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REVIEWED

Alan Heathcoat, P.E.
Glendale Transportation Department

06/21/2022 2:45:25 PM



Approval pending MCDOT's approval. Please address comments in conclusion.



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EISENBERG OLIVE COTTON LANE/OLIVE AVENUE TRAFFIC IMPACT ANALYSIS

Executive Summary

The purpose of this traffic study is to evaluate the current and future transportation system within the project study area surrounding the site without and with the proposed.

Existing Traffic Data

All of the study intersections currently operate at an adequate level of service (LOS) during the weekday peak hours.

Future Traffic Data Without Project

Several developments near the project site are expected to be constructed within the near future in the area. Trips from these developments were added to this analysis based on traffic assignments from the following reports:

- *Northern Farms Traffic Impact Analysis (TIA)* completed by Y2K Engineering, August 2019.
- *Cotton Lane and Northern Avenue TIA* completed by Kimley-Horn and Associates February 2019.
- *Residential Development Traffic Impact Study* completed by United Civil Group, June 2020.
- *Granite Vista TIA* completed by CivTech, 2014.
- *Parkway 303 TIA* completed by **Southwest Traffic Engineering, LLC (SWTE)**, June 2021.

All of the study intersections are expected to continue to operate at an acceptable LOS during the weekday peak hours in 2023 and 2026 without the project and with the adjacent developments.

Future Traffic Data With Project

All of the study intersections are expected to continue to operate at an acceptable LOS during the weekday peak hours in 2023 and 2026 without and with the project and with the adjacent developments.

Turn Lane Analysis

Westbound right turn lanes are warranted at East Olive Access/Olive Avenue , West Olive Access/Olive Avenue, and 173rd Avenue/Olive Avenue.

The warranted westbound right turn lane at East Olive Access is not recommended due to the adjacent East Fertizona Driveway.

The warranted westbound right turn lanes at West Olive Access/Olive Avenue and 173rd Avenue/Olive Avenue will serve free flow right turning movements, and therefore are not expected to experience queues.



No queue overlap is expected to occur between any of the study intersections.

Traffic Signal Warrant Analysis

The intersection of 173rd Avenue/Olive Avenue does not currently meet and is not expected to meet traffic signal warrants #1 or #2 in 2023 or 2026 without traffic from the project.

Traffic signal warrant #1 is expected to be met in 2023 and 2026 with traffic from the project.

Crash Analysis

Crash history for the existing study intersections was obtained from the Arizona Department of Transportation (ADOT) from 1 January 2018 to 31 December 2020.

Twelve crashes were reported at the intersection Cotton Lane/Olive Avenue within the three-year period with four collisions resulting in injury. Four of the crashes were angle and three were single vehicle. Other crash types included rear-end, sideswipe, and left turn.

No crashes were reported at the intersections of remaining study intersections.

It should be noted that this crash summary only includes crashes where a police officer was contacted and wrote a report, otherwise, there is no record of the incident. It is possible that other minor crashes occurred in the area where the Police Department was not contacted, and no official record of these crashes exists.

Mention in narrative

Recommendations

The warranted westbound right turn lanes at West Olive Access/Olive Avenue and 173rd Avenue/Olive Avenue should be constructed to provide 160 feet of storage per the MCDOT *Roadway Design Manual*.

The intersection of 173rd Avenue/Olive Avenue is expected to operate at an adequate LOS in 2023 and 2026 with traffic from the project. This intersection should be monitored, and a traffic signal can be installed if/when warrants are met.

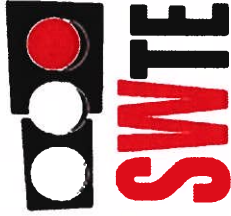
Has there been any discussion of a contribution toward a signal?

MCDOT -- TRAFFIC ENGINEERING REVIEW COMMENT SHEET

1 of 1

Project Name: Eisenberg Olive Industrial Development Location: NW Corner of Olive Avenue and Cotton Lane MCDOT File No.: TC202200974	Date: August 24, 2022 Reviewer: Bonnie Perotti, P.E. Phone No.: 602-506-4618
Consultant: Southwest Traffic Engineering LLC. Project No.: Plans Sealed By: Andrew Smigielski, PE, PTOE, PTP	Consultant Code: A = Will Comply B = Deleted C = Consultant to Evaluate

Item Number	Sheet Number	Comments	Consultant Reply
		2nd REVIEW (TIS)	
		<p>Consultant: Please use the code and respond to each comment in the Consultant Reply Column. This sheet is for our record, <u>please answer every question and sign and date your acknowledgement or the plans will be sent back to complete the process.</u> Send back the marked-up plans and a new set of plans along with this comment sheet. Thank you for your cooperation.</p> <p style="text-align: center;">= = = = =</p> <p>General Project Summary: The proposed industrial development consists of 1,030,880 square feet of industrial park space on the northwest corner of Olive Avenue / Cotton Lane in Glendale, Arizona. The study is based on an opening year of 2023 and horizon year of 2026. Site is now accessed by 4 access points</p> <p>Review Comments:</p>	<p>Use CODE "A", "B", "C" in this column next to every comment.</p> <p style="text-align: center;">= = = =</p>
1	6	The project site and the surrounding roadway network mostly falls under Maricopa County jurisdiction. As per the current status on MCDOT's Road Information Data tool, the proposed Site falls under residential zoning RU-43.	
2	6	Right turn lanes at both the 173 rd Ave and the West Olive access shall be installed with 160' of storage and adequate taper.	
3	41	The warranted traffic signal shall be installed at 173 rd Ave and Olive Ave. Caution shall be used in determining pole location on the south side of intersection given potential MWD easements.	
4	Site Plan	North 173 rd Access shall be striped as a Left out only. No right turns. A "bulb" or other curb shall be installed to eliminate the truck movement to the north of this access point.	
5	Site Plan	On Olive Avenue, along the site frontage, maintain/provide minimum 65 feet R/W. Half-street improvements along the Site frontage shall be as per MCDOT RDM Figure 5.8 meeting future principal arterial roadway cross-section.	
6	Site Plan	On 173 rd Avenue, along the site frontage, maintain/provide minimum 30 feet or minimum 40 feet R/W and any additional R/W required by the MCDOT Planning Department during the permit process. Half-street improvements along the Site frontage shall be as per MCDOT RDM Figure 5.14 meeting industrial/commercial roadway cross-section (or) as per the direction from MCDOT permits department during offsite permit plan review process.	
		<u>This Study is approved with the above mentioned stipulations.</u>	



**SOUTHWEST TRAFFIC
ENGINEERING, LLC**

TRAFFIC IMPACT ANALYSIS

EISENBERG OLIVE

COTTON LANE/OLIVE AVENUE

REVISED 12 AUGUST 2022

25 APRIL 2022



PREPARED FOR

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EISENBERG OLIVE COTTON LANE/OLIVE AVENUE REVISED TRAFFIC IMPACT ANALYSIS

Executive Summary

The purpose of this traffic study is to evaluate the current and future transportation system within the project study area surrounding the site without and with the proposed.

Existing Traffic Data

All of the study intersections currently operate at an adequate level of service (LOS) during the weekday peak hours.

Future Traffic Data Without Project

Several developments near the project site are expected to be constructed within the near future in the area. Trips from these developments were added to this analysis based on traffic assignments from the following reports:

- *Northern Farms Traffic Impact Analysis (TIA)* completed by Y2K Engineering, August 2019
- *Cotton Lane and Northern Avenue TIA* completed by Kimley-Horn and Associates February 2019
- *Residential Development Traffic Impact Study* completed by United Civil Group, June 2020
- *Granite Vista TIA* completed by CivTech, 2014.
- *Parkway 303 TIA* completed by Southwest Traffic Engineering, LLC (SWTE), June 2021
- *Zanjero Parcel 4 TIA* completed by SWTE, April 2020
- *Zanjero Pass TIS* completed by CivTech, July 2021
- *American Leadership Academy West Foothills Campus TIS* completed by Lokahi, LLC, March 2021

All of the study intersections are expected to continue to operate at an acceptable LOS during the weekday peak hours in 2023 and 2026 without the project and with the adjacent developments. However, the southbound right turning movement at the intersection of Cotton Lane/Olive Avenue is expected to experience inadequate delays during the weekday AM peak hour in 2023 and 2026 without traffic from the project and with adjacent developments.

Future Traffic Data With Project

The intersection of Cotton Lane/Olive Avenue is expected to experience inadequate delays during the weekday peak hours in 2023 and 2026 with traffic from the project and with adjacent developments.

The southbound approach to the intersection of 173rd Avenue/Olive Avenue and the southbound left turning movement at the intersection of West Olive Access/Olive Avenue are expected to experience inadequate delays during the weekday PM peak hour in 2023 and 2026 with traffic from the project and adjacent developments.



The remaining study intersections are expected to continue to operate at an acceptable LOS during the weekday peak hours in 2023 and 2026 without and with the project, with the adjacent developments.

Turn Lane Analysis

Westbound right turn lanes are warranted at East Olive Access/Olive Avenue, West Olive Access/Olive Avenue, and 173rd Avenue/Olive Avenue.

The warranted westbound right turn lane at East Olive Access is not recommended due to the adjacent East Fertizona Driveway.

The warranted westbound right turn lanes at West Olive Access/Olive Avenue and 173rd Avenue/Olive Avenue will serve free flow right turning movements, and therefore are not expected to experience queues.

No queue overlap is expected to occur between any of the study intersections.

Traffic Signal Warrant Analysis

The intersection of 173rd Avenue/Olive Avenue does not currently meet and is not expected to meet traffic signal warrants #1 or #2 in 2023 or 2026 without traffic from the project.

Traffic signal warrants #1 and #2 are expected to be met at 173rd Avenue/Olive Avenue in 2023 and 2026 with traffic from the project.

Crash Analysis

Crash history for the existing study intersections was obtained from the Arizona Department of Transportation (ADOT) from 1 January 2018 to 31 December 2020.

Twelve crashes were reported at the intersection Cotton Lane/Olive Avenue within the three-year period with four collisions resulting in injury. Four of the crashes were angle and three were single vehicle. Other crash types included rear-end, sideswipe, and left turn. No crashes were reported at the intersections of remaining study intersections.

It should be noted that this crash summary only includes crashes where a police officer was contacted and wrote a report, otherwise, there is no record of the incident. It is possible that other minor crashes occurred in the area where the Police Department was not contacted, and no official record of these crashes exists.

Mitigation

The intersection of Cotton Lane/Olive Avenue is expected to experience inadequate delays during the weekday peak hours in 2023 and 2026 with traffic from the project and with adjacent developments. These delays are due to the relatively large number of vehicles making a southbound right turn and an eastbound left turn at this intersection, and the limited capacity offered for these movements. The installation of right turn overlap phasing for the southbound approach to the intersection is expected to alleviate this delay.



The southbound approach to the intersection of 173rd Avenue/Olive Avenue and the southbound left turning movement at the intersection of West Olive Access/Olive Avenue are expected to experience inadequate delays during the weekday PM peak hour in 2023 and 2026 with traffic from the project and adjacent developments. The delays at these intersections are due to relatively large number of through vehicles on Olive Avenue not providing adequate gaps for vehicles turning from the minor approaches of these intersections. The installation of a traffic signal at 173rd Avenue/Olive Avenue would be expected to alleviate the delay at this intersection.

While the installation of a traffic signal at West Olive Access/Olive Avenue would be expected to alleviate the delay, this location would not be an appropriate for a traffic signal due to its proximity to Cotton Lane/Olive Avenue. Mitigation measures are limited at West Olive Access/Olive Avenue. Un-signalized, minor approaches to major four or more lane streets like Olive Avenue tend to operate at a LOS E or F during the weekday peak hours. Southbound left turning vehicles could utilize the proposed traffic signal at 173rd Avenue/Olive Avenue in order to avoid excessive delays during the PM peak hour.

Recommendations

The warranted westbound right turn lanes at West Olive Access/Olive Avenue and 173rd Avenue/Olive Avenue should be constructed to provide 160 feet of storage per the MCDOT *Roadway Design Manual*.

The warranted traffic signal should be installed at the intersection of 173rd Avenue/Olive Avenue.

The intersection of Cotton Lane/Olive Avenue should be monitored, and southbound right turn overlap phasing should be installed at this intersection if needed in the future.