



Chapter Six Utilities Plan

6.1 Overview of Utilities Plan

This section of the Rancho Los Lagos Specific Plan addresses the utility systems required to serve the Plan area. Each component of the utility system is designed to ensure adequate infrastructure capacity to serve demand from all land uses at buildout of the Rancho Los Lagos Specific Plan. The following Plan area utilities are discussed in detail below: water, wastewater, storm drainage and detention, electricity, and natural gas. **Table 6-1** lists the utility providers. Additional utilities including telephone and cable television will also be available. The telephone service provider is AT&T and the cable television service provider is Adelphia Cable. Many of these utilities are located within public road rights-of-way described in Section 3.0 - Circulation Plan.

**Table 6-1
Utility Providers**

Utility	Provider
Water	County Service Area (CSA) or Special District
Sewer	County Service Area (CSA) or Special District
Storm Drainage	County Service Area (CSA) or Special District/ Imperial Irrigation District
Natural Gas	Southern California Gas Company
Electricity	Imperial Irrigation District

6.2 Water Supply

Water demand in the Plan area varies by land use. Different water demand factors for each land use within the Plan area are used to determine the estimated water needs at build-out of the Rancho Los Lagos Specific Plan. The water demand factors and total water demand for each land use within the Plan area are provided in **Table 6-2** which indicates the anticipated potable water demand for both domestic and irrigation use within the Rancho Los Lagos Specific Plan. The water demand factors were derived from the *Rancho Los Lagos SB610 Water Supply Assessment* prepared by Development Design & Engineering, dated July 3, 2008. The Plan area is expected to generate at buildout a daily potable water demand for both interior domestic and exterior irrigation use of approximately 2,266,141 gallons, equivalent to an annual water demand of 2.35 acre-feet/acre/year. Non-potable water demand for the executive golf course and lakes has been calculated to be approximately 1,025,500 gallons per day, equivalent to an annual demand of approximately 1.06 acre-feet/acre/year. It should be noted that historical agricultural operations on this site have required approximately 5.18 acre-feet/acre/year of irrigation water. Thus, the conversion from farmland to community development would reduce water consumption by 1.77 acre-feet/acre/year, or by over 620,000,000 gallons per year. The peak flow water demand at full development is the total water demand gallons per day (GPD) multiplied by a peaking factor of 2.0: (3,204,141 GPD* 2.0 = 6,408,282 GPD).

Several options exist for providing water service to the Rancho Los Lagos Specific Plan area. In 2007, the County of Imperial and City of Imperial entered into a Memorandum of Understanding (MOU) to develop water and wastewater treatment facilities for the area within and surrounding the Mesquite Lake Specific Plan Area. As part of that effort, planning is underway to develop either one regional water treatment plant located in the southern portion of the Mesquite Lake MOU area; or, alternatively, two sub-regional water treatment plants, one each to be located in the northern and southern portions of the Mesquite Lake MOU area. To further that effort, the County has initiated the formation of a Keystone County Service Area (KCSA). The KCSA may be initially established as or divided into northern and southern sub-areas. The KCSA would obtain treated domestic water from the water treatment facilities constructed under the Mesquite Lake MOU. These plants may be owned and operated by the City of Imperial, but would provide treated water to the KCSA under the terms of the Mesquite Lake MOU or other operating agreement to be entered into.

The Rancho Los Lagos Specific Plan proposes that domestic water be provided to the project site through the proposed KCSA by the extension of pipes to either: (1) a southern KCSA water treatment plant (WTP) proposed on a site to be determined near the City of Imperial in the Mesquite Lakes Specific Plan; or (2) a northern KCSA water treatment plant proposed to be located along an extension of Lavender (Schartz) Road west of Rancho Los Lagos on a site to be determined near the Central Main Canal. The potential environmental impacts associated with the construction of either of these off-site facilities will be analyzed in a separate environmental impact report once the specific facility features and facility sites have been identified.

In the event the proposed Rancho Los Lagos project commences construction prior to the completion of the KCSA facilities, either the KCSA would contract for treated water from another municipal local purveyor, or an KCSA community WTP would be located on-site within the Rancho Los Lagos Business Park. Both the KCSA regional or sub-regional, and the KCSA community WTP options would use raw water supplied by IID.

Potable water will be distributed throughout the Plan area via a looping network of 16-inch, 8-inch, and 1-inch water lines provided within the internal street right-of-ways. The exact number and location of water utility improvements will be determined when the final site, grading, and utility plans are prepared by the project engineer, subject to review and approval by the County of Imperial, KCSA and the Imperial Irrigation District (IID).

The proposed Water System Master Plan for the Plan area is depicted in **Figures 6-1a** through **6-1c**.

A water supply assessment (WSA) evaluating the adequacy of the supply of water to meet the projected demand generated by the Rancho Los Lagos Specific Plan area is required prior to development approval pursuant to California Water Code §10910-10915. The required WSA is included in the Rancho Los Lagos Specific Plan Environmental Impact Report.

As indicated in **Table 6-2**, the potential exists to use raw water directly from the Central Main Canal and/or the Rockwood Canal through a system of on-site raw water lines located within roadway rights-of-way. The use of raw water reduces demand for potable water and provides an attractive option for irrigating the golf course, the community park and certain open space areas. Raw water is far more cost effective than treated water for extensive landscaping requirements such as the golf course and community park.

The potential also exists to use reclaimed water for the Plan's golf course, community park, right-of-way landscaping, and other certain open space areas from a possible wastewater treatment plant that may be located either on-site or in the general vicinity. If located off-site, reclaimed water would be provided through a system of off-site and on-site reclaimed water lines located within roadway rights-of-way.

Table 6-2
Water Demand Factors and Total Demand by Land Use

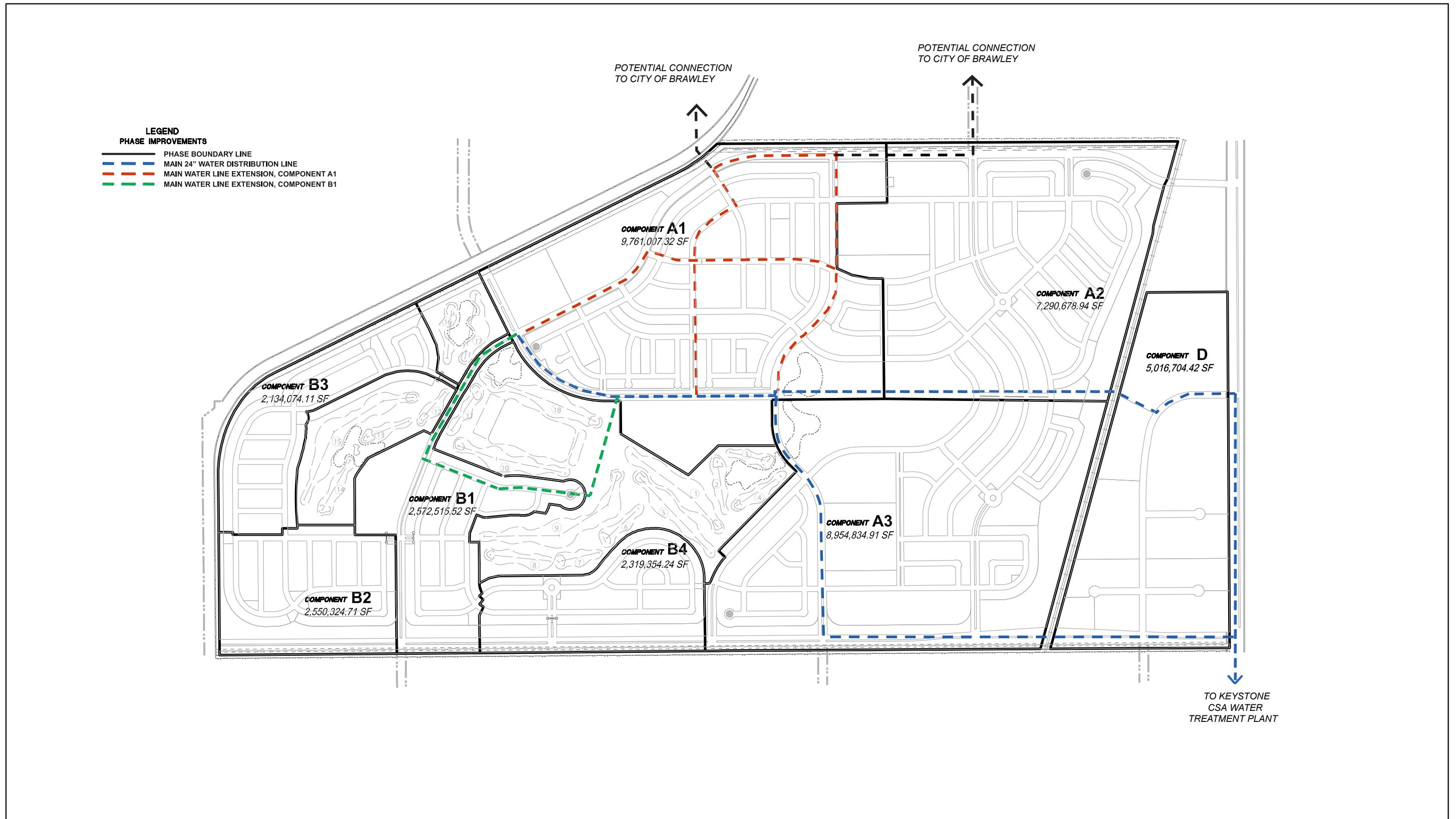
Land Use	Units	Quantity	Generation Rates Gallons/Day	Demand Gallons /Day
Single-Family Residential	du	1,875	355	665,625
Multi-Family Residential	du	1,016	291	295,656
Active Adult Residential	du	939	240	225,360
Elementary Schools	student	1300	25	32,500
	staff	60	20	1,200
	turf acre	9.6	5,000	48,000
Elementary Schools Subtotal	-	-	-	81,700
Parks (85% turf)	turf acre	56	5,000	280,000
Open Space Buffers (moderate landscaping)	acre	96	3,000	288,000
HOA Facility	turf acre	2.4	5,000	12,000
	acre	9.6	3,000	28,800
HOA Facility Subtotal	-	-	-	40,800
Business Park	acre	97	3,000	291,000
Commercial	acre	11	3,000	33,000
Circulation (15% turf)	acre	13	5,000	65,000
Total Potable Water Demand				2,266,141
Total Raw Water Demand: (Golf Course and Lakes) ¹	acre	146.5	7,000	1,025,500
Grand Total Water Demand (including Reclaimed/Raw and Treated Water)				3,291,641

Source: Rancho Los Lagos SB610 Water Supply Assessment, Development Design & Engineering, July 3, 2008.

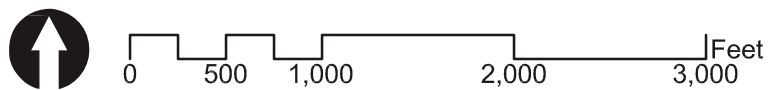
Notes:

¹ Assumes that non-potable water will be used (either reclaimed wastewater or raw water from the Imperial Irrigation District) and will not therefore create demand for potable water from the water treatment plant.

du = dwelling unit.



Source: NOLTE, 2006



P&D Consultants/EDAW

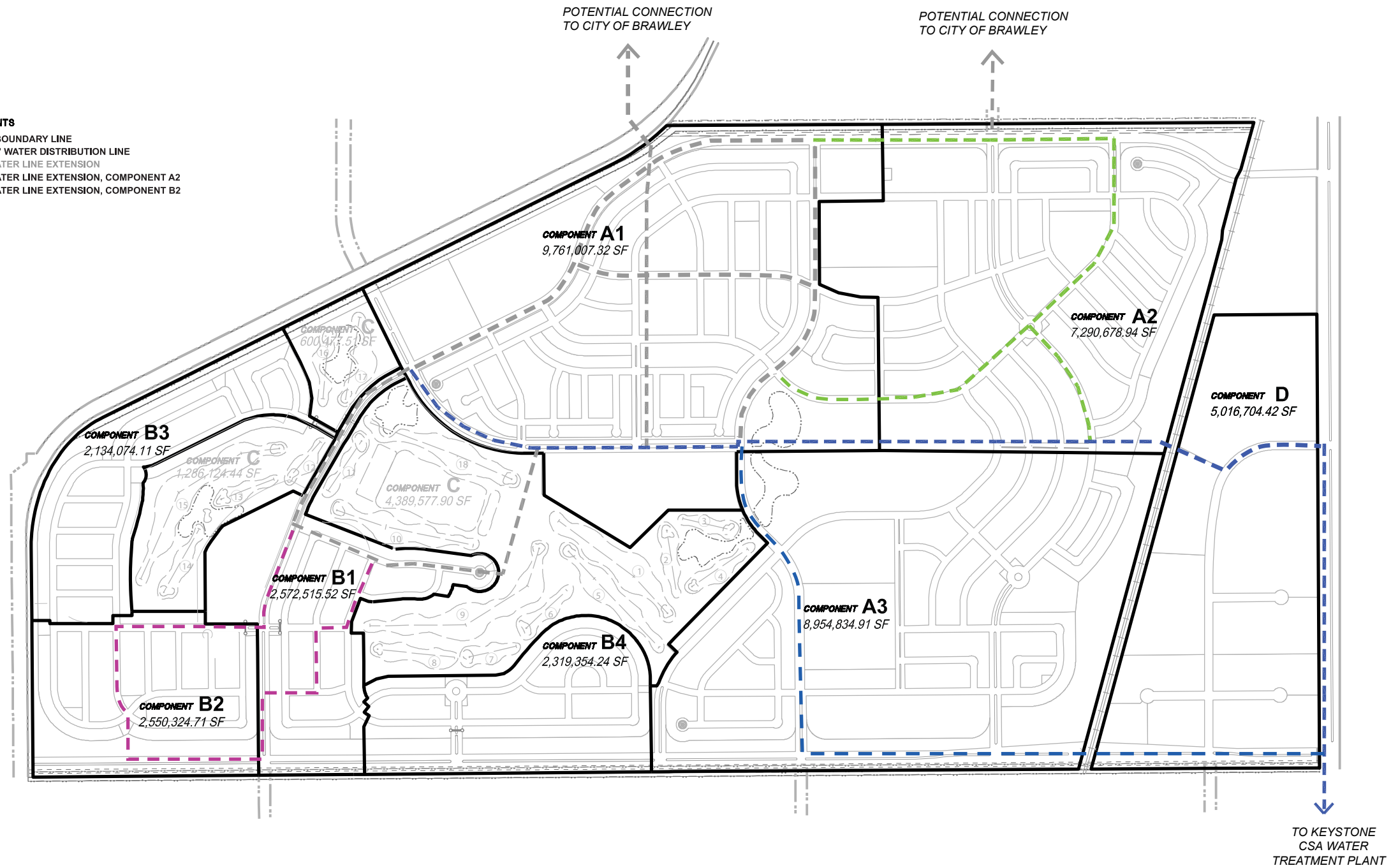
County of Imperial

Figure 6-1A
 Components A1 and B1 Water Systems

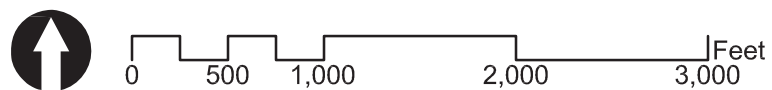
Rancho Los Lagos

This page intentionally left blank.

- LEGEND**
PHASE IMPROVEMENTS
- PHASE BOUNDARY LINE
 - MAIN 24" WATER DISTRIBUTION LINE
 - MAIN WATER LINE EXTENSION
 - MAIN WATER LINE EXTENSION, COMPONENT A2
 - MAIN WATER LINE EXTENSION, COMPONENT B2



Source: NOLTE, 2006









P&D Consultants/EDAW

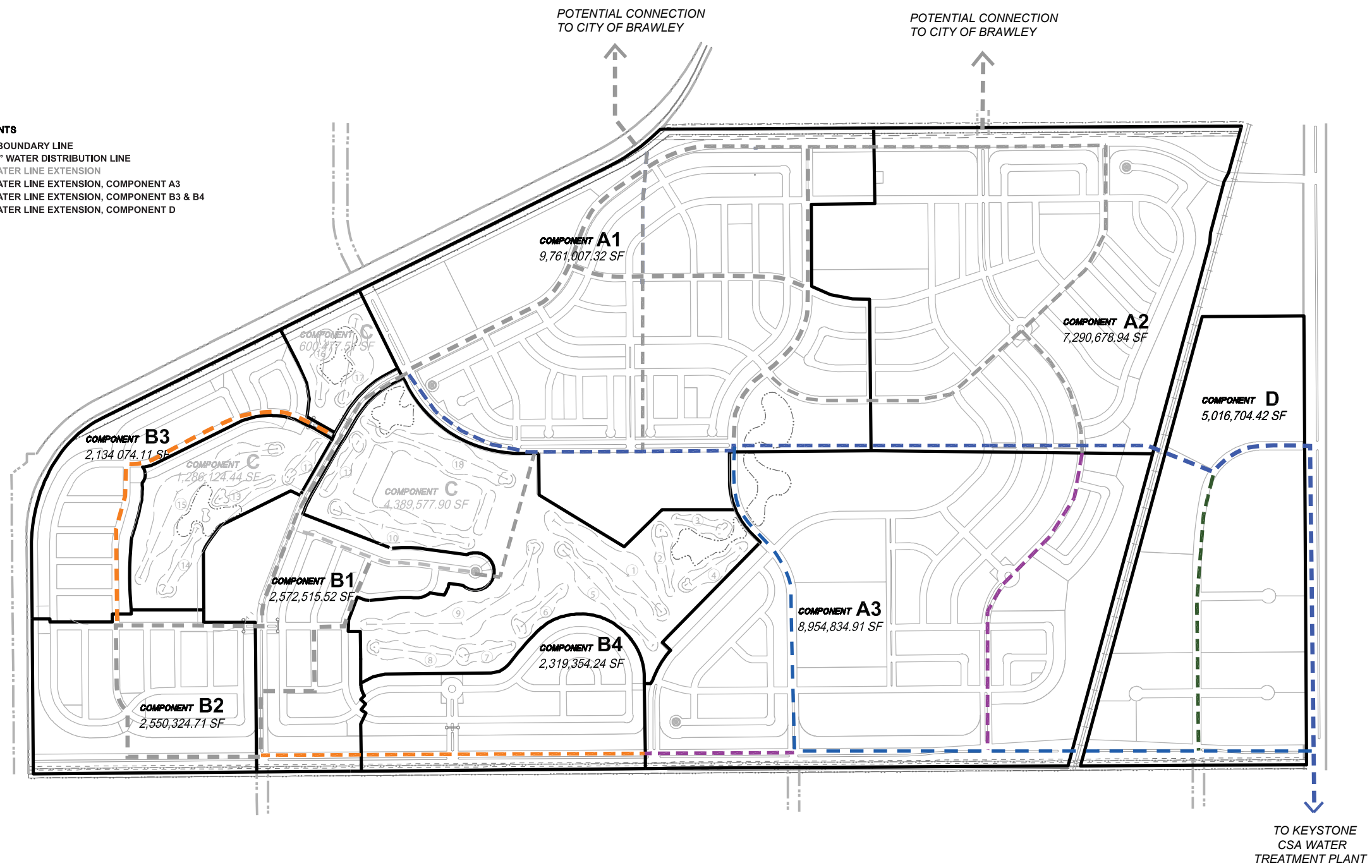
County of Imperial

Figure 6-1B
 Components A2 and B2 Water Systems

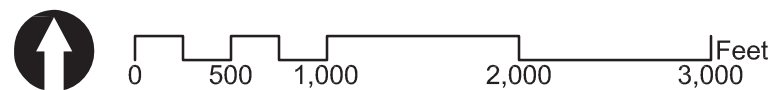
Rancho Los Lagos

This page intentionally left blank.

- LEGEND**
PHASE IMPROVEMENTS
-  PHASE BOUNDARY LINE
 -  MAIN 24" WATER DISTRIBUTION LINE
 -  MAIN WATER LINE EXTENSION
 -  MAIN WATER LINE EXTENSION, COMPONENT A3
 -  MAIN WATER LINE EXTENSION, COMPONENT B3 & B4
 -  MAIN WATER LINE EXTENSION, COMPONENT D



Source: NOLTE, 2006



P&D Consultants/EDAW

County of Imperial

Figure 6-1C
 Components A3, B3, B4 and D Water Systems

Rancho Los Lagos

This page intentionally left blank.

6.3 Wastewater

New wastewater infrastructure must be provided to accommodate the anticipated wastewater discharge generated by each of the planned land uses in the Plan area (**Figures 6-2a through 6-2c**). Discharge factors for each land use are used to calculate the total wastewater discharge for all land uses and for the entire development at buildout of the Plan area. A summary of these uses, the anticipated discharge and total Plan area discharge is provided in **Table 6-3**. The wastewater demand factors were derived from the *North Mesquite Lake Sewer And Water Analysis* prepared by the Holt Group, Inc., dated May 2008. The Plan area is expected to generate at buildout a daily wastewater treatment demand of approximately 853,241 gallons, roughly equivalent to the daily irrigation water demand of the proposed golf course.

As with the potable water options, the Rancho Los Lagos Specific Plan proposes that sewer service be provided to the project site through the proposed Keystone County Service Area (KCSA) by acquisition of capacity in, and the extension of pipes from the project site to, a proposed Keystone Wastewater Treatment Plant (WWTP) to be built along Dogwood Road south of the Rancho Los Lagos Specific Plan area on a site to be determined within the Mesquite Lake Specific Plan Area pursuant to the County of Imperial / City of Imperial MOU. The potential environmental impacts associated with the construction of this off-site facility will be analyzed in a separate environmental impact report once the specific facility features and facility sites have been identified.

In the event the proposed Rancho Los Lagos project commences construction prior to the completion of the KCSA WWTP facility, interim sewer service could be provided through the KCSA by constructing a temporary package sewage treatment plant on-site within the Business Park. The latter option would include an opportunity to use reclaimed water for irrigation of the golf course and public areas within the Specific Plan area.

At such time as the regional facilities become available, the interim on-site package wastewater treatment plant would be either: (1) converted to a pump station, if required; (2) retained on-site as a wastewater reclamation plant to treat and distribute reclaimed water up to the capacity equivalent to the project reclaimed water demand; or (3) abandoned and dismantled to allow the re-development of the treatment plant site for other business park use. A reclamation facility, if utilized, would be designed and constructed to California Title 22 treatment standards allowing the unrestricted reuse of reclaimed water for irrigation use with any excess reclaimed water during wet seasons discharged back into the IID irrigation drain system ultimately discharging into the Salton Sea.

Table 6-3
Total Wastewater Discharge

Land Use	Units	Quantity	Generation Rates Gallons/Day	Discharge Gallons /Day
Single-Family Residential	du	1,875	205	384,375
Multi-Family Residential	du	1,016	191	194,056
Active Adult Residential	du	939	90	84,510
Elementary Schools	student	1,300	25	32,500
	staff	60	20	1,200
Elementary Schools Subtotal	-	-	-	33,700
Community Park	-	-	-	300
HOA Facility	acre	12	1,300	15,600
Executive Golf Course	-	-	-	300
Business Park	acre	97	1,300	126,100
Commercial	acre	11	1,300	14,300
Total Wastewater Flow				853,241

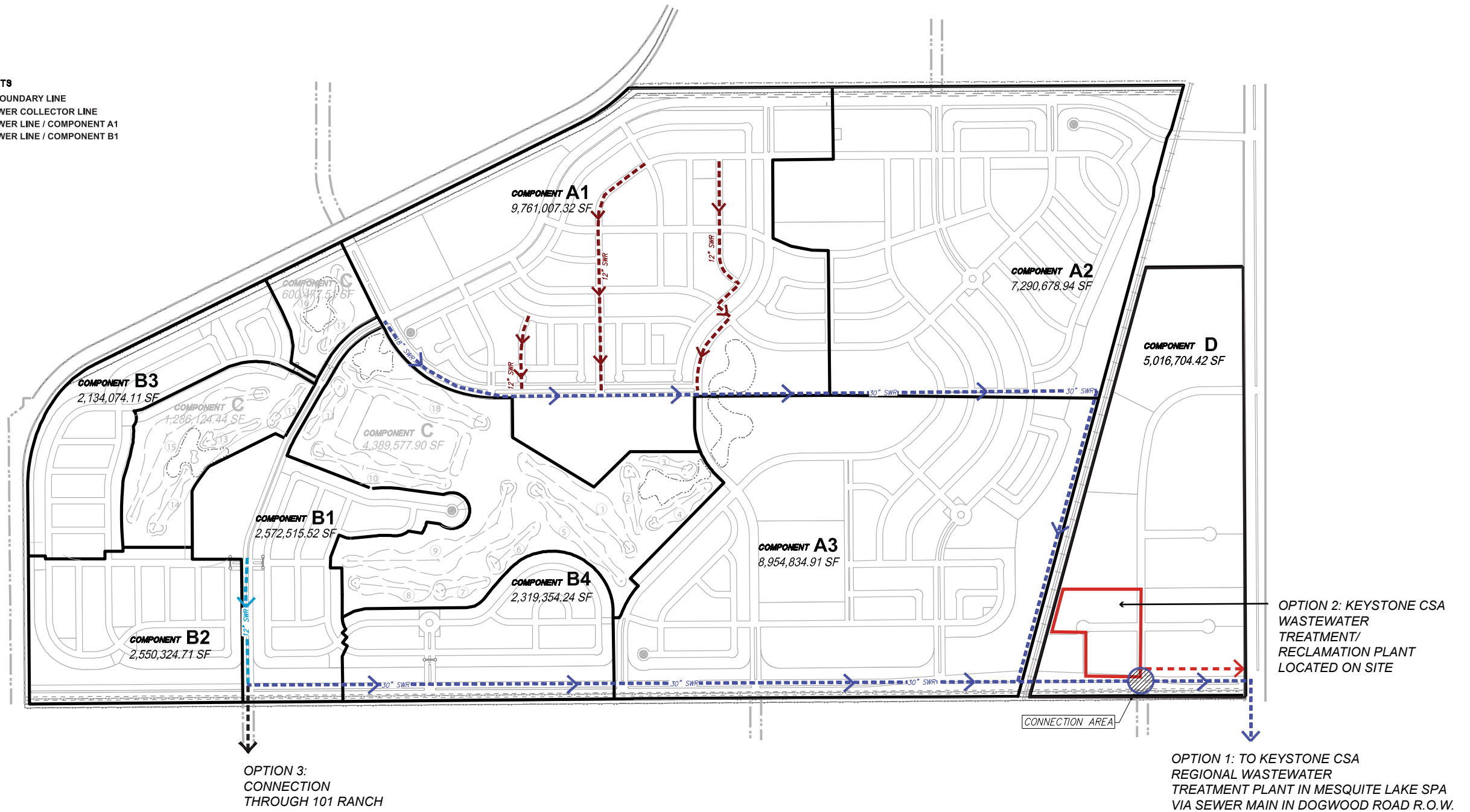
Source: North Mesquite Lake Sewer and Water Analysis Including Initial Sewer and Water Treatment Plant Expansions, Holt Group, May 23, 2008.

6.4 Storm Water Management

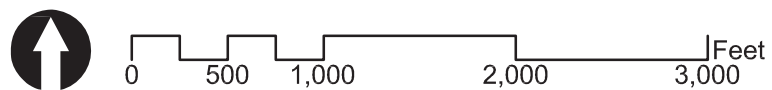
Urban storm water runoff in the Specific Plan area will be the responsibility of the Keystone County Service Area (KCSA) or special district and the Imperial Irrigation District. Standard practice has been to use a combination of piping into the New River and discharge through a system of IID main and lateral drains to discharge storm water. However, two issues limit the effectiveness of this arrangement: 1) IID drains were originally designed only for agricultural runoff, and the amount of urban runoff discharged into the drains is limited by IID to prevent downstream flooding; and 2) water quality problems regarding the New River and Salton Sea, the water body to which the drains ultimately discharge, prohibit the diversion of all storm water runoff to the New River. To address these issues, detention basins are used to control the amount of water discharged into IID drains.

The Rancho Los Lagos Storm Drainage Master Plan, shown in **Figure 6-3**, employs a combination of storm drain piping, detention facilities, and IID drains to accommodate storm water from the Plan area. The storm drain facilities, consisting of inlets and pipelines throughout the Plan area, are designed to handle general urban runoff of three inches of rain over the entire site within a 24-hour storm. The general urban runoff would be piped through the storm drain system, potentially into temporary detention facilities, and then into existing IID drains.

- LEGEND**
PHASE IMPROVEMENTS
- PHASE BOUNDARY LINE
 - MAIN SEWER COLLECTOR LINE
 - - - MAIN SEWER LINE / COMPONENT A1
 - - - MAIN SEWER LINE / COMPONENT B1



Source: NOLTE, 2006



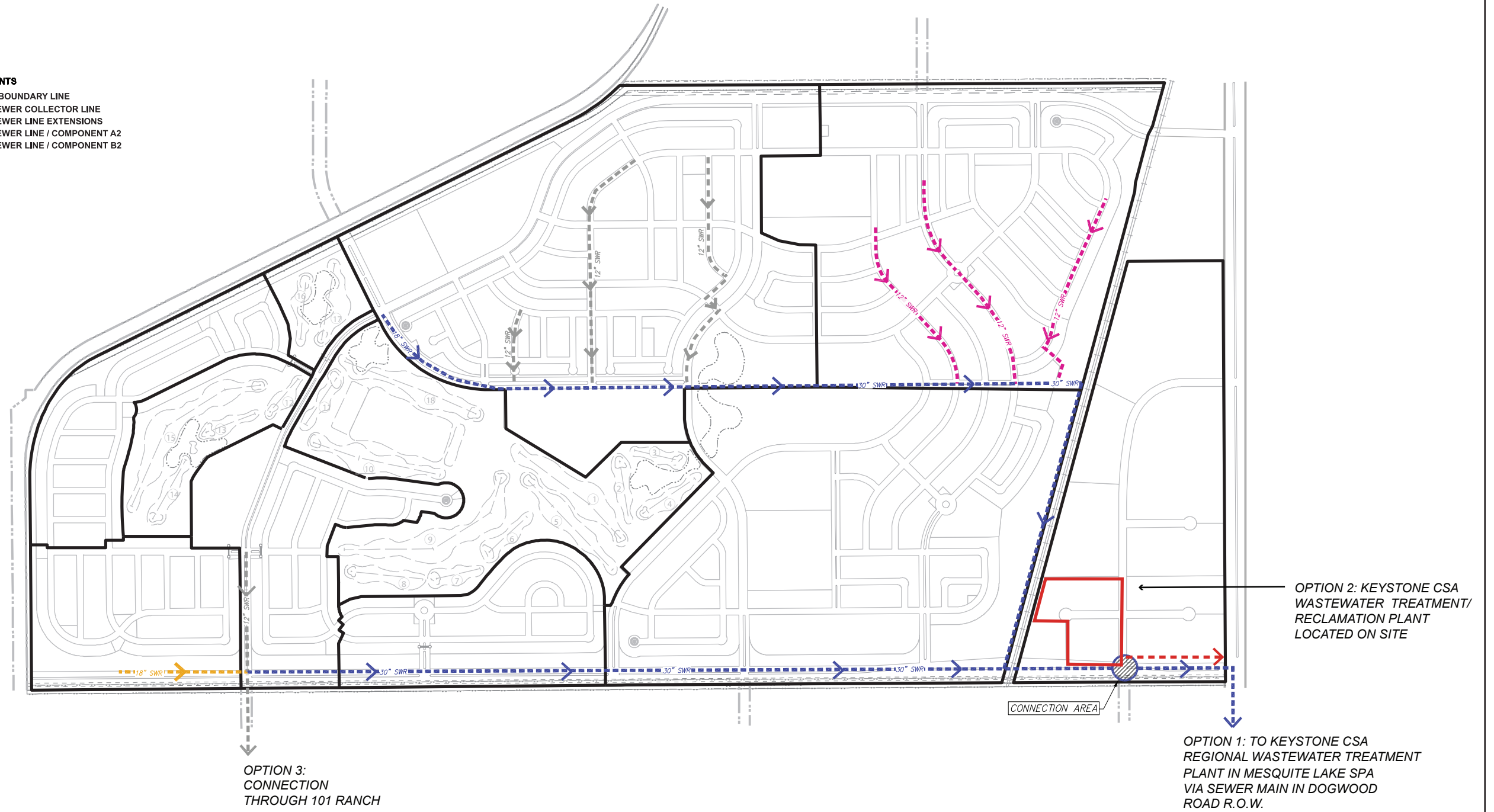
P&D Consultants/EDAW

Figure 6-2A
 Components A1 and B1 Wastewater Systems

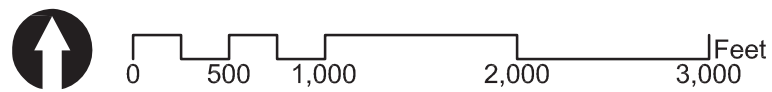
Rancho Los Lagos

This page intentionally left blank.

- LEGEND**
PHASE IMPROVEMENTS
- PHASE BOUNDARY LINE
 - MAIN SEWER COLLECTOR LINE
 - MAIN SEWER LINE EXTENSIONS
 - MAIN SEWER LINE / COMPONENT A2
 - MAIN SEWER LINE / COMPONENT B2



Source: NOLTE, 2006



P&D Consultants/EDAW

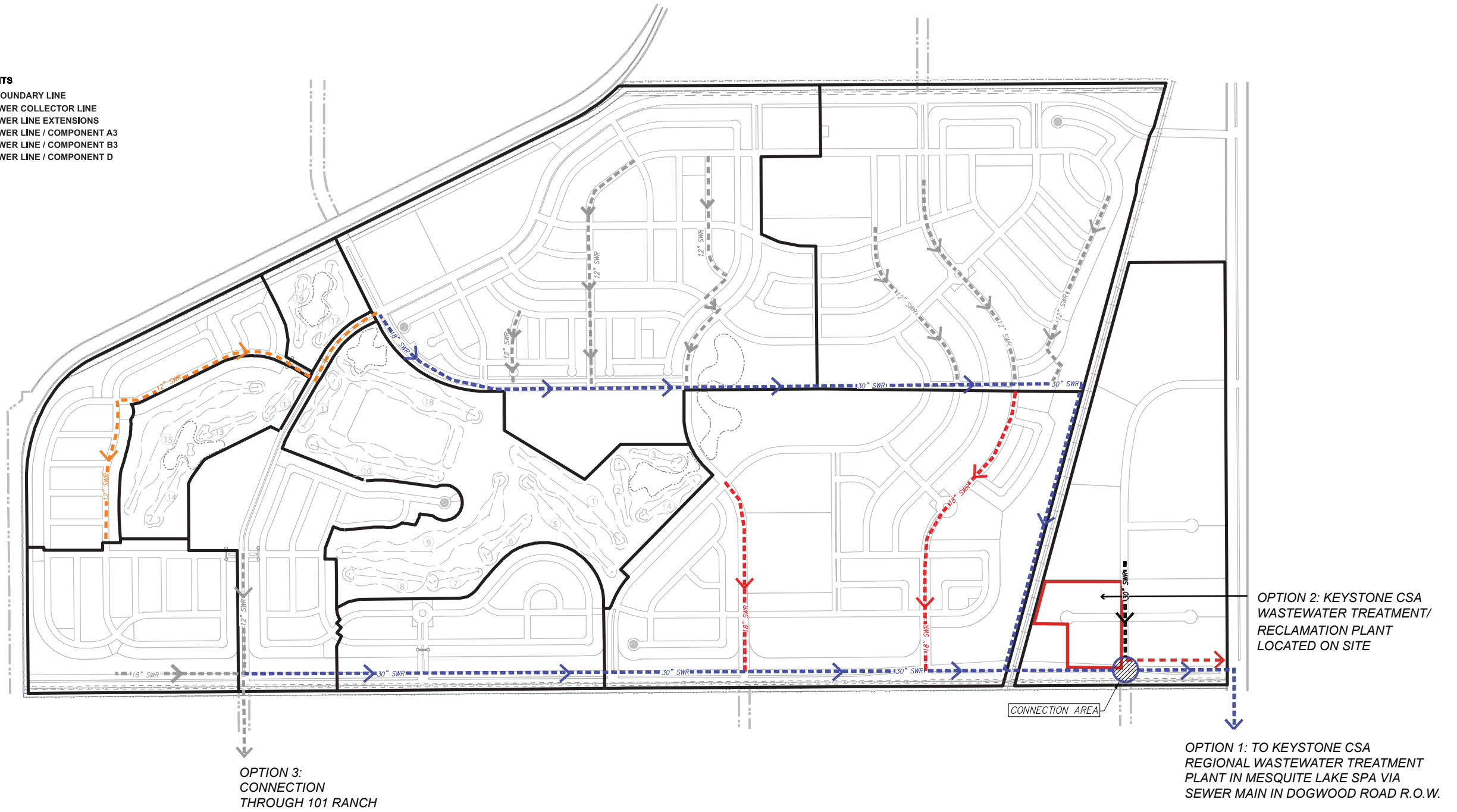
County of Imperial

Figure 6-2B
 Components A2 and B2 Wastewater Systems

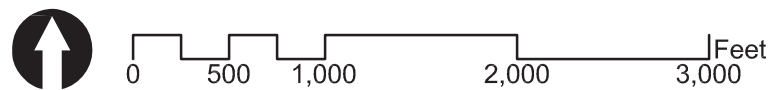
Rancho Los Lagos

This page intentionally left blank.

- LEGEND**
PHASE IMPROVEMENTS
- PHASE BOUNDARY LINE
 - MAIN SEWER COLLECTOR LINE
 - MAIN SEWER LINE EXTENSIONS
 - MAIN SEWER LINE / COMPONENT A3
 - MAIN SEWER LINE / COMPONENT B3
 - MAIN SEWER LINE / COMPONENT D



Source: NOLTE, 2006



P&D Consultants/EDAW

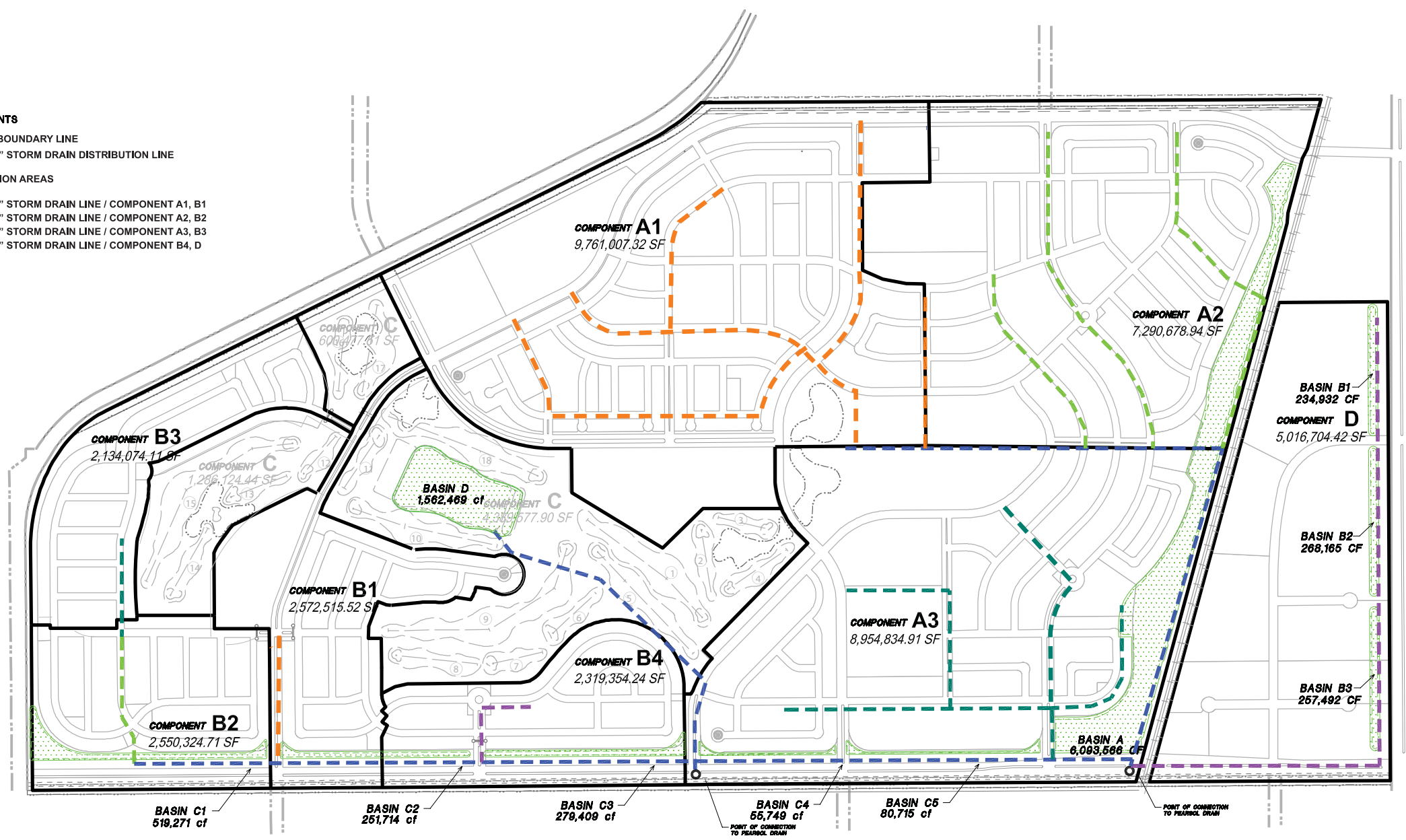
County of Imperial

Figure 6-2C
Components A3, B3 and D Wastewater Systems

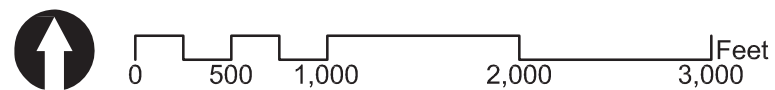
Rancho Los Lagos

This page intentionally left blank.

- LEGEND**
PHASE IMPROVEMENTS
- PHASE BOUNDARY LINE
 - MAIN 36" STORM DRAIN DISTRIBUTION LINE
 - DETENTION AREAS
 - MAIN 24" STORM DRAIN LINE / COMPONENT A1, B1
 - MAIN 24" STORM DRAIN LINE / COMPONENT A2, B2
 - MAIN 24" STORM DRAIN LINE / COMPONENT A3, B3
 - MAIN 24" STORM DRAIN LINE / COMPONENT B4, D



Source: NOLTE, 2006



P&D Consultants/EDAW

County of Imperial

Figure 6-3
Storm Drainage Master Plan

Rancho Los Lagos

This page intentionally left blank.

As shown in the Storm Drainage Master Plan on **Figure 6-3**, detention basins are proposed in the eastern portion of the Plan area along the railroad, in the southern portion of the Plan area along Lavender (Schartz) Road, and within portions of the golf course and various parks to reduce the threat of flooding due to capacity control at inputs to IID drains. The detention basins are sized to accommodate 100 percent of runoff produced in the Plan area during a 100-year/24-hour storm (assumed to be a total of three inches of rain). Typical cross sections representative of the basin designs are shown in **Figure 6-4**.

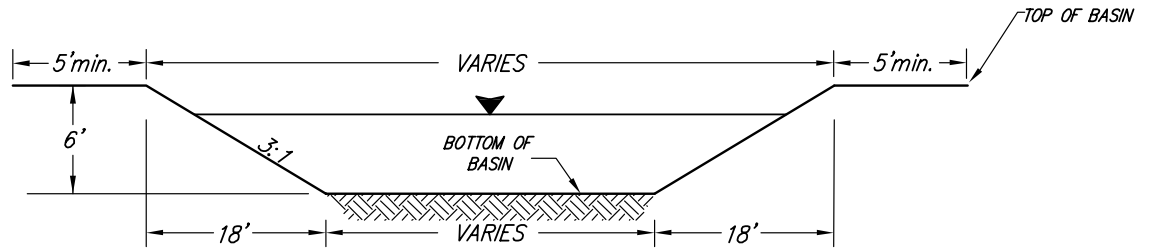
The detention basins would be required to drain all discharge into the IID drainage system within 72-hours of any given storm event; otherwise, implementation of mosquito abatement would be required. All storm drain systems shall be designed to the standards of the County of Imperial and the California Regional Water Quality Control Board. Some detention basins would be landscaped for joint use as open space as well as water runoff storage. In addition, a landscaping plan for the detention basins shall be approved by the County of Imperial. The Pearsol drain, on the southern border of the Plan area, receives and transports storm water collected by the Plan area's storm water piping and detention basin. Storm water runoff generated by the Plan area shall be connected at existing agricultural discharge locations via 12-inch pipes. However, the adjustment of a discharge location is permitted upon review and approval by IID. All storm water discharge connections shall comply with IID's "Water Requirements and Project Process".

6.5 Dry Utilities

6.5.1 Electricity

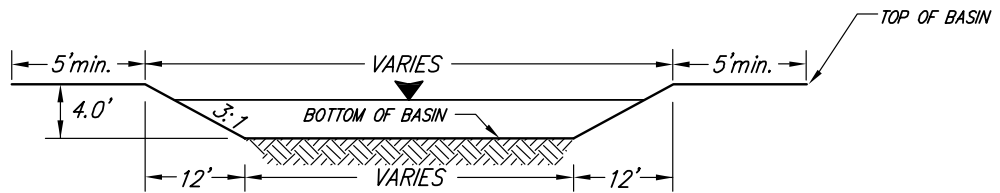
The Imperial Irrigation District (IID) provides electrical service to the Plan area. For the initial construction phases of the Rancho Los Lagos Specific Plan, electrical service will be provided by connecting to existing 92 kV transmission lines. The closest existing lines to the Specific Plan area parallel the Southern Pacific Railroad. Other existing IID transmission lines are located along the Rockwood Canal bordering the Plan area on the north and along Dogwood Road to the east.

An electrical substation may be required to accommodate the electrical service needs of subsequent phases of the Plan. If required, the substation is expected to be located on an approximate 2.7 acre site in the business park component of the Plan area, east of the Southern Pacific Railroad. According to IID requirements, the substation site would be served with two access roads and enclosed with a chain link fence. IID may negotiate with developers to share in the cost of upgrading the type of fencing for aesthetic purposes.



**6' TYPICAL DETENTION BASIN CROSS SECTION
(BASIN "A")**

NOT TO SCALE



4.0' TYPICAL DETENTION BASIN CROSS SECTION

NOT TO SCALE

Source: NOLTE, 2006

**Figure 6-4
Detention Basin Concepts**

All development within the Plan area will be consistent with IID substation policies and IID Energy Transmission Policy for construction and restrictions for use of IID energy transmission rights-of-way. New, on-site utilities within the Plan area will be undergrounded. If IID or any other agency determines that a new substation is unnecessary for service to the Plan area, the site will be absorbed into the business park component as general business use.

A reliable electrical system that meets the demands of the Rancho Los Lagos development would be assured through collaboration with IID during the planning, engineering and construction phases of the development. IID encourages the use of Energy Star products to promote energy conservation within the Rancho Los Lagos Specific Plan area.

6.5.2 Natural Gas

Natural gas is to be provided to the Rancho Los Lagos Specific Plan area by the Southern California Gas Company. An existing 3-inch size gas main, owned and operated by the Southern California Gas Company, currently runs beneath SR-86 near the intersection of Calle Estrella adjacent to the northwestern border of the Plan area. Delivery of natural gas service to individual projects within the Plan area would be reviewed by the Southern California Gas Company at the time such projects are proposed.

This page intentionally left blank.