

WATER SERVICE IMPACT STUDY

6001 E Cactus Wren Road Lot Split

LDG PROJECT #1605053

Prepared for:

Ms. Susan Shultz 6001 E Cactus Wren Road Paradise Valley, Arizona 85253

Submitted to:

Town of Paradise Valley 6401 E. Lincoln Drive Paradise Valley, Arizona 85253

Prepared by:

Land Development Group, LLC 8808 N Central Ave., Ste 288 Phoenix, Arizona 85020 Contact: Nick Prodanov, PE, PMP P: 602 889 1984



June 27th, 2017

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1. INTRODUCTION

This Water Service Impact Study and related design have been developed in accordance with the current Town of Paradise Valley Design Standards, Codes and adopted Ordinances. It provides engineering analysis and assessment of the required water services and fire flow demand for the proposed lot split development.

The subject property is located at 6001 E Cactus Wren. The 2.35 acre parcel is an unsubdivided land, being a portion of the NW ¼ of the SW ¼ of the NE ¼ of Section 9, T2N, R4E. The property is bounded by 60th Street (west), Cactus Wren (north), Cardinal Drive (east). It is zoned R-43, which in accordance with the Town of Paradise Valley Zoning Ordinance allows for one dwelling unit per acre density. There is an existing 7,337 s.f. house, built in 1957, a guesthouse and a barn. Refer to Appendix A-1 – Vicinity Map.

As a part of the project development process, a lot split plat map subject to the Town of Paradise Valley review and approval is prepared. The owner is proposing to split the parcel into two lots. The prepared lot split map defines the new property divider line, location and distances of new building setback lines and public utility easements. Both lots will exceed the minimum required area of 1 acre. The existing main residence will remain as is, whereas the existing guesthouse and barn will be demolished to provide compliance with the Town of Paradise Valley Code.

The site is located within the EPCOR water and Town of Paradise Valley sewer service areas. There is an existing 6" ACP water line that runs in 73rd Street. There is an existing 6" water main in 60th and a 12" water main Cactus Wren. There is an 8" sewer line that runs in Cactus Wren.

The site's existing terrain slopes southeasterly at a rate of 1.9% and is sparsely vegetated with native trees. There are washes running through the property. On-site stormwater runoff generated by 100-year storm will be retained on-site as required.

2. DOMESTIC WATER AND FIRE SUPPRESSION SYSTEM

There is an existing water service line and water meter near the southwest property corner tapped off the existing 6" ACP line in 60th Street, which supplies domestic water to the existing residence. A new water service line and a water meter, sized in accordance with the currently adopted Plumbing Code will be installed near the northeast property corner and will be tapped off the 12" water main in Cactus Wren. A new sanitary sewer connection will service the new parcel off the sewer main in Cactus Wren. Considering the existing grades and invert elevations of the sewer, a lift station may be required in order to connect to the existing sewer main.

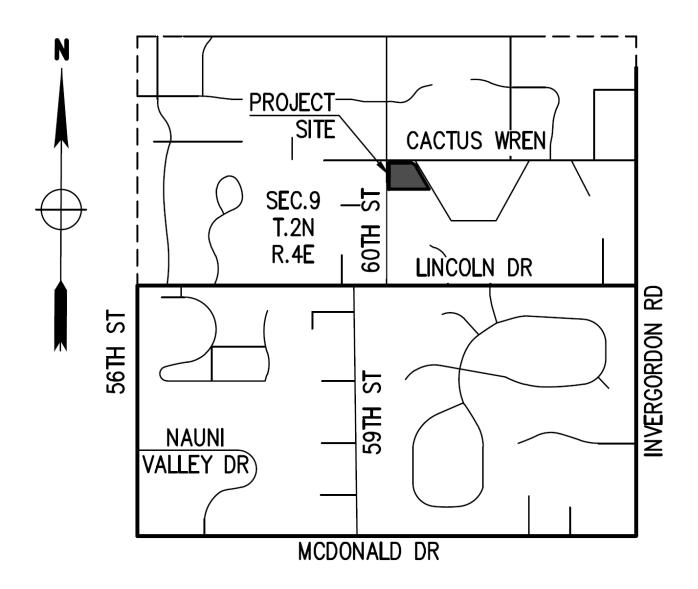
The fire hydrant coverage for this site is provided by an existing fire hydrant located 48 feet southerly from the southwest property corner, east side of 60th Street, and an existing fire hydrant located 193 feet easterly from the northeast corner of the site, north side of Cactus Wren.

Fire flow test was conducted on June 27th, 2017 by Grantham Design, LLC and witnessed by EPCOR representative. Based on the results of the fire flow test, the existing water infrastructure is capable of suppling the required fire flow protection per the Town Code 13.1.6 (1,500 gpm at 20 psi). Fire sprinklers for the new residence will be fed off the domestic water service.

3. REFERENCES

- Town of Paradise Valley Design Standards & Policies.
- 2015 International Fire Code, Appendix B, Fire Flow Requirements for Buildings.

APPENDIX A-1 Vicinity Map



APPENDIX A-2 Water Flow Test

Hydrant Flow Test Report

Test Date 06/27/2017

Test Time 8:10 am

Location

Tested by

6001 E. CACTUS WREN ROAD, PARADISE VALLEY, AZ.

GRANTHAM DESIGN, LLC.

<u>Notes</u>

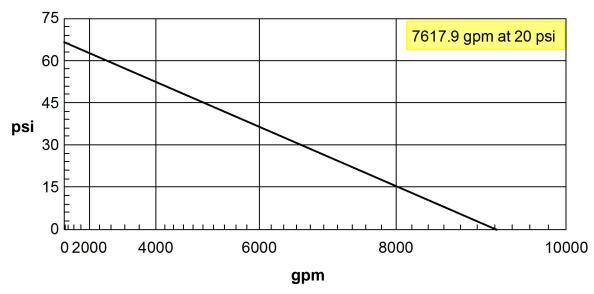
Read Hydrant

67 psi static pressure 66 psi residual pressure 2 ft hydrant elevation

Flow Hydrant(s)

Outlet	Elev	Size	С	Pitot Pressure	Flow
#1	2	2.5	.9	25	950.6 gpm

Flow Graph



Disclaimer: The fire hydrant flow test results can vary based on time, date, seasonal fluctuation and other circumstances. Verify water pressures prior/during any project. Grantham Design, LLC. will not be held responsible for any changes in the results.





APPENDIX A-3Will Serve Letter



2355 West Pinnacle Peak Road, Suite 300 Phoenix, AZ 85027 USA epcor.com

June 1st, 2017

Susan Shultz 6001 E Cactus Wren Road Paradise Valley, AZ 85253

Sent via e-mail to: dustin@ldgeng.com

Re: Will-Serve Letter for Water Service

APN 169-37-009

Dear Susan Shultz;

This letter is in response to LDG Engineering's request to EPCOR Water Arizona Inc. ("EPCOR") regarding EPCOR's willingness to provide water service to APN 169-37-009 (the "Development"). The Development is a residential project that will split one residential lot creating two lots, located in the Town of Paradise Valley as shown in Exhibit A. EPCOR provides the following information for your consideration:

- EPCOR has confirmed that the Development is located within the area encompassed by EPCOR's Certificate of Convenience & Necessity ("CC&N") as issued by the Arizona Corporation Commission.
- 2. Based on water service currently provided by EPCOR in the CC&N, EPCOR will have adequate water capacity for normal use in the Development. Please note that EPCOR does not guarantee the adequacy of its water capacity for fire protection.
- 3. Developer will be required, as a condition to EPCOR providing water service to the Development, to pay all required fees pursuant to EPCOR's then-current tariffs.

This letter does not independently create any rights or obligations in either developer or EPCOR, and is provided to developer for information only.

For additional information, please contact me at (623) 445-2495 or at jvig@epcor.com

Sincerely,

Josh Vig

Project Manager

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EXHIBIT A

LOT SPLIT MAP CACTUS WREN **REDWING ESTATES II** SEC.9 IN T.2N E R.4E S BEING A LOT SPLIT OF PARCEL NO. 169-37-009 LEGEND **ABBREVIATIONS** LOCATED IN A PORTION OF THE NW 1/4 OF THE SW 1/4 OF THE NE 1/4 OF SECTION 9. T.2N. R.4E SECTION CORNE OF THE GILA & SALT RIVER BASE AND MERIDIAN, MARICOPA COUNTY, ARIZONA ಶ್ 1/4 QUARTER OWNER: SUSAN SHULTZ BRASS CAP IN HANDHOLF DRAINAGE EASEMENT RESTRICTIONS DRAINAGE EASEMENT RESTRICTIONS PRISANITY DRA \$8,04-8.01 (c), NO SCHOINS 64-4 (c) (f), 6-7-4 (T. 30), AND 6-3-8 of THE CODE OF GROWNACES OF THE OTHER OF PARADOSE VALLEY DRAINAGE EXAMENTS ARE FOR THE OTHER OF THE CODE OF THE CODE OF GROWNACES OF THE OTHER OF THE CODE OF THE CODE OF THE CODE OF THE OTHER OF THE CODE OF THE CODE OF THE CODE OF THE COSSINGET THE FLOW OF SUCH WATERS, SHALL BE CONSTRUCTED. 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THENCE CONTINUING ALONG MONUMENT LINE OF CACTUS WREN ROAD ____ FASEMENT LINE NORTH 90"00"00" EAST, A DISTANCE OF 255.76 FEET TO A POINT; NORTH 90"00"00" EAST, A DISTANCE OF 255.76 FEET TO A POINT; BEGINNING AT THE NORTHWEST CORNER OF THE NORTH HALF OF THE SOUTH HALF OF THE NORTHEAST QUARTER OF SECTION 9; MONUMENT LINE THENCE LEAVING SAID MONUMENT LINE, SOUTH 00'00'00" WEST, A DISTANCE OF 34.31 FEET, TO THE NORTHEASTERLY PROPERTY CORNER ALSO BEING THE TRUE POINT OF BEGINNING; THENCE LEAVING SAID MONUMENT LINE, SOUTH 00'00'00" WEST, A DISTANCE OF 34.31 FEET, TO THE NORTHEASTERLY PROPERTY CORNER ALSO BEING THE TRUE POINT OF BEGINNING; THENCE SOUTH O DEGREES 04 MINUTES WEST ALONG THE WEST LINE OF SAID NORTH HALF OF THE SOUTH HALF OF THE NORTHEAST QUARTER OF SAID SECTION 9, A DISTANCE OF 322 FEET; AREAS LOT 2: AC.) FLOOR AREA RATIO: 4,892 / 52,640 = 9.29% THENCE SOUTH 18'49'00" WEST, A DISTANCE OF 303.93 FEET: THENCE SOUTH 18'49'00" WEST, A DISTANCE OF 303.93 FEET: THENCE EAST 33 FEET TO TRUE POINT OF BEGINNING; THENCE NORTH 90"00"00" WEST, A DISTANCE OF 133.10 FEET; THENCE NORTH 90"00"00" EAST, A DISTANCE OF 306.51 FEET; THENCE FAST 431 62 FFFT DEDICATION THENCE NORTH 30'00'00" WEST, A DISTANCE OF 275.64 FEET; THENCE NORTH 00'04'00" EAST, A DISTANCE OF 289.00 FEET: LOT 2: 49,710 S.F. (1.14 AC.) THENCE NORTH 30 DEGREES 00 MINUTES WEST 275.97 FEET: INDIAN BEND RD THENCE CONTINUING ALONG SAMP PROPERTY LINE ALSO BEING THE SOUTHERLY RIGHT OF WAY CURVE OF CACTUS WEEN ROAD, HANNIG A RADIUS OF TROOD FEET, A CONTINUING ANGIE OF SOSYO", A TANCENT LENGTH OF 47.61 FEET, THE CHORD OF WHICH BEARS SOUTH SSTIP 25.7 FEET, FOR AN ARC LENGTH OF 88.87 FEET, TO THE MORTHAGSTERLY PROPERTY CORNER; BEAN THE TRUE FORM TO TO THE MORTHAGSTERLY PROPERTY CORNER; BEAN THE TRUE FORM TO THENCE NORTH 90000'00" FAST, A DISTANCE OF 214.99 FFFT-THENCE 104.72 FEET ALONG THE ARC OF A CURVE TO THE LEFT HAVING A CENTRAL ANGLE OF 60 DEGREES 00 MINUTES, A TANGENT OF 57.74 ZONING COUNTY OF MARICOPA THEMCE CONTINUING ALONG SAID PROPERTY LINE ALSO BEING THE SOUTHERLY RIGHT OF WAY CURVE OF CACTUS WEDN ROAD, HANNING A ROUNS OF 100.0 FEET, A CONTRAL ANGLE OF 900°55.4, TANGENT LINCHLY OF 7.95 FEET, THE CHORD OF WHICH BEARS SOUTH 857460° ESST, A DISCHOLOF OF 15.86 FEET, TO PER AN APIC LINCHLY OF 15.87 FEET, TO THE NORTHEASTERLY PROPERTY CORNER; BEING THE TRUE POINT OF BETTIMENT. FFFT AND A RADIUS OF 100 FFFT: KNOW ALL MEN BY THESE PRESENTS: THENCE WEST 186.69 FEET: SIZAN SHUTZ, AS LEGAL OMNER OF SAD REAL PROFERTY, INAS SUBDIVIDED PARCE, NO. 189-37-509, MARIOCPA COURTY RECORDS, LOCATED WHITHIN THE WORTHERS CHARITER OF SCHOOL NO. 1900SEP 2 HORNING, ANGLE 4 AND LOCK THE NAME OF THE WORTH OF THE NAME OF THE STEP FORTH THE LOCATION AND ONES THE DUBSIONS OF THE COST AND THESE TO SOMETHING NAME AND THAT DEAD HOR NAME OF THE NAME OF SURVEY REFERENCES WARRANTY DEED RECORDED IN DOC. NO 1987-0751160, M.C.R. RESOLUTION OF ABANDOMENT NUMBER 663 RECORDED IN REC NO. 91-082386, M.C.R. TITLE REPORT FILE NO.: 82150405-082-MRE CONTAINING 49 710 S.F. MORE OR LESS. THENCE SOUTH O DEGREES 04 MINUTES WEST 269 FEET TO THE TRUE POINT OF CONTAINING 52 640 S.E. MORE OR LESS PARCEL NO. 2: UTILITIES WITE: SPOOR WATER SANITARY SEMEN. SEPTIC ELECTRIC. ARITONA PUBLIC SERVICE ELECTRIC. ARITONA PUBLIC SERVICE ELECTRICE. ARITONA PUBLIC SERVICE TELEPHONE: CENTURY JUNK, COX COMMUNICATIONS NATURAL GAS. SOUTHWEST GAS CABLE TY. CENTURY JUNK, COX COMMUNICATIONS THAT PORTION OF THE SOLITHWEST QUARTER OF THE NORTHEAST QUARTER OF EXIST. FIRE HYDRANT SECTION 9, TOWNSHIP 2 NORTH, RANGE 4 EAST OF GILA AND SALT RIVER BASE AND MERIDIAN, MARICOPA COUNTY, ARIZONA, BEING FURTHER DESCRIBED AS: COMMENCING AT THE NORTHWEST CORNER OF THE SOUTHWEST QUARTER OF THE NORTHEAST QUARTER OF SAID SECTION 9: SUZAN SHULTZ, AS OWNER, HAS HEREUNTO AFFIXED HER SIGNATURE THIS _______ DAY OF _________, 2016. **CACTUS WREN** THENCE SOUTH ALONG THE VEST LINE OF THE SOUTHWEST QUARTER OF THE NORTHEAST QUARTER, A DISTANCE OF 322.00 FEET. THENCE EAST 33 FEET TO THE TRUE POINT OF BEGINNING; **BASIS OF BEARINGS** SET 1/2" REBAR W/ CAP RLS#35694 THE MONUMENT LINE OF 60TH STREET, THE BEARING OF WHICH IS SOO'04'00"W. THENCE NORTH A DISTANCE OF 269 OO FEET-R=100.00 (MAR) 둳 L=104.75' (M) L=104.72' (R) T=57.76' (M) BENCHMARK BRASS CAP IN HAND HOLE AT THE INTERSECTION OF LINCOLN ROAD AND 56TH STREET HAVING AN ELEVATION OF 1363.44 NAVO 88 TOWN OF PARADISE VALLEY DATUM, GDACS# 24534-1 THENCE WEST, A DISTANCE OF 28.00 FEET: T=57.74' (R' **ACKNOWLEDGEMENT** FOUND 1/2* REBAR R=100.00 (M&R) ∆=60"01"06" (M) ∧=60"00"00" (R) THENCE SOUTH, A DISTANCE OF 289.00 FEET; L=15.88' (M STATE OF ARIZONA FOUND 1* IRON PIPE T=7.96' (M) FLOOD INSURANCE RATE MAP (FIRM) DATA REDWING ESTATES II 6001 E CACTUS WREN RD PARADISE VALLEY, AZ 85253 Δ=09'05'58" (M) L=88.87 (M) T=47.61 (M) COUNTY OF MARICOPA COMMUNITY # PANEL # SUFFIX 1765 0F 4425 L ON THIS OF , 2016, BEFORE ME, THE UNDERSIGNED, PERSONALLY APPEARED SUSAN SHULTZ, WHO ACKNOWLEDGED SELF TO BE THI PERSON WHOSE NAME IS SUBSCRIBED TO THE INSTRUMENT WITHIN, AND WHO PANEL DATE 10/16/2013 ZONE X* N/A / FOUND 1/2" REBAR ATTACHED CAP EXECUTED THE FOREGOING INSTRUMENT FOR THE PURPOSES THEREIN PUE RLS#3569 *AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE IN WITNESS WHEREOF; I HEREUNTO SET MY HAND AND OFFICIAL SEAL WIED THIS IS NOT AN ALTA/ASM TITLE SURVEY. NO CAM'S ARE CRATTED WITH THIS MAY. ESSING COAR'S AFFECTING THE SUBJECT PROPERTIES ARE BUILDING STERNOVER, SZOWER, TOOK ARE ZONES, OWNERSHIP INFORMATION, AND ADDRESSES THAT MAY BE SHOWN ARE SUPPLIED BY THE ODVERNING ADDRESS OF TRADH FROM THE BEST AVAILABLE RECORDS. THE SZOWER/OWN BUILD FOR COMPANION ADDRESS OF THE STEPPING THE STEPPING THE BUILD AVAILABLE RECORDS. 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IN WITNESS WHEREOF: I HEREUNTO SET MY HAND AND OFFICIAL SEAL. NOTARY PURITY 25.00 FOUND OR SET 16.¥ LEY MEY MY COMMISSION EXPIRES