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Principal Engineer  
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**APPROVED**

September 24, 2022

Sherri Koshiol, PE  
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**Subject:** Traffic Generation Letter – Desert River PAD 2, Northwest Corner of 99th Avenue & Desert River Boulevard – Glendale, Arizona

Dear Ms. Koshiol,

Y2K Engineering, LLC. (Y2K) has been retained to prepare a Trip Generation Letter for the Desert River Pad 2, a proposed multi-use development located on the northwest corner of 99<sup>th</sup> Avenue and Desert River Boulevard in Glendale Arizona. These land uses are planned on approximately 65.6 acres. The site is currently undeveloped. Access to the site will be provided from the Desert River Boulevard and 99<sup>th</sup> Avenue. The project is planned to provide 708 multifamily dwelling units, a mini-storage facility, medical OFFICE, hotel, and retail facilities.

A traffic impact study (TIS) was previously prepared in July 2020 for the site when land uses were undetermined. This study considered 900 multi-family dwelling units, medical, hotel, and retail facilities. This study is provided as **Attachment A**. The site plan has since been refined, resulting in different estimated building footprints and unit counts than the previously prepared TIS. The City of Glendale requires a Trip Generation Letter to compare the estimated traffic impact of the new site. This letter will evaluate the impact of the new development on the existing street system as compared to the previously prepared TIS. A vicinity map is shown in **Figure 1**, and the proposed site plan is depicted in **Figure 2**.

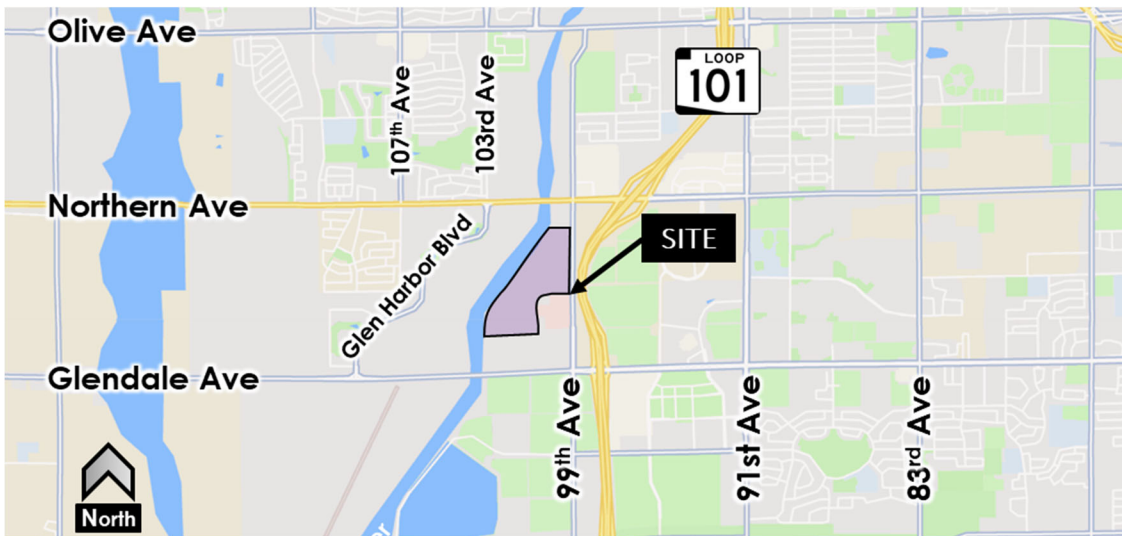


Figure 1: Project Vicinity Map



Figure 2: Site Plan and Surrounding Area

## PROPOSED DEVELOPMENT

### SITE LOCATION, LAND USE, AND ACCESS

The proposed Desert River Pad 2 development will be situated on undeveloped land located south of Northern Avenue along Desert River Boulevard and west of 99<sup>th</sup> Avenue. The proposed site spans an area of 63.29 acres, and will consist of a multifamily development, a mini storage area, as well as three designated areas each for commercial/retail/office/ hotel use. The multifamily development will consist of 708 dwelling units. The site plan is depicted in **Figure 2** and provided in **Attachment B**.

### TRIP GENERATION

The trip generation for the project was estimated using the Institute of Transportation Engineers' (ITE) Trip Generation Manual, 11th Edition. ITE's Trip Generation Manual contains data collected by various transportation professionals for a wide range of different land uses. The data summarized in the manual includes average rates and equations that have been established correlating the relationship between an independent variable that describes the development size and generated trips for each categorized land use. The development consists of multi-family residential, mini-warehouse and developments that will serve as commercial/hotel/retail/office space. A Floor-Area ratio of 0.2 was assumed for the Hotel, Medical

Office Building, and Shopping Center, therefore a gross leasable area (GLA) of 103 KSF was assumed to estimate the trips associated with the medical office building, and 140 KSF was assumed for the commercial shopping center. The mini-storage facility has an estimated building footprint of 45 KSF. Since the previous iteration of the site plan, the multi-family residential dwelling units decreased to 708 and the hotel decreased to 340 rooms from 400 rooms due to the reduced size of the lot. **Table 1** displays the anticipated trip generation for the site.

Table 1: Trip Generation – Weekday

DESCRIPTION OF LAND USE					VEHICLE GENERATED TRIPS						
					Daily	AM Peak Hour			PM Peak Hour		
ID	Land Use	ITE LUC	SIZE		Total	Enter	Exit	Total	Enter	Exit	Total
1	Multi-Family Residential	220	708	DU	4,614	58	184	242	205	120	325
2	Hotel	310	340	Rooms	3,262	91	72	163	114	110	224
3	Medical-Dental Office Building	720	103	KSF	4,318	195	52	247	125	291	416
4	Shopping Center	820	140	KSF	9,519	134	82	216	345	374	719
5	Mini Storage	151	45	KSF	65	2	2	4	3	4	7
<b>Total</b>					<b>21,778</b>	<b>480</b>	<b>392</b>	<b>872</b>	<b>792</b>	<b>899</b>	<b>1,691</b>
<i>Trips with Internal Trip Reduction 15%</i>					<b>18,511</b>	<b>408</b>	<b>333</b>	<b>741</b>	<b>673</b>	<b>764</b>	<b>1,437</b>
<b>"New" Trips Added to Street System</b>					<b>18,511</b>	<b>408</b>	<b>333</b>	<b>741</b>	<b>673</b>	<b>764</b>	<b>1,437</b>

As summarized in **Table 1**, the project is anticipated to add a total of 741 new trips (entering and exiting) to the street system during the AM peak hour and 1,437 trips during the PM peak hour. The greatest hourly entering volume occurs during the PM peak hour, when 673 entering trips are anticipated.

## TRIP GENERATION COMPARISON

Traffic analysis was completed for the previous iteration of the site plan in July 2020. The previous site plan is shown in **Figure 3**. A trip generation comparison was performed to identify the estimated difference in trips added to the network between the updated site plan, and the July 2020 site plan. Trip generation estimates were calculated using the Institute of Transportation Engineers' (ITE) Trip Generation Manual, 11th Edition.

Table 2: Trip Generation Comparison between Residential and Commercial Land Uses

DESCRIPTION OF LAND USE					VEHICLE GENERATED TRIPS						
					Daily	AM Peak Hour			PM Peak Hour		
ID	Land Use	ITE LUC	SIZE		Total	Enter	Exit	Total	Enter	Exit	Total
1	Multi-Family Residential	220	900	DU	5,844	72	230	302	257	151	408
2	Hotel	310	400	Rooms	3,912	108	85	193	137	131	268
3	Medical-Dental Office Building	720	120	KSF	5,048	224	60	284	145	340	485
4	Shopping Center	820	163	KSF	10,120	142	88	230	385	417	802
<b>Total</b>					<b>24,924</b>	<b>546</b>	<b>463</b>	<b>1,009</b>	<b>924</b>	<b>1,039</b>	<b>1,963</b>
<i>Trips with Internal Trip Reduction 15%</i>					<b>21,185</b>	<b>464</b>	<b>394</b>	<b>858</b>	<b>785</b>	<b>883</b>	<b>1,669</b>
<b>"New" Trips Added to Street System (Previous Site Plan)</b>					<b>21,185</b>	<b>464</b>	<b>394</b>	<b>858</b>	<b>785</b>	<b>883</b>	<b>1,669</b>
<b>"New" Trips Added to Street System (New Site Plan)</b>					<b>18,511</b>	<b>408</b>	<b>333</b>	<b>741</b>	<b>673</b>	<b>764</b>	<b>1,437</b>
<b>Difference</b>					<b>-2,674</b>	<b>-56</b>	<b>-61</b>	<b>-117</b>	<b>-112</b>	<b>-119</b>	<b>-232</b>

The traffic generated by the proposed site plan is expected to generate approximately 87.4% of the daily trips estimated from the previous site plan. As such, the proposed site plan is expected to result in less traffic impact than previous analysis indicated, therefore no additional mitigations are expected to be required.

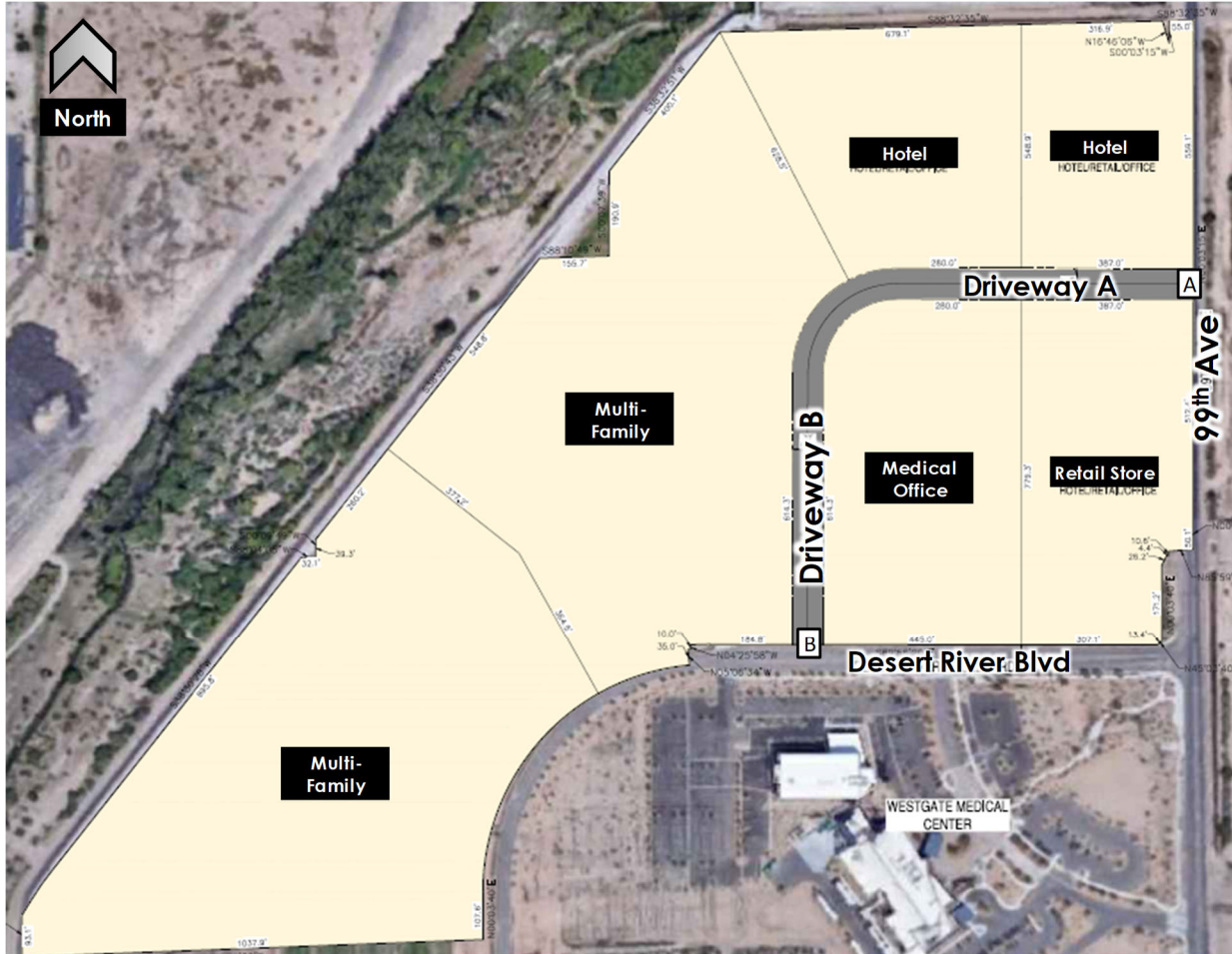


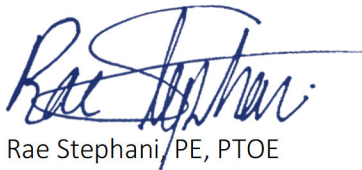
Figure 3: July 2020 Site Plan

## PRINCIPAL FINDINGS AND RECOMMENDATIONS

- The Desert River Pad 2 is located on currently undeveloped land. Multi-family residential, medical office, hotel, and retail facilities are proposed on the site.
- A traffic impact study (TIS) was previously prepared for the site in July 2020 when the exact land uses were less defined. This study considered 900 multi-family dwelling units, medical, hotel, and retail facilities. The site plan has since been refined, resulting in different estimated building footprints and unit counts than the previously prepared TIS.
- The refined site plan proposes 708 multifamily dwelling units, a 45 KSF mini-storage facility, a 103 KSF medical office, a 140 KSF shopping center, and a 340 room hotel.
- The refined site plan is anticipated to add a total of 741 new trips (entering and exiting) to the street system during the AM peak hour and 1,437 trips during the PM peak hour.
- The traffic generated by the proposed site plan is expected to generate approximately 87.4% of the daily trips estimated from the previous July 2020 site plan. As such, the proposed site plan is expected to result in less traffic impact than previous analysis indicated, therefore no additional mitigations are expected to be required.

Thank you for your time and review of this traffic impact statement. Please let me know if you have any comments or questions.

Sincerely,



Rae Stephani, PE, PTOE  
Y2K Engineering, LLC.