

***Drainage Technical Memorandum***

To: City of Litchfield Park

From: Michael Delmarter, P.E.

Date: February 11, 2014

Subject: Wigwam Redevelopment  
Parcel A – Northwest Corner of Village Parkway and Litchfield Road



***Purpose***

This memorandum has prepared to support the rezoning and general plan amendment effort for approximately 31.1 acres of currently undeveloped land located at the Northwest Corner of Village Parkway and Litchfield Road in Litchfield Park, Arizona. This memorandum in intended to summarize the existing onsite and offsite drainage conditions affecting the property and proposed drainage concepts that will be further defined with the development of an overall site plan for the property.

***Property Description***

The 31.1 acre site located in the south half of Section 21, T.2N., R.1W., GSRBM, is comprised of an assemblage of several undeveloped parcels of land and is generally located at the Northwest Corner of Village Parkway and Litchfield Road. The site is bounded on the south by the existing Village Parkway. The project is bounded on the west by the Village at Litchfield Park Phase 1 Residential neighborhood, on the north by the Wigwam “Red” Golf Course, and on the east by Litchfield Road.

In 2007, engineering plans were previously approved for a multi-family project called “Awanesa” on approx. 17.84 acres of the aforementioned 31.16 acres but the project was put on hold and never constructed. The remaining acreage is designated as being part of the future “Rosewood Plaza” project as well as 8.6 acres which is currently part of the Wigwam “Red” Golf Course.

***Existing Conditions***

All parcels are currently vacant having been historically cleared of vegetation, however they currently have minimal vegetation consisting of some weeds and grasses. The aforementioned “Awanesa” parcel has 2 small temporary retention basins that collect nuisance water generated on the western side of the parcel. One basin is located at the southwest corner of the site and has an emergency outfall grate that allows the basin to bleed off into an existing drainage channel to the west. A second basin is located on the south central side of the “Awanesa” parcel near the Vineyard Lane alignment. It is also equipped with an emergency outfall grate that allow the basin to bleed off to the south into a basin/channel owned/maintained by the City of Litchfield Park.

The western portion of the parcel does not have any existing retention basins but there appears to be a headwall/grated inlet at the northwest corner of Litchfield Road and Village parkway that connects to the Litchfield Road storm drain system.

The site is located in FEMA Zone X per FIRM Map 04013C2155L dated October 16, 2013. Zone X is defined as Areas of 0.2% annual chance flood; areas of 1% annual flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

### ***Proposed Development***

The parcel is proposed to be rezoned for a high density residential development consisting of approximately 350 units. No specific site plan has been developed at this time.

### ***Proposed Drainage Conditions***

The proposed development will utilize surface drainage or storm drains to convey onsite generated stormwater runoff to retention basins. If these basins are incorporated into landscape areas, the maximum water depth will be 3 feet. If site planning dictates that underground storage is necessary, these basins will be located in portions of the site under pavement and/or landscape areas. Note: it also may be possible to provide stormwater storage in the adjacent golf course area with an easement /agreement between the property owners.

The parcels will be required to retain the runoff generated by the 100 year-6 hour design storm event. The stormwater storage requirement is calculated by the formula  $V = C * I * A$  where C equals the composite Runoff Coefficient, I = the precipitation value of 2.47 is based on NOAA Atlas 14, and A = the area in acres.

For multi family development, the C Value is assumed to be 0.90. Note: This value may be further refined using composite c values upon development of the final site plans for each parcel.

Therefore, the required retention for the parcel =  $31.16 * 2.47 / 12 * 0.9 = 5.77$  acre-feet.

All basins will be required to bleed of or infiltrate within the Maricopa County 36 hour requirement.

### ***Attachments:***

1. FEMA MAP
2. Assessor's Map showing property limits



