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November 30, 2018

Karin Reid Offield

RE: *Rojo Grande Sedona Rezoning – Traffic, Water and Septic Impacts*

Dear Ms. Offield;

This letter outlines my findings regarding the additional impacts anticipated if the rezoning proposal being considered becomes a reality. This analysis compares traffic, water and septic levels for the ranch property under existing zoning and under the proposed rezoning.

TRAFFIC

Under existing zoning, the ranch acreage can be subdivided into 1.6 and 2-acre parcels for residential development. This would realize up to 90 single-family dwelling units. Using the trip generation statistics from the Institute of Transportation Engineers (ITE) in their manual, *Trip Generation, 6th Edition*, one single-family home generates 9.57 trips per day. The total amount of trips generated under existing zoning is 861 trips per day.

Under the proposed rezoning, 600 “single-family residential manufactured homes”, as defined on the site plan, and 50 RV pads will be constructed. There is some discrepancy as to whether the 600 manufactured homes should be considered as a mobile home park, or a single-family development for purposes of calculating trip generation. The definition of a mobile home park is “*a temporary or permanent area for mobile homes and travel trailers*”. Mobile home parks offer a lower cost alternative to other housing. Because the manufactured homes portion of the proposed rezoning plan does not provide temporary or permanent areas for mobile homes and does not provide a low cost (i.e. affordable) housing alternative to other residential development in the area, I believe that the traffic characteristics of the proposed development will function more like a single-family home subdivision than a mobile home park.

Again, using the ITE Manual, Single-Family Detached Housing (LU-201) generate 9.57 trips per unit per day and Campground/Recreational Vehicle Parks (LU-416) generates 1.57 trips per space per day. The total amount of trips generated under the proposed rezoning is 5,820.5 trips per day.

In summary, the rezoning generates 6.2 times more traffic than the existing zoning.

WATER

According to State statistics, each person in Arizona consumes on average 100 gallons of water per day, and an average household has 1.64 people. Given this data, the existing zoning would generate a demand for 14,760 gallons of water per day, or 16.5 acre-feet per year. Under the proposed rezoning, the property would generate a demand for 106,600 gallons per day or 119.4 acre-feet of water per year. Therefore, the rezoning represents a 620% increase in water use over existing zoning.

	<u>Water Use/Day</u>	<u>Water Use/Year</u>
<u>Existing Zoning</u> (90 units x 1.64 people/unit x 100 gallons/person)	14,700 gallons	16.5 acre-feet
<u>Proposed Rezoning</u> (650 units x 1.64 people/unit x 100 gallons/person)	160,600 gallons	119.4 acre-feet

WASTE WATER

Sedona Ventures Water Company provides wastewater treatment for 411 single-family homes in the area.

Sunset Hills	72
Sedona Shadows	198
Sedona Pines	<u>141</u>
	411

Given the previously cited number of (1.64 people/home) these 411 homes would house (1.64 people/home x 411 homes =) 674.04 people. According to their 2017 Annual Report, Sedona Ventures processed 15,209,685 gallons of wastewater during 2017, or (15,209,685 gallons/yr. / 365 days/yr. =) 41,670 gallons per day, or (41670 gallons per day / 674 people =) 61.82 gallons per person per day.

Based on a usage of 62 gallons per day per person, the property under existing zoning (which allows for up to 90 housing units) would be expected to generate (90 units x 1.64 people/unit x 62 gallons/person/day =) 9151.2 gallons each day.

Under the proposed rezoning (which allows for 650 housing units) this number would rise to (650 units x 1.64 people/unit x 62 gallons/person)/day =) 66,092 gallons/day, a 620% increase over existing zoning.

These calculations are summarized on the following chart:

TRAFFIC	# units	Daily Trips/unit	Total Trips Generated
<u>Existing Zoning</u>			
Single-Family Detached Housing (LU-2100)	90	9.57	861.3/day
Total:			861.3/day
<u>Proposed Rezoning</u>			
Single-Family Detached Housing (LU-210)	600	9.57	5,742/day
Campground/Recreational Vehicle Parks (LU-416)	50	1.57/space	78.5/day
Total:			5,280.5/day
<u>WATER</u>			
		Water Use/day	Water Use/year
Existing Zoning	90	14,700 gallons	16.5 acre-feet
Proposed Rezoning	650	160,600 gallons	119.4 acre-feet
<u>WASTE WATER</u>			
		Gallons/day	
Existing Zoning	90	9,151	
Proposed Rezoning	650	66,092	

I hope this information is useful in describing the increased impacts brought about the by proposed rezoning. Please contact me if you have any questions.

Sincerely,



Tom Newland, Principal