary sewer. Acceptable easements must be documented prior to approval of service.

Pro Rata: As described in this statement, the extension of public water and sanitary sewer lines may be eligible for partial reimbursement through the Pro Rata process as detailed in the Water Authority Water and Wastewater System Expansion Ordinance. Pro Rata is not owned and the property can utilize the services available upon completion of the requirements of this statement to connect to water and sanitary sewer.

Design and Construction of all required improvements will be at the developer / property owner's expense. Improvements must be coordinated through the Bernalillo

County Department of Public Works and Water Authority Work Order. Designs must be by a licensed, New Mexico registered professional engineer. Construction must be by a licensed, bonded, public utility contractor.

Costs and Fees: In addition to installation and construction costs, any new metered water services will be subject to both water and sanitary sewer Utility Expansion Charges (UEC) payable at the time of service application. All charges and rates collected will be based on the ordinances and policies in effect at the time service is actually requested and authorized.

UECs associated with multi-family are determined by the criteria set forth in the Water Authority Rate Ordinance, which is amended from time to time. These specific UECs take into account the number of units within the multi-family development. If the multi-family development includes other amenities such as a clubhouse, fitness center or leasing office that will be metered separately, UECs for these amenities will not be charged as they are included in the multi-family UEC calculation. UECs associated with irrigation meters are not included in the multi-family calculation and shall be paid accordingly. Mixed use development which consists of both commercial multi-family shall provide separate meters for each use. There is a section in the Rate Ordinance for low income housing developments that may provide a discount on UECs which will require documentation as required by the Water Authority, stating that the development does indeed qualify as a low income development. Furthermore, if the development includes both low income and market rate apartments, the same requirements set forth in the Rate Ordinance shall be adhered to.

Water Use: When metered water service becomes available to this site, the Water Authority is ready, willing, and able to provide the maximum annual requirement for the subject subdivision/project for a period of at least 70 years as required by the Bernalillo County Subdivision Ordinance. However, the Water Authority is also committed to meeting water conservation goals and requirements. Accordingly, all new development utilizing Water Authority services are subject to the requirements for water usage and water conservation requirements as defined by the Water Authority. Where available, outdoor water usage shall utilize reclaimed water.

All new residential development outside of the Water Authority water service should be designed to meet the standard water usage of 180 gallons per day per household which is equivalent to 75 gallons per capita per day.

All new commercial developments shall be subject to the requirements for water usage and water conservation requirements as defined by the Water Authority, particularly the Water Waste Ordinance.

Closure: This serviceability letter does not provide a commitment from the Water Authority to provide services to the development. It only provides details of infrastructure that is available and potential precursors for the proposed development. For service to be provided, a Board approved development agreement must be supplemented by this serviceability letter. The serviceability letter will remain in effect for a period of one year from the date of issue and applies only to the development identified herein. Its validity is, in part, contingent upon the continuing accuracy of the information supplied by the developer. Changes in the proposed development may require reevaluation of availability and should be brought to the attention of the Utility

Development Section of the Water Authority as soon as possible. Changes in the proposed development may require reevaluation and should be brought to the attention of the Water Authority as soon as possible.

Please feel free to contact Mr. Kristopher Cadena in our Utility Development Section at (505) 289-3301 or email at kcadena@abcwua.org if you have questions regarding the information presented herein or need additional information.

Sincerely,

Mark S. Sanchez
Executive Director

Enclosures: Attachment 1
f/ Serviceability Letter 180108

Attachment 1
Santolina Water and Sewer Serviceability Letter
October 1, 2018

A Water and Sanitary Sewer Serviceability Request was submitted to the Albuquerque Bernalillo County Water Utility Authority (Water Authority) on January 11, 2018 from Bohannan Huston, Inc. (BHI) on behalf of Western Area Land Holdings LLC ("WALH") for the property described as the Level A Master Plan and Level B.1 Master Plan as shown on Figure 1 below. Supplemental information regarding updated water demands was provided by BHI on February 8, 2018.

The Water Authority has a policy of no net expense to existing customers. This policy coupled with current infrastructure limitations results in the need for new infrastructure to support the Santolina development. Initially, as Santolina grows, this infrastructure will offset existing potable demands to free up both water and wastewater system capacity. Ultimately, new, independent systems will be required to supply full build out. Consistent with the provisions of Water 2120, infrastructure will include a major component of non-potable reuse, with redundant back-up supplies.

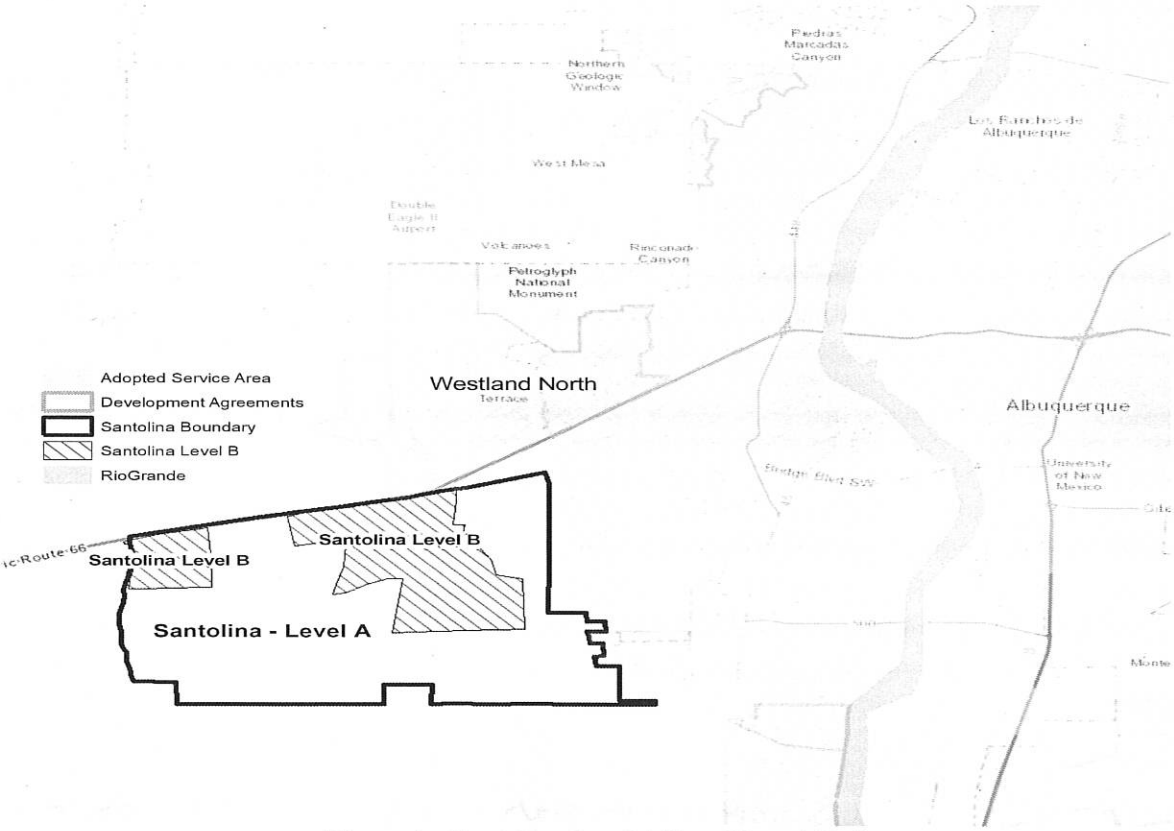

Figure 1 - Santolina Level 'A' and Level 'B.1'

As requested, the development of the Project would begin with the Bernalillo County approved Santolina Level B.1 Master Plan property owned by WAHL and described in the following:

Santolina Level B.1 Master Plan

The Santolina Level B.1 plan area is generally bounded by Interstate 40 to the north, 118th Street and the escarpment open space to the east, Dennis Chavez Blvd. on the south, and the escarpment area adjacent to the Rio Puerco Valley on the west, encompassing projected sections 1, 2, 3, 4, 5, 6, 11, and 12 and sections 6 and 7, T10N, R1E sections 25, 26, 31, 32, 33, 34, 35, and 36, T9N, R2E section 31, T9N, R2E and T10N, R2E section 31, Town of Atrisco Grant, Albuquerque, Bernalillo County, New Mexico, approximately 4,243 acres.

Requested Water Demand

The request for water and sewer service to the Santolina development was submitted by BHI on January 11, 2018 with additional supplemental information provided on February 8, 2018. Key elements in the development of infrastructure requirements are the quantity and timing of demands and determining the impact on existing water and wastewater infrastructure. Projected wastewater flows were not provided in the water and sewer service requests, but have been provided in previously submitted Master Plan documents for Level A.

Level A

The following average-day demands in acre-feet per year (AFY) were requested for the Level A Master Plan as follows:

- Year 2025: 2,300 AFY
- Year 2040: 3,200 AFY
- Year 2065: 11,700 AFY

Years 2018 through 2040 assumed 135 gallons per capita per day (GPCD) while year 2065 assumed 110 GPCD. The full buildout population was provided at 94,804.

Level B.1

The average-day water demands and population projections that were provided in the supplemental information dated February 8, 2018 request were as follows:

- 2,300 AFY by 2025 for a population of 15,160 assuming 135 GPCD
- 3,200 AFY by 2040 for a population of 21,619 assuming 135 GPCD
- 1,870 AFY by 2025 for a population of 15,160 assuming 110 GPCD
- 2,670 AFY by 2040 for a population of 21,619 assuming 110 GPCD

Proposed Water Demands

Based on the policies in the Water Authority adopted water resources management plan entitled Water 2120, the use of renewable non-potable supplies for irrigation and with additional treatment as a drinking water source is key in meeting future demands. A summary of the Water Authority's calculation of water demands and wastewater flows including peaking factors as well as the split between potable and non-potable use is provided herein. These calculations are based on information on approved land use, current usage rates by land use type and the adopted goals in Water 2120.

Water Demand (Potable and Non-Potable)

Based on the proposed land use and the Water Authority's adopted water conservation goal of 110 GPCD, an average-day water demand of 10.5 MGD (11,700 AFY) for Level A was calculated as the basis for full build out. **Table 1** summarizes the proposed water demands for both Level A and Level B.1 of the Santolina development.

Factors and assumptions regarding the values in **Table 1** are listed as follows:

- Total average day water demands assumes 110 GPCD
- The peak day demand was divided into non-potable and potable demand based on the Draft Technical Memorandum "Southwest Water Reuse" (INTERA, 2018), which calculated the reuse demand for the Santolina Level A and Level B.1 areas.
- A peaking factor of 1.6 was used for potable demands, and a peaking factor of 2.7 was used for non-potable demands

Sewer Flows

The ultimate sewer flows were estimated using the projected population for Level A and Level B.1 and assuming 82 GPCD, which is approximately the current wastewater GPCD for the sewer collection system on the westside of Albuquerque. The flows are summarized in **Table 1**.

Determining Water and Wastewater Infrastructure Requirements

The Santolina development is located outside the Water Authority's adopted service area. In addition to the commitment to provide water and sewer service to properties within the adopted service area, the Water Authority has existing contractual obligations and approved development agreements for which water and wastewater system capacity has been dedicated. After determining the legal commitments for water and sanitary sewer service, the existing capacities for the water and sanitary sewer system for the westside of Albuquerque were compared to the legal commitments to estimate available capacity.

Table 1 - Santolina Development Projections

Criteria	Level B	Buildout (Level A)
Acres	4,243	13,851
Population	22,000	94,804
Water Supply (AFY)[1]	2,710	11,700
Peak Day Demand (MGD)	4.4	18.5
Non-Potable[2]	***1.1***	***4.4***
Potable[3]	***3.3***	***14.1***
Avg. Day Wastewater Flows (MGD)	1.8	7.8

1. Calculated from 110 GPCD
2. Peak day to average day factor of 2.7 (INTERA, 2018) per estimates from reuse feasibility study (CH2M, 2012)
3. Peak day to average day factor of 1.6 per current total system water use

The Water Authority currently provides water supply to the westside of Albuquerque through a combination of surface and ground water. The Water Authority also has future plans to develop non-potable reuse systems to supply irrigated turf areas and provide water for aquifer storage and recovery (ASR).

Surface Water Capacity

The Drinking Water Project provides purified surface water to the east and westside of Albuquerque. Surface water is conveyed to the westside via transmission pipelines that cross the Rio Grande and extend to three terminal reservoirs (Don, College and Volcano Cliffs). The transmission pipelines and other Drinking Water Project infrastructure are used to meet demands on the westside by transferring ground water from the east to the west when the water treatment plant is not in operation. The available surface water from the Drinking Water Project is currently accounted for to meet existing demands or in other words is legally committed.

Ground Water Capacity

Figure 2 identifies the current ground water system capacity on the westside as compared to the legal commitments. As shown on Figure 2, ground water capacity on the westside in the is 54 MGD. However, approximately 24 MGD of this capacity is currently unavailable for use due to elevated arsenic concentrations. Furthermore, current legal commitments are 56 MGD which is in excess of all current ground water capacity. As such, additional ground water infrastructure will be required to serve the proposed development.

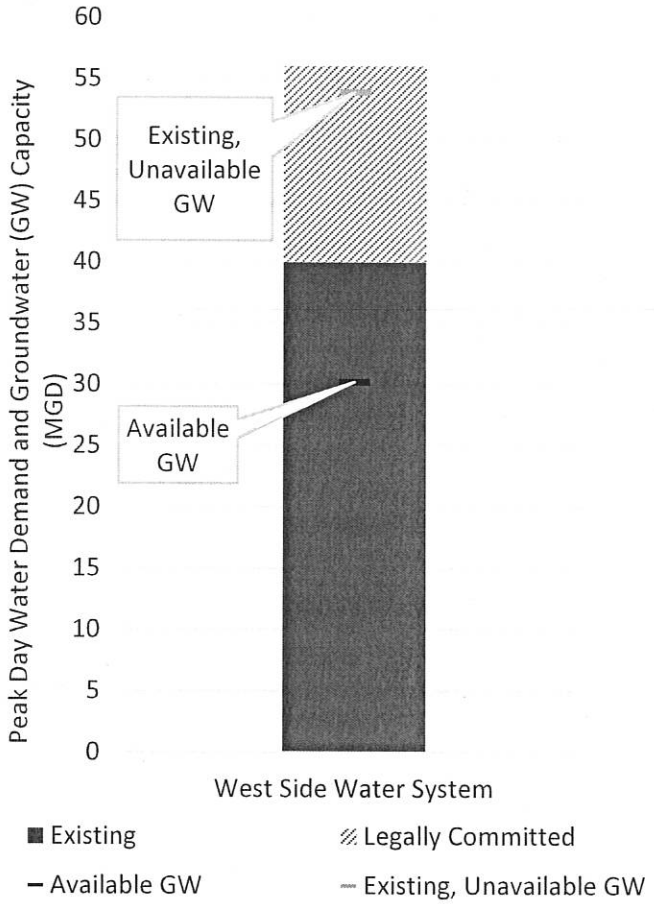

Figure 2 - Westside Ground Water System Capacity

Wastewater System Capacity

The capacity of the Southside Water Reclamation Plant (SWRP) is 76 million gallons per day (MGD). With a legally committed capacity of approximately 71 MGD and the Policy (R-07-06) to not expand the SWRP, the Water Authority will need additional wastewater treatment capacity to serve the development of Santolina (7 MGD ultimate projected wastewater need). The Bosque and Tijeras Water Reclamation Plants (WRP's) which were identified as part of Water 2120, are shown in Figure 3 to depict the anticipated additional capacity added with those projects. Additional water reclamation plants will be needed to meet future wastewater flows. Likewise, current wastewater interceptor capacity delivering water from the westside to the SWRP is not sufficient for meeting future obligations. The proposed Bosque WRP alleviates some of this future interceptor capacity need.

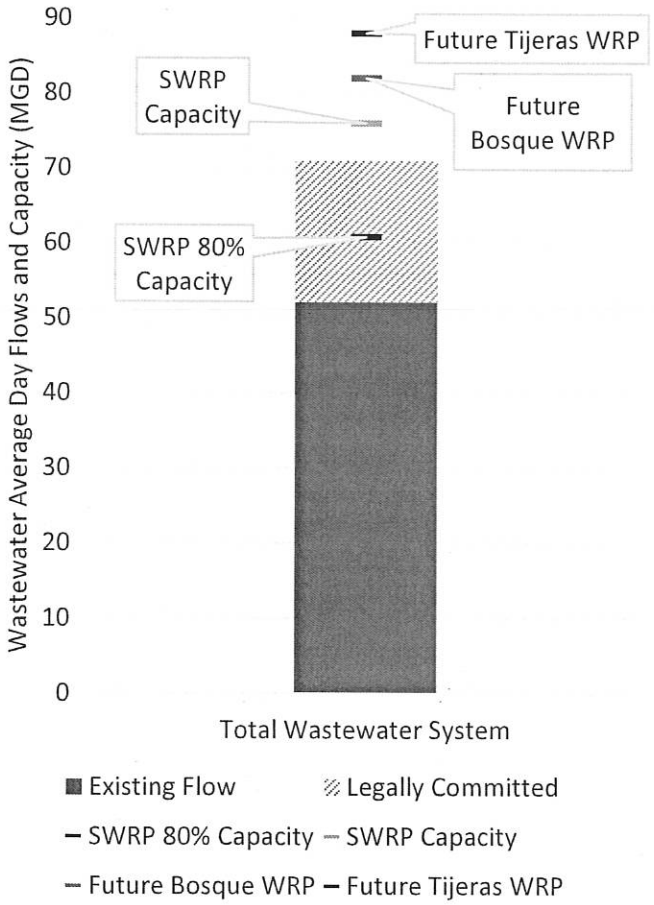

Figure 3 - Wastewater System Capacity

Water and Wastewater Infrastructure Requirements

Water, wastewater and reuse service is available for the Santolina Development with the construction of the required master plan water, wastewater and reuse infrastructure. These facilities shall be designed, constructed and approved by the Water Authority consistent with Water Authority policies, guidelines and specifications.

The full build out infrastructure required to meet the projected water and reuse demands along with the projected wastewater flows are identified on Table 2 and Figure 4. The timeline and phasing for the required infrastructure are outlined following this section. As described above and shown in Table 2, additional ground water capacity would be required for the proposed development to meet peak demands and to provide a redundant supply when surface water is not available.

Table 2 - Full Build Out Associated with Proposed Development – Master Plan Infrastructure

Water Infrastructure	
Pipe	13 miles transmission system pipe 12 miles raw water pipe
Storage	6 storage tanks 1000 AF Raw Water/Reuse Reservoir
Pumping	5 pump stations Surface Water Diversion (Rainey Collector) and Pump Station
Additional GW Capacity	18 MGD
Treatment	5 MGD Advanced WTP 10 MGD Conventional WTP
Reuse Infrastructure	
Treatment	4 MGD Bosque WRP 7 MGD WRP
Pipe	67 miles transmission system pipe
Storage	6 storage tanks
Pumping	3 pump stations
Wastewater Infrastructure	
Pipe	14 miles of interceptors

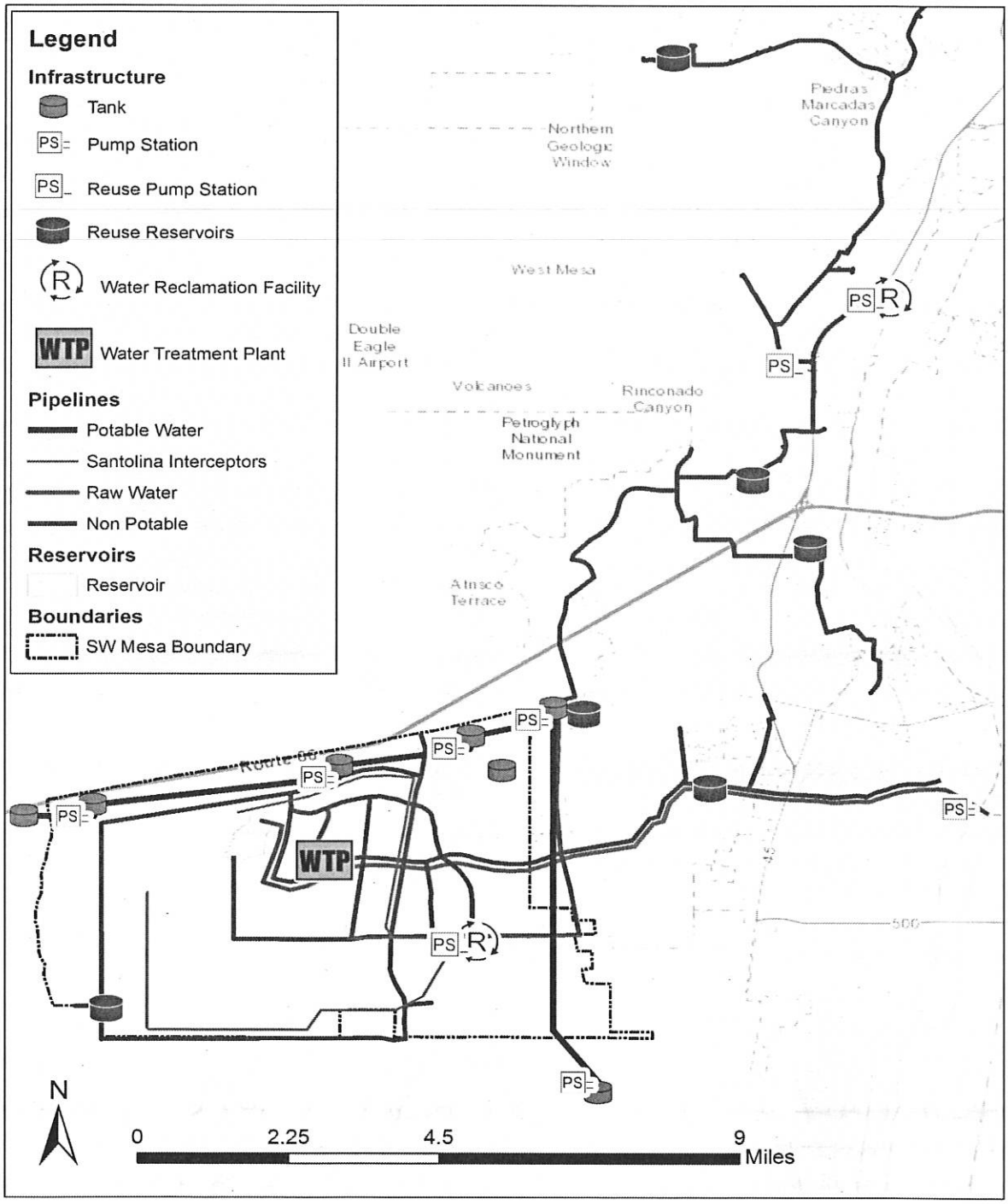

Figure 4 - Santolina Full Build Out Master Plan Infrastructure

Infrastructure Phasing

Three distinct infrastructure phases are proposed which are based the Water Authority's estimated water and reuse demands and wastewater flows for the proposed development as follows:

- Phase I – initial water, reuse and wastewater infrastructure required to provide capacity to serve the initial growth of the development.
- Phase II – additional ground water capacity and reuse infrastructure to meet potable and non-potable demands for the development, respectively.
- Phase III – remaining infrastructure to meet full build out demands.

Phase I

The first phase covers the initial growth of the Santolina development (see Figures 5 and 6). Water demands will be met by constructing the Bosque Water Reclamation Plant and associated pipelines identified in Figure 6. Transitioning existing uses from potable to non-potable will free up approximately 4 MGD of system capacity necessary to meet the developments initial potable demands. In addition, the water reclamation plant will treat wastewater at the site thereby reducing downstream flows and freeing up wastewater interceptor capacity. This will allow the proposed development to discharge wastewater into the existing system and the net difference will not be an increase in flows at the SWRP.

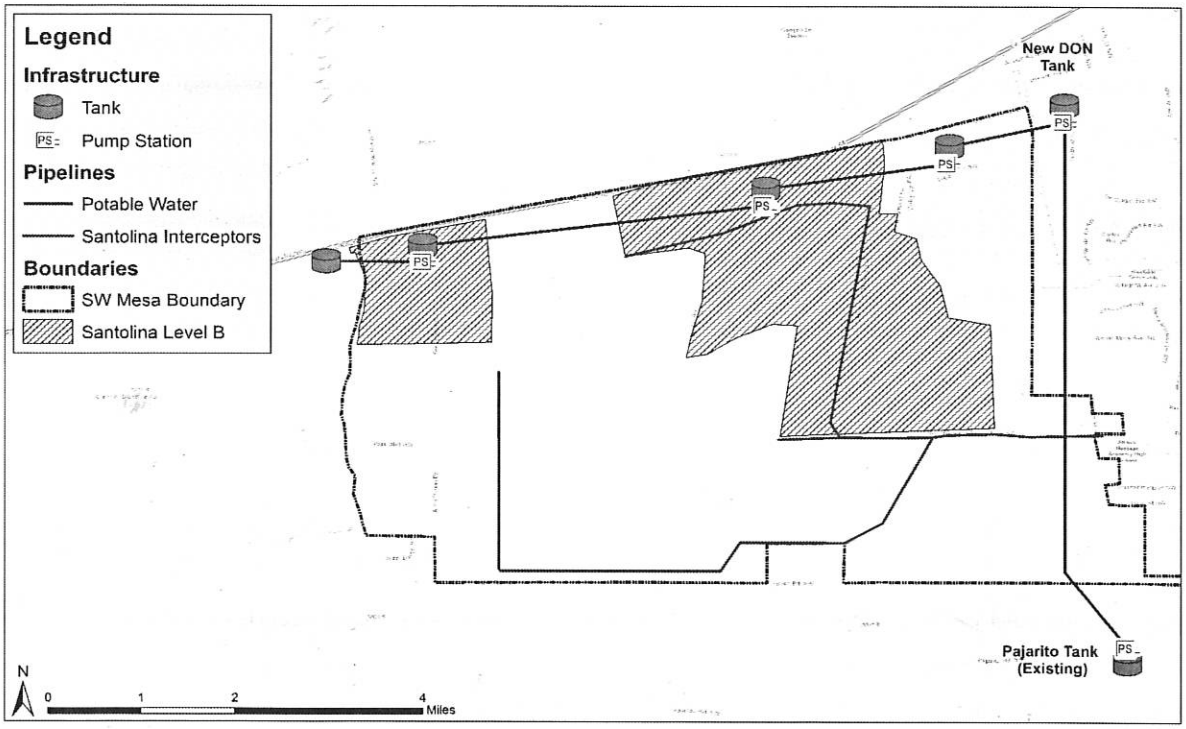

Figure 5 - Santolina Phase 1 Water and Sewer Infrastructure

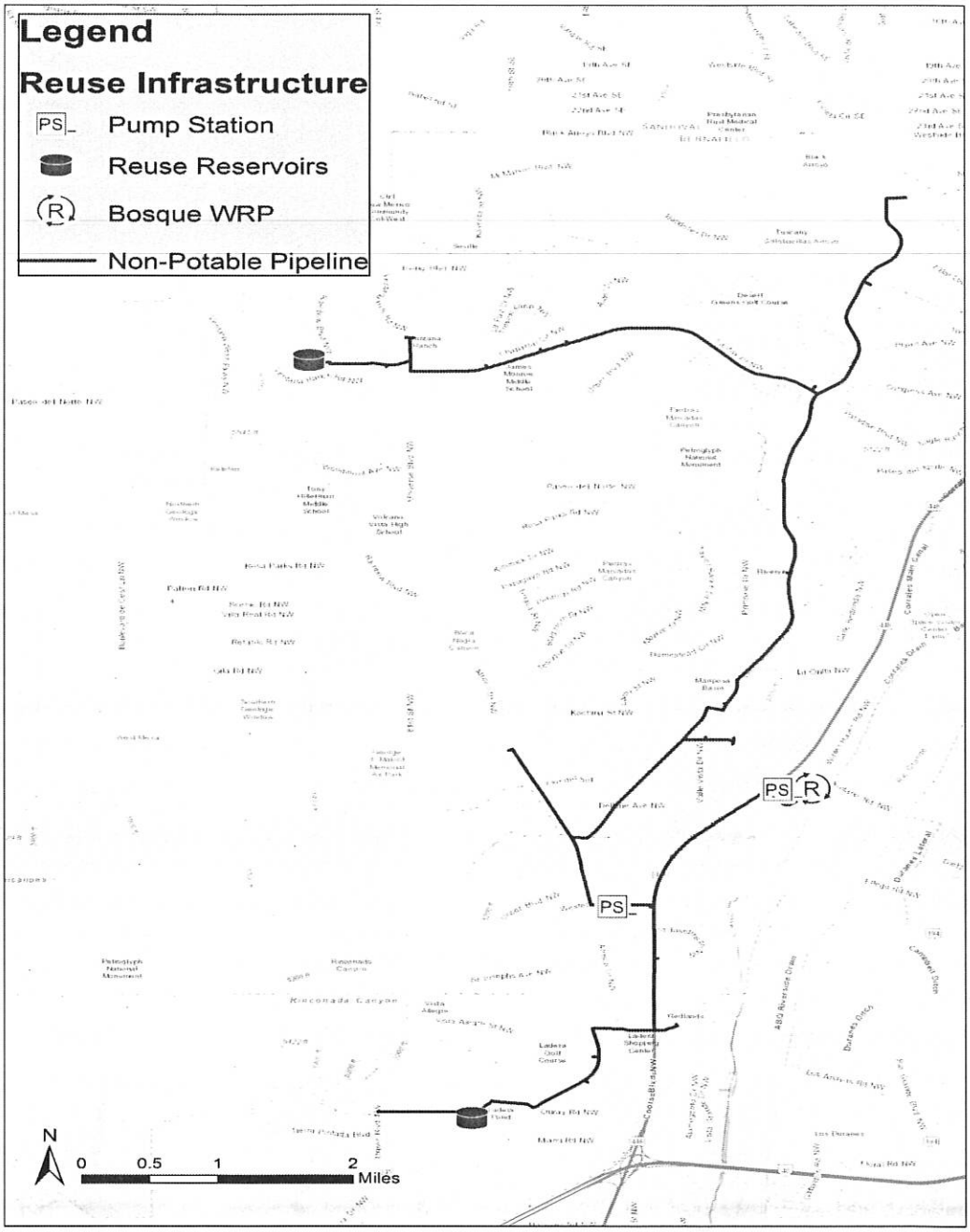

Figure 6 - Santolina Phase 1 Reuse Infrastructure

Phase I Water Infrastructure

To connect to the existing water transmission and reservoir systems, 5 new reservoirs as well as associated pipelines and pump stations are required. Additionally, the Santolina development will require 6 MGD of ground water infrastructure to provide redundant system capacity to meet peak demands and for times when surface water is not available. Water for the initial development will be provided by constructing the Bosque reuse system as shown in Figure 6 which will free up potable capacity to serve potable water for the initial development. To provide additional redundancy when transfer of water from the east to westside is not available from the Drinking Water Plant transmission pipelines, a second water supply from the Pajarito trunk is required. This will provide short and long-term reliability to the development and requires the construction of a pump station and pipeline to connect Pajarito reservoir to the new Don Reservoir.

Table 3 - Phase 1 Infrastructure

Water Infrastructure	
Pipe	13 miles transmission system pipe
Storage	5 storage tanks
Pumping	5 pump stations
Groundwater Capacity	6 MGD
Reuse Infrastructure	
Treatment	4 MGD Bosque Water Reclamation Plant
Pipe	16 miles transmission system pipe
Storage	2 storage tanks
Pumping	2 pump stations
Wastewater Infrastructure	
Pipe	14 miles of interceptors

Phase I Reuse Infrastructure

The Bosque Reuse System will provide non-potable water to existing uses and free up interceptor capacity to allow Santolina to discharge into the existing system downstream of Lift Station 24. The Bosque Reuse system consists of a 4 MGD water reclamation plant that will treat effluent collected upstream of Lift Station 24 to meet non-potable demands in the summer months and then would be discharged to the Rio Grande during the winter months. The identified irrigation sites will require non-potable reservoirs, pump stations and distribution system piping to move the treated effluent from the Bosque site (see Feasibility Study for the Bosque and Tijeras Reuse Projects, CH2M Hill, 2012).

Phase I Wastewater Infrastructure

Wastewater service requires almost the full build out of the proposed development's interceptor system to provide gravity service to the Level B.1 area. This includes the construction of approximately 14 miles of interceptor lines that will initially flow to the SWRP. As interceptor capacity is used, the construction of a new 1 MGD Water Reclamation plant will be required at the beginning of Phase II.

Phase II

When build out of the Level B.1 master plan or when non-potable demand reaches 1 MGD, the developer will be required to meet subsequent demands with the construction of a new Water Reclamation Plant and associated reuse infrastructure as shown on Figure 7 and outlined in Table 4 below. The construction of the new 1 MGD water reuse system will reduce flows into the existing sewer interceptor system in the summer time. During the winter time, the effluent will be partially used for irrigation and will be discharged to the SWRP until the larger water reclamation facility and associated reservoir are constructed in Phase III.

Table 4 - Phase II Infrastructure

Water Infrastructure	
Additional Groundwater	6 MGD
Reuse Infrastructure	
Pipe	26 Miles
Storage Tanks	1 Tank
Pump Stations	1 Pump Station
Scalping WRP	1 MGD

Phase II Water Infrastructure

Phase II water infrastructure consists of additional ground water capacity to meet peak demands and as a redundant supply when surface water supplies are not available. The total ground water capacity of 6 MGD meets the estimated demand at the end of the phase and as such ground water capacity can be developed over time from Phase II to the start of Phase III.

Phase II Reuse Infrastructure

The reuse infrastructure consists of a new approximately 1 MGD scalping water reclamation plant (WRP), about 26 miles of non-potable distribution, pump station and reservoir. The new plant shall be sited to collect the wastewater flows from the Santolina development. The location shown in Figure 7 is approximate. The actual location of the new water reclamation plant will be determined based on an updated wastewater and reuse master plan.

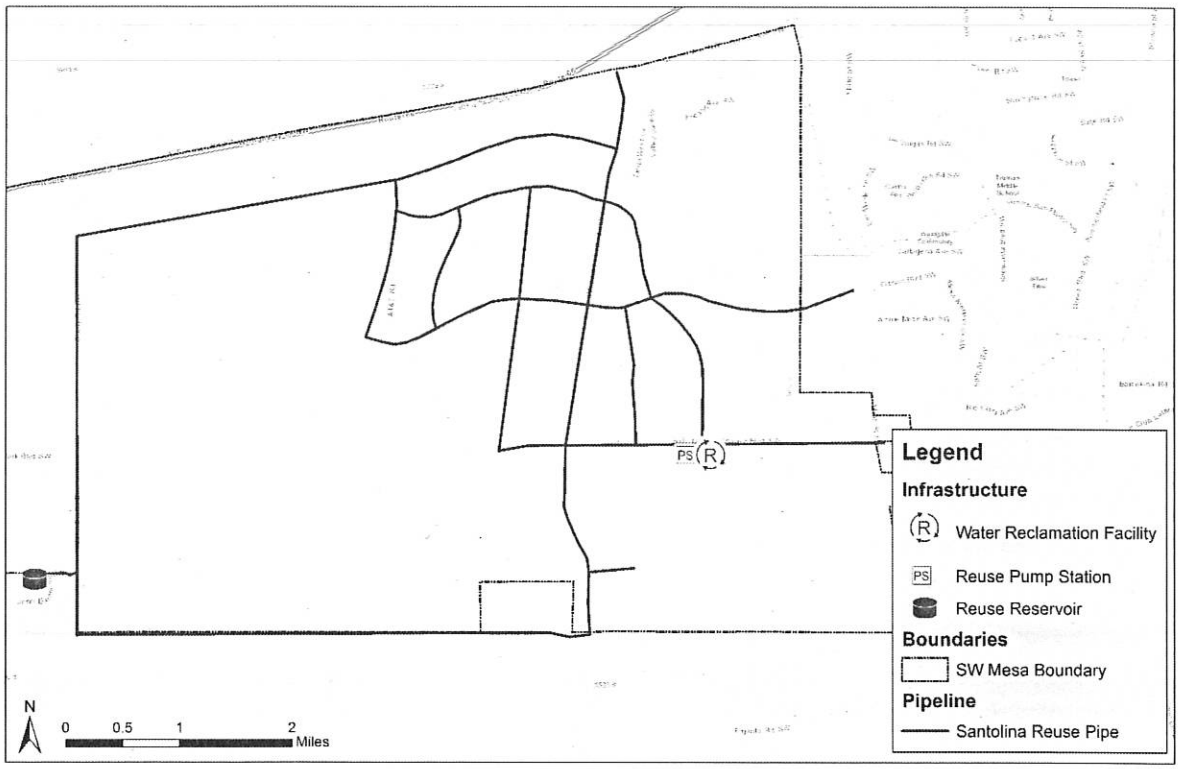

Figure 7 - Santolina Phase 2 Reuse Infrastructure

Phase III

The Phase III infrastructure development is triggered by capacity exceedance of the wastewater interceptor system and lift station. The critical infrastructure includes the Lakeview Interceptor, Lift Station 20 and the Amole/Mattress Interceptor. At this time, it has been calculated that the Lakeview Interceptor will reach capacity first which would be the trigger for Santolina to expand the existing water reclamation plant (WRP) in the southwest. This would relieve the capacity issues for the existing interceptor and Lift Station 20.

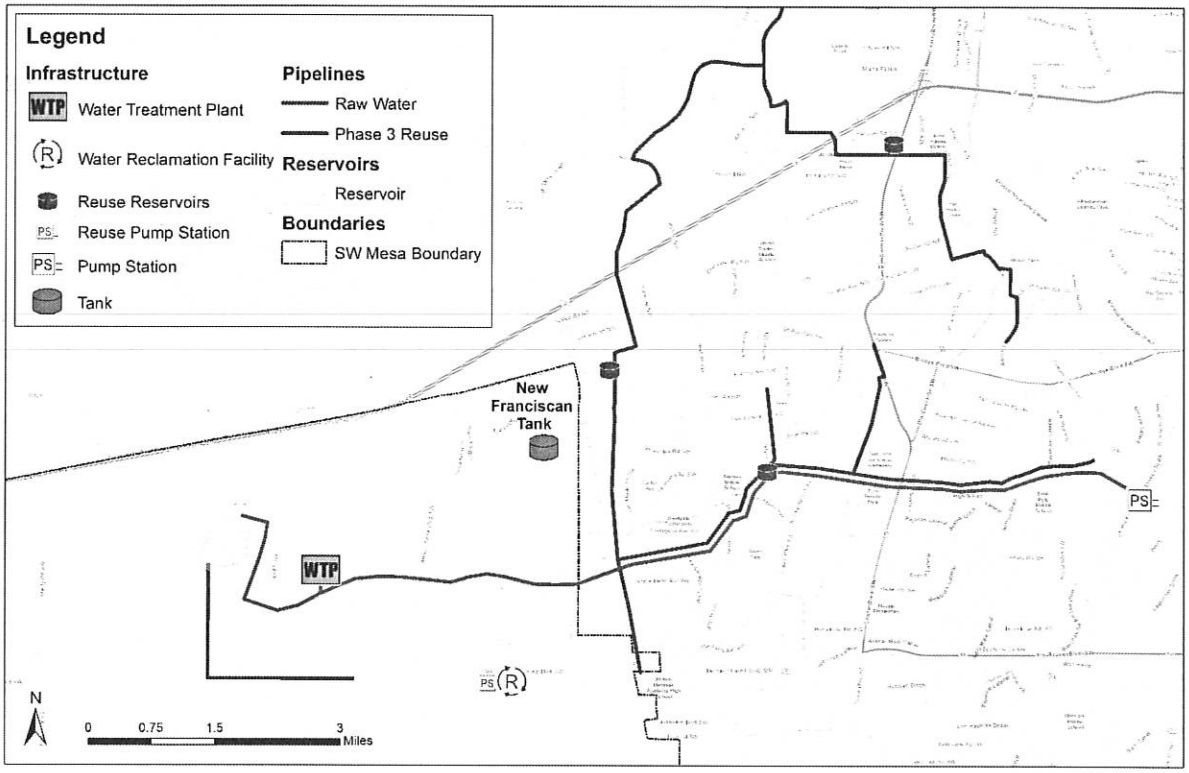

Figure 8 - Santolina Phase 3 Infrastructure

In conjunction with the expansion of the 1 MGD WRP constructed in Phase II, it will be necessary to build a new water treatment plant capable of indirect potable reuse consistent with Water 2120. Given the use of recycled water and the associated reservoir storage needs, managing total dissolved solids (TDS) concentrations to below the Safe Drinking Water Act (SDWA) secondary drinking water standards will be important. Expansion of the reuse system that serves Santolina to areas outside of the development will provide additional potable capacity for the development. Figure 8 above with Table 5 identifies the infrastructure for Phase III.

Phase III Water Infrastructure

Phase 3 requires an advanced treatment plant and a conventional water treatment plant for indirect potable reuse (IPR) to meet the projected demand and treat a new surface water source from the Rio Grande. The location of the facilities will need to be determined and could be co-located or separated depending on the regulatory framework at that time. Figure 9 shows a conceptual schematic of the proposed advanced treatment for indirect potable reuse (IPR). A new diversion, pump station and raw water pipeline to provide surface water to the treatment plant are required for Phase III. Additionally, 6 MGD of additional groundwater supply would have to be constructed to meet peak demands and as a redundant supply when surface water supplies are not available. A total of 18 MGD of ground water capacity is needed for this development.

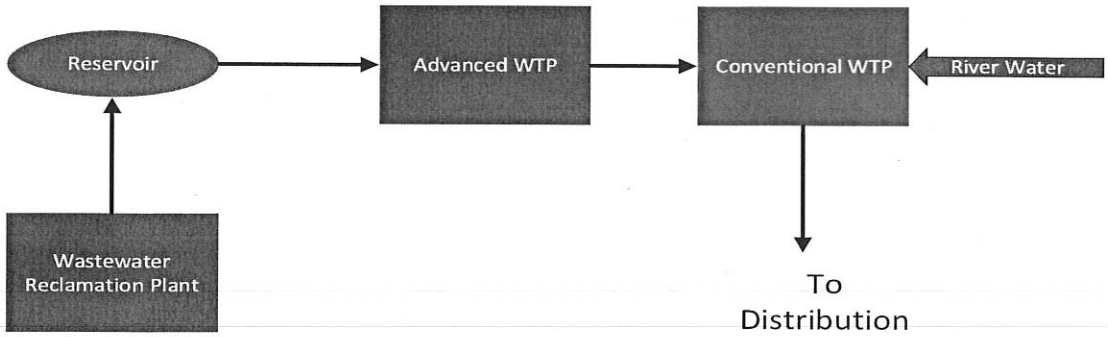

Figure 9 - Santolina IPR Conceptual Diagram

In addition to the advanced and conventional water treatment plants, a 1000 AF (325 million gallons or one month of supply at full build out) reservoir that will be able to store 325 million gallons, which is equivalent to a month at the average (10.5 MGD) flows. An additional storage tank to replace the existing Franciscan Reservoir will be required at this time to serve zones 4W and 3WR assuming that development of these zones occurs during Phase III. However, the new Franciscan Reservoir may be needed earlier depending on the development phasing that impacts the existing system.

Table 5 - Phase III Infrastructure

Water Infrastructure	
Storage	1 Storage tank
Treatment	5 MGD advanced WTP 10 MGD conventional WTP
Pumping	Surface Water Diversion (Rainey Collector) and Pump Station
Pipeline	12 miles of raw water transmission pipe
Raw/Reuse Water Storage	1000 AF Reservoir
Additional Groundwater	6 MGD
Reuse Infrastructure	
Treatment	6 MGD Santolina WRP expansion
Pipe	25 miles transmission system pipe
Storage	3 storage tanks
Pumping	Pump station expansion

Phase III Reuse Infrastructure

The 1 MGD WRP would need to be expanded to meet most of the projected flow for Santolina at 7.0 MGD. A portion of the Santolina wastewater flows will be conveyed to the Amole/Mattress and Dennis Chavez interceptors due to the topography of the area. The rest of the reuse distribution system should be built in this phase to utilize the water produced from the WRP, and to mitigate the cycling up of TDS in the system. To control TDS, the two reuse systems (Santolina and Bosque Reuse) must be connected to add redundancy and supply source flexibility.

Master Plan Documents

Infrastructure requirements noted herein have been established based on population projections and demands as projected by the developer and reviewed or revised by the Water Authority. The actual location and sizing of the new master plan infrastructure will be determined based on revised Water, Reuse and Wastewater Master Plan documents that are to be produced by the developer and approved by the Water Authority in accordance with this water and sewer serviceability letter.

The infrastructure discussed on the following pages addresses master plan lines and facilities that are needed to provide service to Level A and Level B, but the developer is responsible for the design and construction of the following to provide service to the site:

- Potable Water transmission and distribution system lines necessary to meet on-site water demand and fire flows for the development
- Non-potable water transmission and distribution system lines necessary to meet on-site non-potable water demand
- Wastewater collection system infrastructure required to collect and convey wastewater to treatment facilities

The existing Water and Wastewater Master Plan document produced by BHI for the development which were submitted to Bernalillo County are not approved and will need to be updated as described above.

Triggers

Based on the proposed buildout year of 2065, Figure 10 presents a general timeline of when major infrastructure would be required.

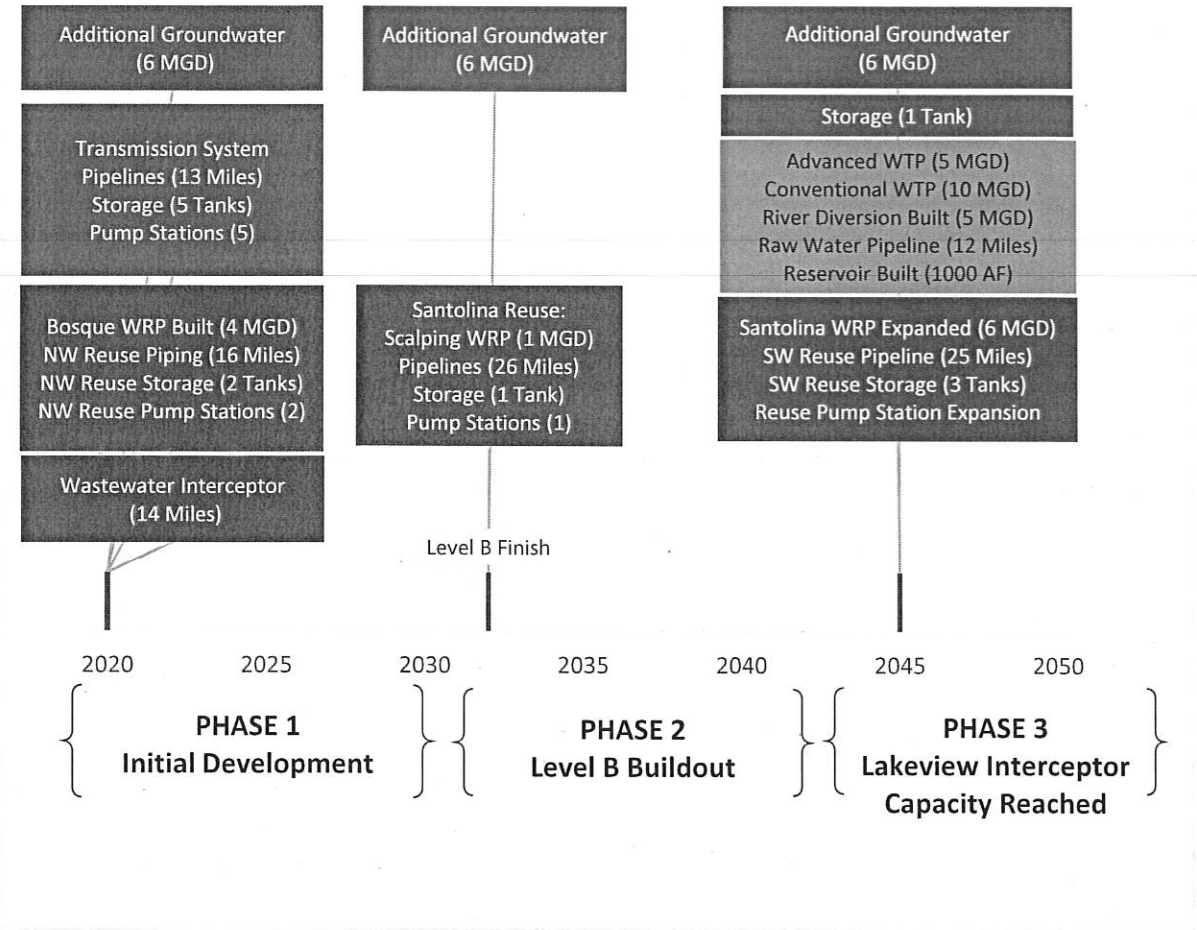

Figure 10 – Santolina Infrastructure Phasing