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Attorneys for Liberty Utilities (Litchfield Park Water and Sewer), Corp.

ORIGINAL

BEFORE THE ARIZONA CORPORATION COMMISSION

IN THE MATTER OF THE APPLICATION
OF LIBERTY UTILITIES (LITCHFIELD
PARK WATER AND SEWER), CORP. FOR
A CERTIFICATE OF CONVENIENCE AND
NECESSITY TO PROVIDE WATER
UTILITY SERVICE IN MARICOPA
COUNTY, ARIZONA

DOCKET NO. W-01427A-14-0134

NOTICE OF ERRATA

Liberty Utilities (Litchfield Park Water and Sewer) Corp. ("Applicant"), an Arizona public service corporation, hereby files this Notice of Errata in the above-captioned matter. Exhibits 4 (Legal Description) and 5 (Master Water Report) contained errors. Applicant is filing new Exhibits 4 and 5 to replace the ones filed with the original application.

RESPECTFULLY SUBMITTED, this 19th day of May, 2014.

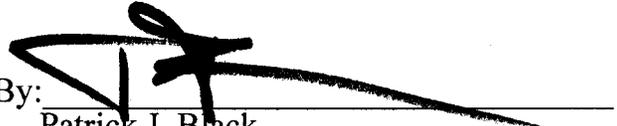
FENNEMORE CRAIG, P.C.

Arizona Corporation Commission

DOCKETED

MAY 19 2014

DOCKETED BY 

By: 

Patrick J. Black
Attorneys for Liberty Utilities (Litchfield
Park Water and Sewer) Corp.

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ORIGINAL and 13 copies filed
this 19th day of May, 2014 with:

Docket Control
Arizona Corporation Commission
1200 West Washington Street
Phoenix, Arizona 85007

By:  _____

9164863/035227.0035

1 APPLICATION OF
2 LIBERTY UTILITIES (LITCHFIELD PARK WATER AND SEWER) CORP.
3 FOR AN EXTENSION OF EXISTING CERTIFICATE OF CONVENIENCE
4 AND NECESSITY TO PROVIDE WATER UTILITY SERVICE
5 IN MARICOPA COUNTY, ARIZONA

6 **Exhibit 4**

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8 **(Legal Description of Requested Area)**
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Exhibit 4
REVISED 5-16-14

Legal Description
Liberty Utilities (Litchfield Park Water & Sewer) Corp.
Water CC&N Extension

That portion of Section 2, Township 2 North, Range 1 West of the Gila and Salt River Base and Meridian, Maricopa County, Arizona more particularly described as follows:

The Northeast Quarter of said Section 2;
EXCEPT the south 20.00 feet of said Northeast Quarter;

The East $\frac{1}{2}$ of the Northwest Quarter of said Section 2;
EXCEPT the south 20.00 feet of said Northwest Quarter, and;
the west 400.44 feet of the south 1,724.91 feet of said Northwest Quarter;

The Southeast Quarter of said Section 2;
EXCEPT the north 140.00 feet of said Southeast Quarter.

1 APPLICATION OF
2 LIBERTY UTILITIES (LITCHFIELD PARK WATER AND SEWER) CORP.
3 FOR AN EXTENSION OF EXISTING CERTIFICATE OF CONVENIENCE
4 AND NECESSITY TO PROVIDE WATER UTILITY SERVICE
5 IN MARICOPA COUNTY, ARIZONA

6 **Exhibit 5**

7 **(Master Water Report)**

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PRELIMINARY ENGINEERING REPORT WATER MASTER PLAN

**Marbella Ranch
Section 2, T2N, R1W
Maricopa County, Arizona**

**April 14, 2014
REVISED
May 16, 2014**

Prepared for:
TRS 8, LLC
18835 North Thompson Peak Parkway, Suite 215
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Prepared By:
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ARICOR
Water Solutions

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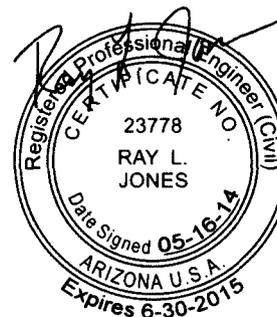
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Revisions:

May 16, 2014 – Report revised to correct location references. The correct location of project is Section 2, Township 2 North, Range 1 West. The original report referenced Range 1 East in error.

1. Executive Summary

Marbella Ranch is an approximately 365 acre property that will be provided water service by Liberty Utilities (Litchfield Park Water & Sewer) Corp. ("Liberty"). Liberty will file an application with the Arizona Corporation Commission to extend its Certificate of Convenience and Necessity ("CC&N") to include the Marbella Ranch project.

Marbella Ranch is an approximately 365 acre property under contract to TRS 8, LLC who will develop the Marbella Ranch project. Marbella Ranch will be developed in phases. Phase 1 of Marbella Ranch is located in the southern portion of the property and is planned for 600 single family homes. Phase 2 of Marbella Ranch is located in the northern portion of the property and is planned for 660 dwelling units and includes a 50.5 acre industrial parcel. The maximum number of dwelling units on the Property will not exceed 1,260 units.

Design criteria are in accordance with the requirements of Liberty as presented in Liberty's Development Guide for Maricopa County Properties dated October 22, 2009. Based on the design criteria, the facilities requirements are summarized as follows:

- Required Well Capacity – 1,030 gpm
- Required Storage Capacity – 593,370 gallons (operational) & 540,000 gallons (fire)
- Pumping Capacity – 1,030 gpm plus 3,000 gpm fire = 4,030 gpm

Liberty has verified that the wells, storage and booster pumping capacity at the Airline Reservoir site can meet the facilities requirements for Marbella Ranch and that the Airline Reservoir site will be the primary supply for Marbella Ranch. However, Liberty has indicated that it is planning to create a new pressure zone in the northern portion of its service area ("zone 2") and would like to expand its well field to supplement supply and pumping capability in the new pressure zone.

Liberty's existing distribution system will be extended approximately $\frac{3}{4}$ of a mile along El Mirage Rd. to the Marbella Ranch site. The on-site facilities will include a primary network of 12" diameter water lines supplemented by a secondary network of 8" diameter water lines. The remaining on-site water lines will be minimum 6" diameter lines. As requested by Liberty, TRS 8, LLC will provide two well sites for the development of two new groundwater wells on the Marbella Ranch site. The wells will be developed to provide a combined capacity of not less than 1,030 gpm, the projected maximum day for the project.

The proposed system meets the master planning criteria as established by Liberty. The system is able to adequately provide Peak Day, Peak Hour and Peak Day plus Fire Flow Demands. Flow and pressures throughout the system during all design conditions meet minimum pressure requirements.

2. Introduction

2.1 Objective

This preliminary engineering report will analyze the water facility requirements for the Marbella Ranch project. Marbella Ranch is an approximately 365 acre property within the City of Glendale strip annex and planning area but is actually part of unincorporated Maricopa County. Water service will be provided by Liberty Utilities (Litchfield Park Water & Sewer) Corp. ("Liberty"). Liberty will file an application with the Arizona Corporation Commission to extend its Certificate of Convenience and Necessity ("CC&N") to include the Marbella Ranch project. This report is being prepared in support of the CC&N application.

2.2 Project Location

The Marbella Ranch project is located on the El Mirage Road alignment between Glendale Avenue and Northern Avenue in Section 2, Township 2 North, Range 1 West. The project is within the City of Glendale strip annex and planning area but is actually part of unincorporated Maricopa County. Luke Air Force Base ("Luke") is located to the west of Marbella Ranch. The Luke Air Force Base ("Luke") Air Installation Compatible Use Zone ("AICUZ") runs along the northwestern portion of the property. See Figure 2.1.

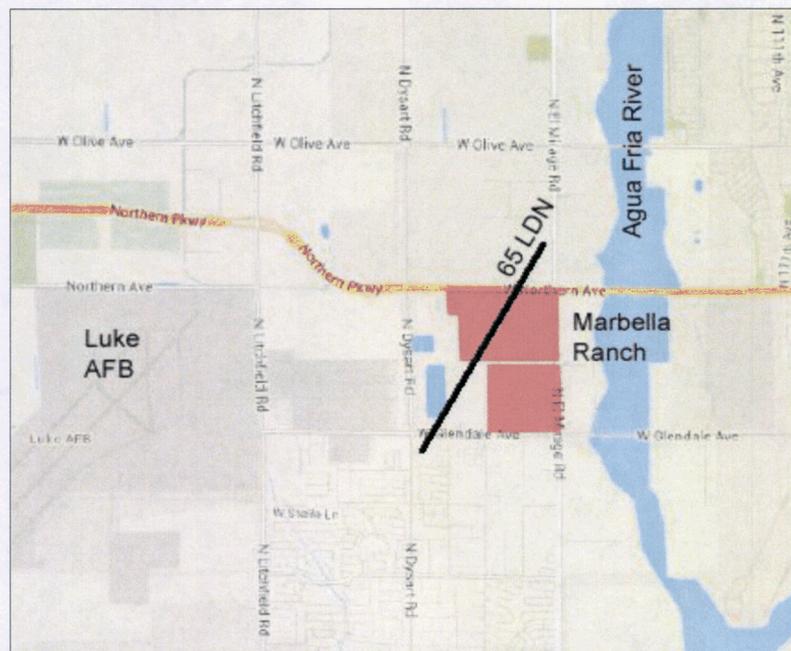


Figure 2.1 – Area Map

2.3 Topographic Conditions

The property ranges in elevation from approximately 1,086.5 ft at the northeastern corner of Marbella Ranch to a low of 1,060 ft at the southeastern corner of Marbella Ranch. Historic drainage is along a line from the center of the property at the north border through the

southeastern corner. This historic drainage has been cut-off by the Dysart Drain, which runs easterly through the center of the project. Accordingly, the northern portion of the property drains from both the east and west towards the historic drainage and then south into the Dysart Drain. The southern portion of the property drains along the historic drainage to the southeastern corner of the property.

2.4 Proposed Development

Marbella Ranch is an approximately 365 acre property currently owned by El Paso Natural Gas, LLC ("El Paso"). The Property is under contract to TRS 8, LLC who will develop the Marbella Ranch project. The Property is currently zoned Rural-43 by Maricopa County.

On March 3, 2014 TRS 8, LLC filed with Maricopa County Case CPA2014002 – Comprehensive Plan Amendment and Case Z2014011 – Rezoning Request. The requested plan amendment and rezoning request is for a Multiple-Family Residential (R-5) Residential Unit Plan of Development ("RUPD") zoning district on the property outside of the AICUZ line for single family detached and attached residential subdivisions with a variety of lot widths, as well as the potential for multi-family residential (apartment units). The maximum number of dwelling units on the Property will not exceed 1,260 units. The portion of the property within the AICUZ lines is planned for open space or industrial uses. Luke supports the Rezoning Application and Comprehensive Plan Amendment.

Marbella Ranch will be developed in phases. Phase 1 of Marbella Ranch is located in the southern portion of the property and is planned for 600 single family homes. Construction of the first phase of the development is scheduled to begin in 2016 and is expected to take approximately five years to build-out.

Phase 2 of Marbella Ranch is located in the northern portion of the property and is planned for 660 dwelling units and includes a 50.5 acre industrial parcel. The current plan is for 300 single family homes and 360 apartment units in the residential portion of Phase 2. However, the R-5, RUPD zoning provides flexibility in regard to what type of residential units are constructed. Accordingly, this report will consider all units in Phase 2 to be single family homes so that projected demand is not understated.

Construction of Phase 2 of the development is expected to begin about two years after the start of Phase 1 and is expected to take approximately five years to build-out. Overall project build-out is expected to take approximately seven years with home sales estimated at 200 units per year.

Figure 2.2 is a development map for Marbella Ranch.

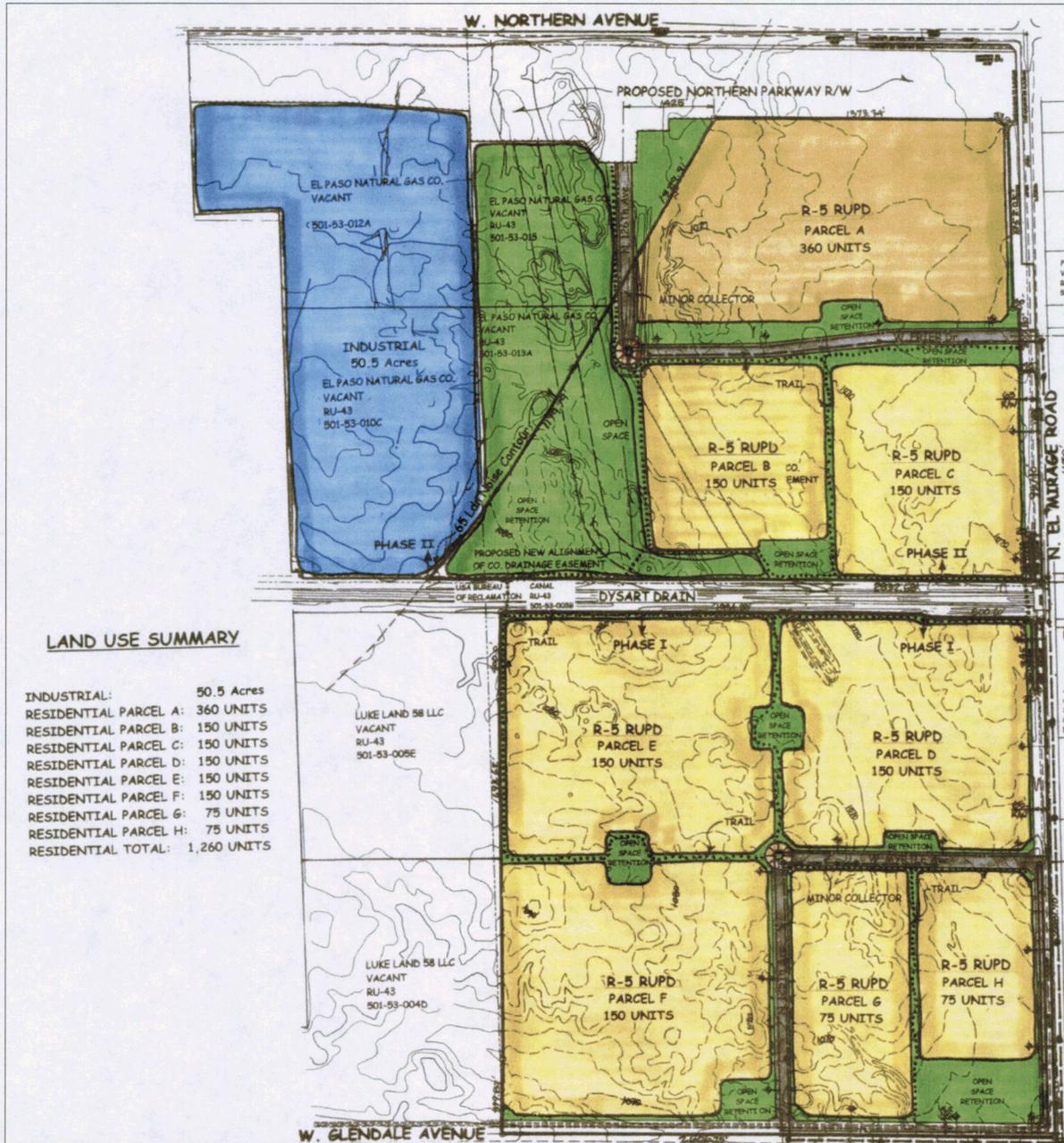


Figure 2.2 – Marbella Ranch Development Map

3. Design Criteria

All design criteria are in accordance with the requirements of Liberty as presented in Liberty's *Development Guide for Maricopa County Properties* dated October 22, 2009.

Liberty specifies the demand criteria as shown in Table 3.1.

Table 3.1 – Liberty Demand Criteria

Land Use	Ave. Day Demand (gpcd)	Capita/DU	Max Day Peaking Factor	Peak Hour Peaking Factor
Single Family	150	3.2	1.8	3.0
Multi Family	110	2.0	1.8	3.0
Commercial	1,700 gpd/acre	n/a	1.8	3.0
Developed Open Space	1,800 gpd/acre	n/a	n/a	n/a

Liberty establishes the additional water system criteria presented in Table 3.2.

Table 3.2 – Additional Water System Criteria

Category	Criteria
Minimum Pressures	55 psi static 40 psi @ peak hour 20 psi @ max day + fire
Maximum Pressures	90 psi static unless individual pressure reducing valve installed on customer side of meter and approved by Liberty
Velocity and Headloss	8 fps maximum velocity (distribution system) 2 fps min. and 6 fps max (well transmission)
Fire Flows	Residential ≤3,600 sq. ft – 1,500 gpm for 2 hours Residential >3,600 sq. ft – Per 1997 UFC Commercial – 3,000 gpm for 3 hours
Storage Requirements	Equalization – 30% of Maximum Day Emergency Reserve – 10% of Maximum Day
Booster Pumping	Firm Capacity – Greater of Max day + fire or peak hour demand
Well Capacity	Firm Capacity – Equal to Maximum day demand

The water distribution system design for Marbella Ranch was based on the design criteria as provided by Liberty. However, since Liberty does not specify a demand for industrial uses, after consultation with Liberty, a demand of 850 gpd/acre was selected as appropriate for the planned industrial uses in Marbella Ranch. Table 3.3 summarizes the water master planning factors utilized for Marbella Ranch.

Table 3.3 - Summary Water Master Planning Factors

Land Use	Pop Density (capita/DU)	Population and Demand Factors			Fire Requirement	Peaking Factors		
		Gallons Per Capita	Gallons Per	Unit		1.8 = Peak Day Factor	Peak Day = Peak Day Factor * Avg Day	
SF	3.2	150	-	Dwelling Unit	Residential	3.0 = Peak Hour Factor	Peak Hour = Peak Hour Factor * Avg Day	
MF	2.0	110	-	Dwelling Unit	Residential	Storage Factors		
COMM	-	-	1,700	Acre	Commercial	40% = Equalization + Emergency Factor		
IND	-	-	850	Acre	Commercial	Operational = Equalization Factor * Peak Day		
OS	-	-	1,800	Acre	n/a	Fire = Fire Flow * Duration		
						Fire Flows		
						Requirement	Flow	Duration
						Commercial	3,000 gpm	3 hours
						Residential	1,500 gpm	2 hours
						N/A	0 gpm	0 hours

4. Demands

Using the established criteria, the four following demand scenarios are considered.

- Average Day Demand – This demand condition represents the annual average daily use.
- Maximum Day Demand – This demand condition represents the peak water use day for an average year.
- Maximum Day with Fire Flow – This demand condition represents a simultaneous fire flow and peak day demand flow.
- Peak Hour demand – This demand condition represents the peak water use hour on the Peak Day of an average year.

Table 4.1 presents the land use and demand factors and Table 4.2 presents the resulting demands and facilities requirements.

Table 4.1 - Land Use and Demand Factors

Parcel	Land Use	Acres	Residential Dwelling Units	Other Demand Units	Pop Density (capita/DU)	Population	Demand Per Capita	Demand Per Other
Phase 1								
D	SF	32.0	150		3.2	480	150	-
E	SF	34.5	150		3.2	480	150	-
F	SF	34.0	150		3.2	480	150	-
G	SF	17.0	75		3.2	240	150	-
H	SF	12.0	75		3.2	240	150	-
Open Space	OS	12.0	-		0.0	-	-	1,800
ROW	OS	5.0	-		0.0	-	-	1,800
		146.5	600			1,920		
Phase 2								
A	SF	45.0	360		3.2	1,152	150	-
B	SF	22.0	150		3.2	480	150	-
C	SF	20.0	150		3.2	480	150	-
Industrial	IND	50.5	-		0.0	-	-	850
Open Space	OS	75.0	-		0.0	-	-	1,800
ROW	OS	6.0	-		0.0	-	-	1,800
		218.5	660			2,112		
		365.0	1,260			4,032		

Table 4.2 - Estimated Demand and Facilities Requirements

Parcel	Demands			Demands				Storage	
	Avg Day	Peak Day	Peak Hour	Avg Day	Peak Day	Fire	Peak Hour	Operational	Fire
	(gpd)			(gpm)				(gallons)	
Phase 1									
D	72,000	129,600	216,000	50.0	90.0	1,500	150.0	51,840	180,000
E	72,000	129,600	216,000	50.0	90.0	1,500	150.0	51,840	180,000
F	72,000	129,600	216,000	50.0	90.0	1,500	150.0	51,840	180,000
G	36,000	64,800	108,000	25.0	45.0	1,500	75.0	25,920	180,000
H	36,000	64,800	108,000	25.0	45.0	1,500	75.0	25,920	180,000
Open Space	21,600	38,880	64,800	15.0	27.0	-	45.0	15,552	-
ROW	9,000	16,200	27,000	6.3	11.3	-	18.8	6,480	-
Phase 2									
A	172,800	311,040	518,400	120.0	216.0	1,500	360.0	124,416	180,000
B	72,000	129,600	216,000	50.0	90.0	1,500	150.0	51,840	180,000
C	72,000	129,600	216,000	50.0	90.0	1,500	150.0	51,840	180,000
Industrial	42,925	77,265	128,775	29.8	53.7	3,000	89.4	30,906	540,000
Open Space	135,000	243,000	405,000	93.8	168.8	-	281.3	97,200	-
ROW	10,800	19,440	32,400	7.5	13.5	-	22.5	7,776	-
TOTALS									
	824,125	1,483,425	2,472,375	572	1,030	3,000	1,717	593,370	540,000
						Peak Day + Fire:	4,030	Total Storage:	1,133,370

Based on table 4.2, the facilities requirements are summarized as follows:

- Required Well Capacity – 1,030 gpm
- Required Storage Capacity – 593,370 gallons (operational) & 540,000 gallons (fire)
- Pumping Capacity – 1,030 gpm plus 3,000 gpm fire = 4,030 gpm

5. Existing Facilities/Conditions

Liberty's existing service area consists of approximately 21 square miles located southwest of Marbella Ranch and north of Interstate Highway 10. Liberty provides water service to communities within the City of Litchfield Park, City of Goodyear, City of Avondale, and some unincorporated areas of Maricopa County.

Liberty's water system consists of 12 wells, three arsenic treatment facilities, two storage tanks, three booster systems and a distribution system serving over 17,000 customers. The wells have a combined capacity in excess of 13,000 gpm. A total of 10.6 million gallons of storage and nearly 30,000 gpm of booster capacity is provided from two large water plant sites within the existing water system. The system is currently operated as a single pressure zone with a hydraulic grade line of 1,187 feet.

The Airline Reservoir site is located approximately $\frac{3}{4}$ of a mile south of Marbella Ranch and will be the primary source of water for Marbella Ranch. The Airline site contains 4.3 million gallons of storage, 16,000 gpm of pumping capacity and is fed by five wells with combined capacity of 6,945 gpm.

Liberty has verified that the wells, storage and booster pumping capacity at the Airline Reservoir site can meet the facilities requirements for Marbella Ranch. However, Liberty has indicated that it is planning to create a new pressure zone in the northern portion of its service area ("Zone 2") and would like to expand its well field to supplement supply and pumping capability in the new pressure zone. Zone 2 will operate at a hydraulic grade line of 1,222 feet.

6. Proposed Facilities

The Airline Reservoir site will be the primary supply for Marbella Ranch. Marbella Ranch will be fed from the planned Zone 2 pressure zone at a hydraulic grade line of 1,222 feet.

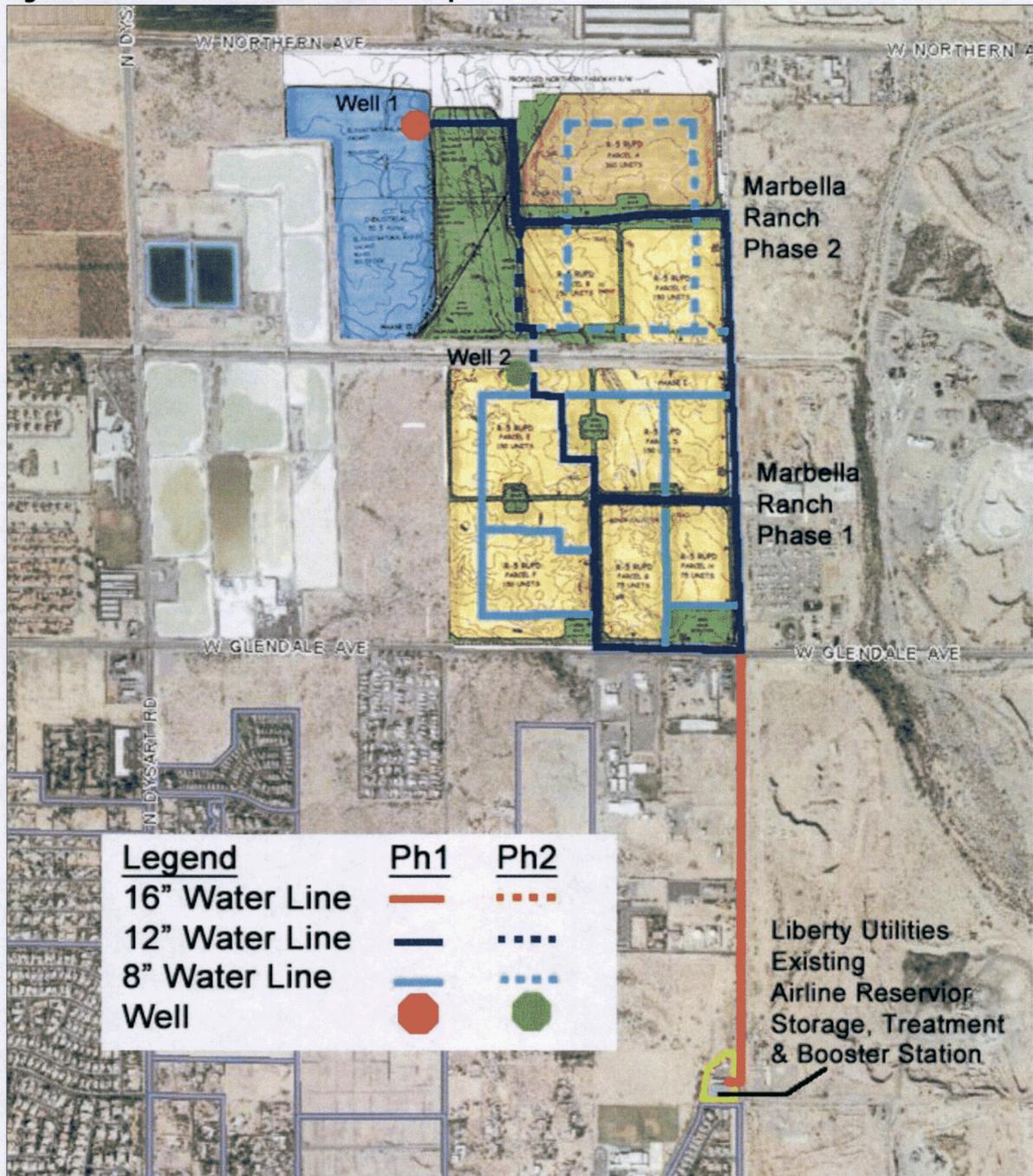
Liberty's existing distribution system will be extended approximately $\frac{3}{4}$ of a mile along El Mirage Rd. to the Marbella Ranch project. The on-site facilities will include a primary network of 12" diameter water lines supplemented by a secondary network of 8" diameter water lines. The remaining on-site water lines will be minimum 6" diameter lines.

As requested by Liberty, TRS 8, LLC will provide two well sites for the development of two new groundwater wells on the Marbella Ranch site. Well No. 1 will be developed in Phase 1 with well No. 2 being developed with Phase 2. The wells will be developed to provide a combined capacity of not less than 1,030 gpm, the projected maximum day for the project.

Figure 6.1 provides a map of the planned improvements and an engineer's estimate of cost for the facilities is provided in appendix 1.

The hydraulic grade line of 1,222 feet will provide a static pressure of 58 psi at the high point in the development and 70 psi at the low point in the development. Preliminary modeling of fire flows in the planned industrial parcel shows expected head loss of 27.5 psi at a 3,000 gpm fire flow. Using the high elevation of 1,085 feet in the industrial parcel, the predicted fire flow pressure is 31.8 psi. Accordingly, the proposed distribution system will meet Liberty's criteria for system pressure under all flow conditions.

Figure 6.1 – Planned Water Facilities Map



7. Summary/Conclusions

Based on the analysis presented in this report, the existing Liberty water distribution system can be extended to provide service to Marbella Ranch. The proposed system meets the water master planning criteria as established by Liberty. Storage pumping requirements will be met from the existing Airline Reservoir site with supplemental supply and pumping provided by two new wells on the Marbella Ranch project site. The system is able to adequately provide Peak Day, Peak Hour and Peak Day plus Fire Flow Demands. Flow and pressures throughout the system during all design conditions meet minimum pressure requirements.

APPENDIX 1

**Liberty Utilities (Litchfield Park Water & Sewer) Corp.
Marbella Ranch - Water Facilities
Estimate of Construction Cost**

4/14/2014
Prepared by ARICOR Water Solutions

Item Description Phase 1	Quantity	Units	Unit Price	Amount	NAR/JC	Detail Plant Account By Year								
						Year 1	Year 2	Year 3	Year 4	Year 5	Year 6			
Off-Site El Mirage Water Line (South of Glendale)														
16" DIP	4,080	lf	\$ 90.00	\$ 365,400	331	\$ 365,400								
16" Gate Valve B&C	9	ea	4,000.00	36,000	331	36,000								
Air Relief Valve in Vault w/bollards, valves etc.(ARV-complete)	2	ea	4,500.00	9,000	331	9,000								
Allowance for Special Construction	1	lot	50,000.00	50,000	331	50,000								
Pavement Replacement	500	sy	30.00	15,000	331	15,000								
Connection within Airline Reservoir Site	1	lot	25,000.00	25,000	331	25,000								
Engineering & Permits	1	lot	12%	57,000	331	57,000								
Contingency	1	lot	5%	24,000	331	24,000								
Total				\$ 581,400		\$ 581,400								
Off-Site Water Line - From El Mirage and Glendale to Well No. 1														
12" DIP (in El Mirage Rd.)	4,000	lf	\$ 65.00	\$ 260,000	331	\$ 260,000								
Dyestart Drain Crossing (Cased Overhead)	150	lf	200.00	30,000	331	30,000								
12" DIP (within Project Site)	3,625	lf	45.00	163,125	331	163,125								
12" Gate Valve B&C	15	ea	3,500.00	52,500	331	52,500								
Fire Hydrant Complete (on El Mirage)	6	ea	5,500.00	33,000	335	33,000								
Air Relief Valve in Vault w/bollards, valves etc.(ARV-complete)	2	ea	4,500.00	9,000	331	9,000								
Pavement Replacement	90	sy	30.00	2,700	331	2,700								
Engineering & Permits	1	lot	12%	66,039	331	66,039								
Contingency	1	lot	5%	27,516	331	27,516								
Total				\$ 643,880		\$ 643,880								
Well Site No. 1														
Well Drilling Complete	1	lot		\$ 667,000	307	\$ 667,000								
Well Slep	1	ea		5,000	307	5,000								
Extend Power to Site	1	lot		30,000	304	30,000								
Site Work	1	lot		25,000	304	25,000								
Well Pump	1	ea		120,000	311	120,000								
Piping & Valves	1	lot		60,000	311	60,000								
Hydrotank	1	ea		40,000	311	40,000								
Electrical	1	lot		40,000	311	40,000								
Genset	1	ea		70,000	310	70,000								
Engineering & Permits	1	lot	15%	61,500	311	61,500								
Contingency	1	lot	5%	53,850	311	53,850								
Total				\$ 1,192,350		\$ 1,192,350								
TOTAL OFF-SITE				\$ 2,417,630		\$ 2,417,630								
On-Site Water Backbone Water Lines														
12" DIP (in Glendale Ave.)	1,320	lf	\$ 65.00	\$ 85,800	331	\$ 42,900	\$ 42,900							
12" DIP (within Project Site)	4,620	lf	45.00	207,900	331	103,950	103,950							
12" Gate Valve B&C	12	ea	3,500.00	42,000	331	21,000	21,000							
Fire Hydrant Complete	8	ea	4,000.00	32,000	335	16,000	16,000							
Pavement Replacement	45	sy	30.00	1,350	331	675	675							
Engineering & Permits	1	lot	12%	44,286	331	22,143	22,143							
Contingency	1	lot	5%	18,453	331	9,227	9,227							
Total				\$ 431,789		\$ 215,894	\$ 215,895							
On-Site Water System (within subdivisions)														
8" DIP	10,560	lf	\$ 32.00	\$ 337,920	331	\$ 84,480	\$ 84,480							
6" DIP	16,440	lf	23.00	378,120	331	94,530	94,530							
8" Gate Valve B&C	21	ea	2,300.00	48,300	331	12,075	12,075							
6" Gate Valve B&C	32	ea	1,800.00	57,600	331	14,400	14,400							
Fire Hydrant Complete	60	ea	3,500.00	210,000	335	52,500	52,500							
Service Line	600	ea	590.00	354,000	333	30,000	30,000							
Meter	600	ea	200.00	120,000	334	30,000	30,000							
Engineering & Permits	1	lot	12%	177,833	331	44,458	44,458							
Contingency	1	lot	5%	74,097	331	18,524	18,524							
Total				\$ 1,733,870		\$ 433,467	\$ 433,467							
TOTAL ON-SITE				\$ 2,165,656		\$ 433,467	\$ 433,467							
TOTAL PHASE 1				\$ 4,583,289		\$ 4,583,289								

Liberty Utilities (Litchfield Park Water & Sewer) Corp.
Marbella Ranch - Water Facilities
Estimate of Construction Cost

4/14/2014

Prepared by ARICOR Water Solutions

Item Description	Quantity	Units	Unit Price	Amount	NAR/LC	Detail Plant Plant Account By Year									
						Year 1	Year 2	Year 3	Year 4	Year 5	Year 6				
Phase II															
Well Site No. 2															
Well Drilling Complete	1	lot		\$ 667,000	307				\$ 667,000						
Well Slab	1	ea		5,000	307				5,000						
Extend Power to Site	1	lot		10,000	304				10,000						
Site Work	1	lot		15,000	304				15,000						
Well Pump	1	ea		120,000	311				120,000						
Piping & Valves	1	lot		80,000	311				80,000						
Hydrotank	1	ea		40,000	311				40,000						
Electrical	1	lot		40,000	311				40,000						
Genset	1	ea		70,000	310				70,000						
Engineering & Permits	1	lot	15%	57,000	311				57,000						
Contingency	1	lot	5%	52,350	311				52,350						
Total				\$ 1,156,350					\$ 1,156,350						
TOTAL OFF-SITE				\$ 1,156,350					\$ 1,156,350						
On-Site Water Backbone Water Lines															
12" DIP	1,500	lf	\$ 45.00	\$ 67,500	331			\$ 67,500							
Dysart Drain Crossing (Cased Overshoot)	150	lf	200.00	30,000	331			30,000							
12" Gate Valve B&C	4	ea	3,500.00	14,000	331			14,000							
Fire Hydrant Complete	6	ea	4,000.00	24,000	335			24,000							
Air Relief Valve in Vault w/bollards, valves etc.(ARV-complete)	2	ea	4,500.00	9,000	331			9,000							
Engineering & Permits	1	lot	12%	17,340	331			17,340							
Contingency	1	lot	5%	7,225	331			7,225							
Total				\$ 168,065				\$ 168,065							
On-Site Water System (within subdivisions)															
8" DIP	7,920	lf	\$ 32.00	\$ 253,440	331			\$ 63,360	\$ 63,360	\$ 63,360	\$ 63,360	\$ 63,360	\$ 63,360	\$ 63,360	\$ 63,360
6" DIP	21,780	lf	23.00	500,940	331			125,235	125,235	125,235	125,235	125,235	125,235	125,235	125,235
8" Gate Valve B&C	16	ea	2,300.00	36,800	331			9,200	9,200	9,200	9,200	9,200	9,200	9,200	9,200
6" Gate Valve B&C	43	ea	1,800.00	77,400	331			19,350	19,350	19,350	19,350	19,350	19,350	19,350	19,350
Fire Hydrant Complete	66	ea	3,500.00	231,000	335			57,750	57,750	57,750	57,750	57,750	57,750	57,750	57,750
Service Line	660	ea	560.00	369,600	333			90,750	90,750	90,750	90,750	90,750	90,750	90,750	90,750
Meter	660	ea	200.00	132,000	334			33,000	33,000	33,000	33,000	33,000	33,000	33,000	33,000
Engineering & Permits	1	lot	12%	191,350	331			47,837	47,837	47,837	47,837	47,837	47,837	47,837	47,837
Contingency	1	lot	5%	79,729	331			19,932	19,932	19,932	19,932	19,932	19,932	19,932	19,932
Total				\$ 1,865,659				\$ 466,414	\$ 466,414	\$ 466,414	\$ 466,414	\$ 466,414	\$ 466,414	\$ 466,414	\$ 466,414
TOTAL ON-SITE				\$ 2,034,724				\$ 466,414	\$ 466,414	\$ 466,414	\$ 466,414	\$ 466,414	\$ 466,414	\$ 466,414	\$ 466,414
TOTAL PHASE 2				\$ 3,191,074											