



PROVIDING VALUE FIRST

Traffic Impact Analysis

Commercial Development

Southeast Corner of 83rd Avenue & Glendale Avenue

Glendale, Arizona

April 2022

PREPARED FOR:

Fortis Development LLC

PREPARED BY:

Y2K Engineering, LLC.

Project No. 20-088

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A handwritten signature in black ink, appearing to read 'Rae Stephani', written over the bottom portion of the professional engineer seal.

EXECUTIVE SUMMARY

INTRODUCTION

Y2K Engineering, LLC. has been retained to prepare a traffic impact analysis (TIA) for the proposed commercial development located on the southeast corner of 83rd Avenue and Glendale Avenue in Glendale, Arizona. The development is planned for both residential and commercial land uses, including a gas station, fast-food restaurants with drive-throughs, a retail store, and low-rise apartments. The proposed development will be constructed on a vacant parcel on the southeast corner of 83rd Avenue and Glendale Avenue.

Four driveways are proposed to serve the site; 1) a full movement driveway at the existing Circle K driveway on 83rd Avenue (Driveway A), 2) a right-in/right-out across from the Walgreens driveway on 83rd Avenue (Driveway B), 3) a new right-in/right-out driveway on Glendale Avenue (Driveway C), and 4) a new right-in/right-out/left-in driveway on Glendale Avenue at the existing left-turn lane (Driveway D).

TRIP GENERATION

- The proposed development is anticipated to generate a total of 6,112 weekday trips (entering and exiting) with 479 trips during the AM peak hour and 376 trips during the PM peak hour.

SAFETY ANALYSIS

- During the three-year analysis period, there were 78 total crashes with 59 no injury crashes, 11 possible injury crashes, and 8 minor injury crashes. The majority of the 78 crashes were left turn (25) and rear end (24) crashes.
- There were no serious injury, fatal, or pedestrian related crashes reported during the analysis period.

LEVEL OF SERVICE ANALYSIS

EXISTING CONDITIONS (2020) – WITHOUT SITE

- The intersection of 83rd Avenue and Glendale Avenue currently operates at an acceptable level of service for both the AM and PM peak hours.
- The movements at the existing driveways at Walgreens (Driveway B) and Circle K (Driveway A) operate at a LOS B or better.

OPENING YEAR (2021) – WITH SITE

- In 2021, it is anticipated that the intersection of 83rd Avenue and Glendale Avenue will continue to operate at a LOS B in the AM peak hour and LOS C in the PM peak hour. All movements will operate at a LOS C or better.
- In 2021, all driveway movements are expected to operate at a LOS D or better for both the AM and PM peak hours.

OPENING YEAR (2026) – WITH SITE

- In 2026, it is anticipated that the intersection of 83rd Avenue and Glendale Avenue will continue to operate at a LOS B in the AM peak hour and LOS C in the PM peak hour. All movements will operate at a LOS C or better.

- In 2026, all driveway movements are expected to operate at a LOS D or better except for the westbound approach at 83rd Avenue and Circle K Driveway (Driveway A). As this intersection is the most direct path for vehicles to head south on 83rd Avenue from the new development, the westbound approach (single lane left/thru/right) operates at a LOS E in the PM peak in 2026. Poor levels of service are expected for the left turn movement out of commercial plazas such as this one. Commercial users will find alternative routes such as U-turns or a series of right turns during the busy peak hours.

SITE ACCESS

- Driveway A on 83rd Avenue is aligned with the Circle K driveway and is anticipated to operate as a full movement intersection with minor street stop control. Driveway A is approximately 640 feet south of Glendale Ave and approximately 190 feet south of Driveway B.
- Driveway B on 83rd Avenue is offset approximately 75 feet north of the existing Walgreens driveway and is anticipated to operate as a right-in/right-out intersection with minor street stop control. Left-ins will still be allowed into the Walgreens driveway from northbound 83rd Avenue. Driveway B is approximately 350 feet south of Glendale Avenue.
- Driveway C on Glendale Avenue is not aligned with any existing roads or driveways and is anticipated to operate as a right-in/right-out driveway with minor street stop control. Driveway C is approximately 300 feet east of 83rd Avenue.
- Driveway D on Glendale Avenue is aligned with an existing left-turn lane and will operate as a right-in/right-out/left-in intersection with minor street stop control with minor street stop control. Driveway D is approximately 475 feet east of 83rd Avenue and 175 feet east of Driveway C.

TURN LANE ANALYSIS

- All turning movements into the new site were evaluated based on MCDOT turn lane requirements.
- A southbound left-turn lane is warranted at Driveway A based on the minimum peak hour turning movement of 15 vehicles per hour (vph) with a through lane volume of 501-600 vph.
- A right-turn lane is warranted at Driveway B and Driveway C based on the roadway geometry, vehicle speeds and projected traffic volumes.
- The existing westbound left-turn lane at Driveway D is recommended to be extended to a total length of 160 feet.

RECOMMENDATIONS

- Driveway A (access to 83rd Avenue) is recommended to be a full-access driveway. A STOP sign is recommended to be installed for westbound traffic exiting the site. The existing TWLTL is sufficient for the southbound left-turn movement (160-foot minimum).
- Driveway B (existing access on 83rd Avenue) is recommended to be a right-in/right-out driveway. A STOP sign is recommended to be installed for westbound traffic. A 160-foot northbound right-turn lane is recommended.

- Driveway C (access to Glendale Ave) is recommended to be a right-in/right-out driveway. A STOP sign is recommended to be installed for northbound traffic exiting the site. A 160-foot eastbound right-turn lane is recommended.
- Driveway D (easternmost access on Glendale Ave) is recommended to be a right-in/right-out/left-in driveway. A STOP sign is recommended to be installed for northbound traffic exiting the site. The existing westbound left-turn lane on Glendale Avenue at Driveway D is recommended to be extended to provide 160 feet of total storage space, meeting City of Glendale minimum standards.