

# Culver's Restaurant

State Road 7 / US 441 & W. Copans Road  
Margate, Florida

## TRAFFIC STUDY

prepared for:

Medalist Restaurant Group, LLC

**KBP CONSULTING, INC.**

**September 2018**

# Culver's Restaurant

State Road 7 / US 441 & W. Copans Road

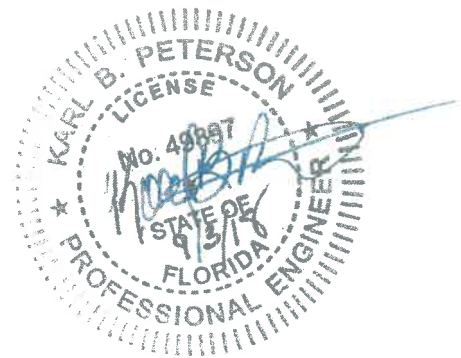
Margate, Florida

## Traffic Study

September 2018

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## INTRODUCTION

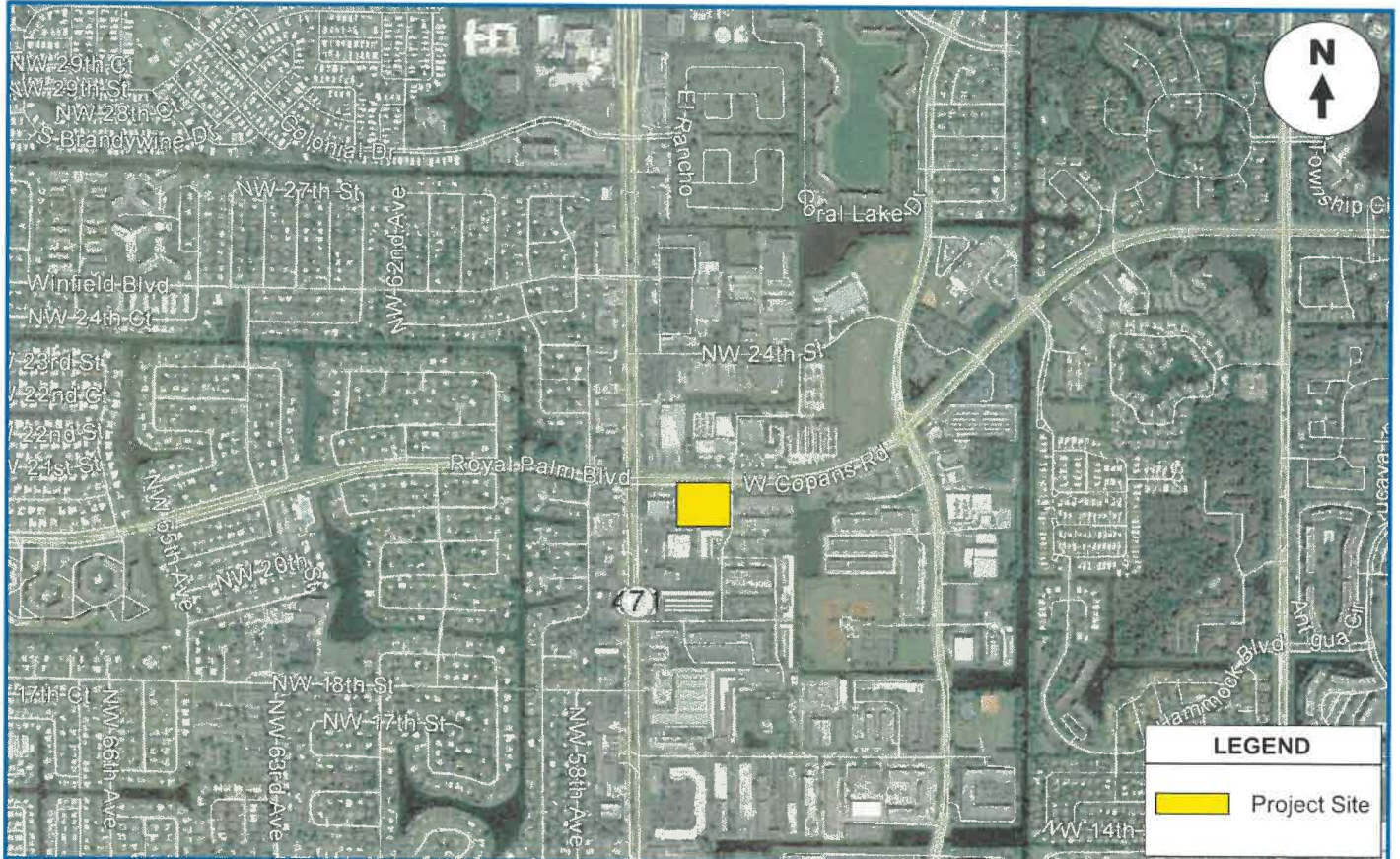
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There is a proposed restaurant and retail development to be located generally in the southeast quadrant of the intersection at State Road 7 / US 441 and W. Copans Road in Margate, Broward County, Florida. The location of this project site is illustrated in Figure 1 on the following page.

KBP Consulting, Inc. has been retained by the Medalist Restaurant Group, LLC to prepare a traffic study in connection with this proposed development. This study addresses the anticipated trip generation characteristics of the subject restaurant / retail development and the projected turning movement volumes at the site driveways as well as the project access driveways on State Road 7, W. Copans Road, and NW 55<sup>th</sup> Avenue.

This traffic study is divided into four (4) sections, as listed below:

1. Inventory
2. Trip Generation
3. Trip Distribution and Driveway Assignment
4. Summary & Conclusions



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## Project Location Map

**FIGURE 1**  
Culver's Restaurant  
Margate, Florida

## **INVENTORY**

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### **Existing Land Use and Access**

The subject site is approximately 1.68 acres and is currently vacant. Access to this site is currently provided by one (1) full access driveway on NW 55<sup>th</sup> Avenue. Access to the site is also provided by two (2) full access driveway connections to the existing Wawa located immediately to the west. The Wawa has 14 fueling positions, one (1) right-in / right-out only driveway on State Road 7 / US 441, and one (1) right-in / right-out only driveway on W. Copans Road.

### **Proposed Land Uses and Access**

The subject site will be developed with a 4,443 square foot Culver's fast food restaurant with drive-through lane and a 4,000 square foot general retail building. Access to the adjacent Wawa and the surrounding street network will remain as is. Appendix A contains the preliminary site plan for the project.

### **Roadway System**

State Road 7 / US 441, located to the west side of the site, is a state-maintained six-lane divided arterial roadway oriented in the north-south direction. On the north side of the site is W. Copans Road. This roadway is a county-maintained four-lane divided arterial roadway oriented in the east-west direction. The east side of the site is bounded by NW 55<sup>th</sup> Avenue which is a two-lane local roadway oriented in the north-south direction.

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## TRIP GENERATION

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A trip generation analysis was conducted for the existing development to the west of the site (Wawa) and the proposed development on the subject site (Culver's Restaurant and Retail Building). The analysis was performed using the trip generation rates and equations published in the Institute of Transportation Engineer's (ITE) *Trip Generation Manual (10<sup>th</sup> Edition)*. The trip generation analysis was undertaken for daily, AM peak hour, and PM peak hour conditions. According to the ITE report, the most appropriate "land use" categories for the existing and proposed development are as follows:

### **ITE Land Use #945 – Gasoline / Service Station with Convenience Market**

- Weekday:  $T = 205.36 (X)$   
*where  $T$  = number of trips and  $X$  = number of fueling positions*
- AM Peak Hour:  $T = 12.47 (X)$  (51% in / 49% out)
- PM Peak Hour:  $T = 13.99 (X)$  (51% in / 49% out)
  - Pass-By: Daily = 59%, AM Peak = 62%, PM Peak = 56%

### **ITE Land Use #934 – Fast-Food Restaurant with Drive-Through Window**

- Weekday:  $T = 470.95 (X)$   
*where  $T$  = number of trips and  $X$  = 1,000 square feet of gross floor area*
- AM Peak Hour: *Culver's does not serve breakfast. They are open for lunch /dinner.*
- PM Peak Hour:  $T = 32.67 (X)$  (52% in / 48% out)
  - Pass-By = 49%

### **ITE Land Use #820 – Shopping Center**

- Weekday:  $T = 37.75 (X)$   
*where  $T$  = number of trips and  $X$  = 1,000 square feet of gross leasable area*
- AM Peak Hour:  $T = 0.94 (X)$  (62% in / 38% out)
- PM Peak Hour:  $T = 3.81 (X)$  (48% in / 52% out)
  - Pass-By = 34%

Utilizing the above-listed trip generation rates from the referenced ITE document, a trip generation analysis was undertaken for the existing Wawa and the proposed restaurant / retail development on the subject site at State Road 7 / US 441 and W. Copans Road in Margate. The results of this effort are documented in Table 1 on the following page.

<p align="center"><b>Table 1</b>  <b>Trip Generation Summary</b>  <b>Culver's Restaurant - Margate, Florida</b></p>								
Land Use	Size	Daily Trips	AM Peak Hour Trips			PM Peak Hour Trips		
			In	Out	Total	In	Out	Total
<i>Existing</i>								
Service Station w/ Convenience Market - Pass-By (59% / 62% / 56%)	14 FP	2,875 (1,696)	89 (55)	86 (54)	175 (109)	100 (56)	96 (54)	196 (110)
<b>Existing Sub-Total</b>		<b>1,179</b>	<b>34</b>	<b>32</b>	<b>66</b>	<b>44</b>	<b>42</b>	<b>86</b>
<i>Proposed</i>								
Fast-Food Restaurant w/ Drive-Thru - Pass-By (49%)	4,443 SF	2,092 (1,025)	0 0	0 0	0 0	75 (37)	70 (34)	145 (71)
General Retail (Shopping Center) - Pass-By (34%)	4,000 SF	151 (51)	2 (1)	2 0	4 (1)	8 (3)	7 (2)	15 (5)
<b>Proposed Sub-Total</b>		<b>1,167</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>43</b>	<b>41</b>	<b>84</b>
<b>Culver's / Retail Driveway Volumes</b>		<b>2,243</b>	<b>2</b>	<b>2</b>	<b>4</b>	<b>83</b>	<b>77</b>	<b>160</b>
<b>Total (Wawa / Culver's / Retail) Driveway Volumes</b>		<b>5,118</b>	<b>91</b>	<b>88</b>	<b>179</b>	<b>183</b>	<b>173</b>	<b>356</b>

Compiled by: KBP Consulting, Inc. (September 2018).

Source: Institute of Transportation Engineers (ITE) Trip Generation Manual (10th Edition).

As indicated in Table 1, the proposed restaurant / retail development is anticipated to generate approximately 1,167 net new daily vehicle trips, approximately three (3) net new AM peak hour vehicle trips (1 inbound and 2 outbound) and approximately 84 net new vehicle trips (43 inbound and 41 outbound) during the typical afternoon peak hour.

The driveway volumes (including pass-by trips) associated with the proposed Culver's Restaurant and the proposed retail building are 2,243 daily vehicle trips, four (4) AM peak hour vehicle trips, and 160 PM peak hour vehicle trips. When considering the existing Wawa adjacent to the site, the total external driveway volumes are projected to be 5,118 daily vehicle trips, 179 AM peak hour vehicle trips, and 356 PM peak hour vehicle trips.

## TRIP DISTRIBUTION AND DRIVEWAY ASSIGNMENT

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The trip distribution and driveway assignment for the proposed restaurant / retail development at State Road 7 / US 441 and W. Copans Road was developed based upon knowledge of the study area, examination of the surrounding roadway network characteristics, review of current traffic volumes, and existing land use patterns. Figure 2 on the following page depicts the anticipated trip distribution for this project. *(Note: This trip distribution is consistent with the trip distribution documented in the traffic study prepared for the proposed Wawa in December 2015.)*

The projected peak hour traffic generated by the proposed restaurant / retail development was assigned to the project driveways using the traffic assignment documented in Figure 2 and is presented in Figure 3. The total site driveway volumes (including the existing Wawa traffic and the traffic associated with the proposed Culver's Restaurant and the proposed retail building) are presented in Figure 4.

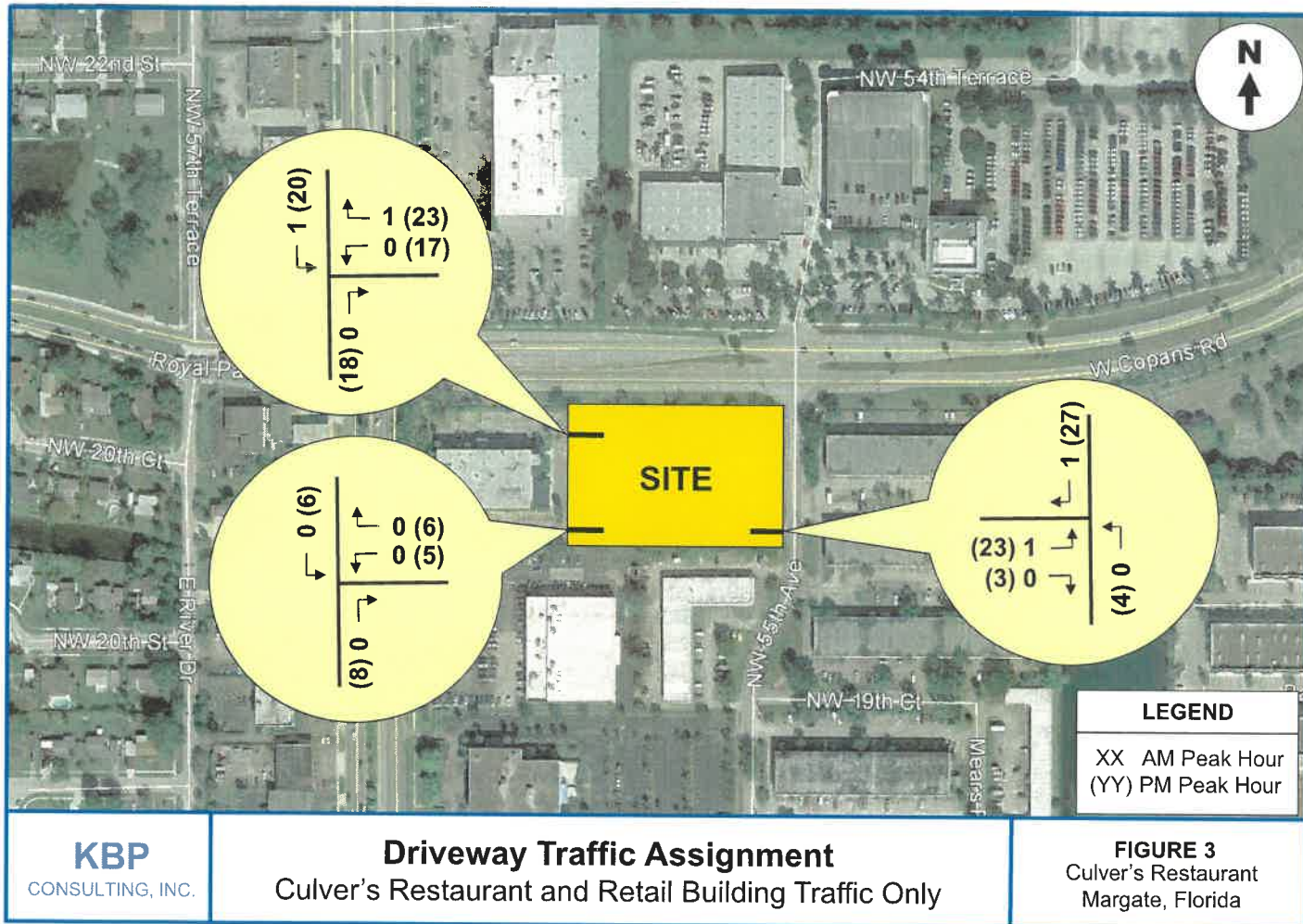
Concerning access to the site, there is an existing northbound right-turn lane on State Road 7 / US 441 and an existing eastbound right-turn lane on W. Copans Road. These dedicated turn lanes serve the existing right-turn in / right-turn out only driveways on State Road 7 and W. Copans Road, respectively. Along with the existing westbound left-turn lane on W. Copans Road at NW 55<sup>th</sup> Avenue, the appropriate turn lanes are already present to accommodate the anticipated traffic to be generated by the proposed restaurant / retail development.

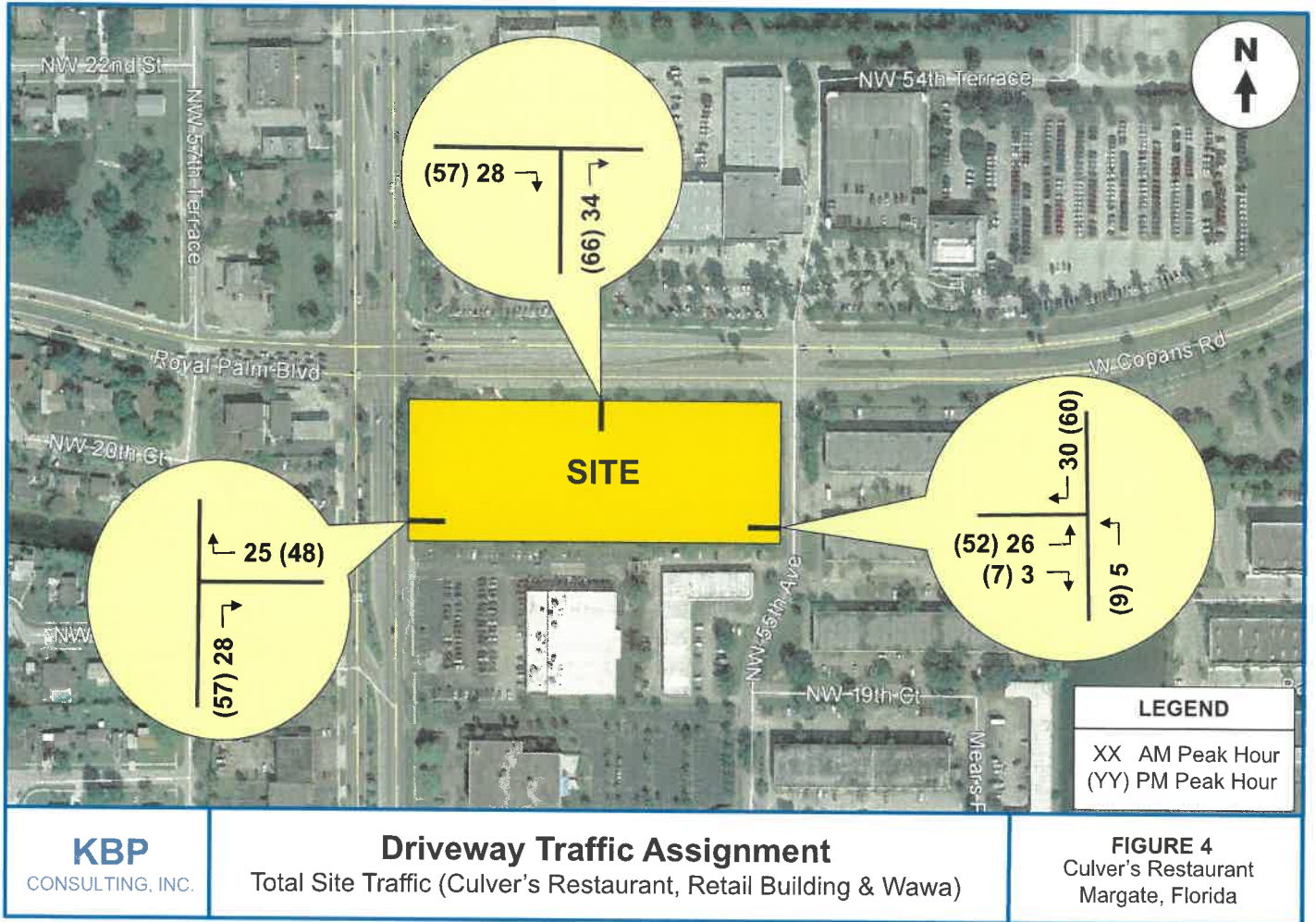


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## Trip Distribution

**FIGURE 2**  
Culver's Restaurant  
Margate, Florida





## **SUMMARY & CONCLUSIONS**

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There is a proposed restaurant (Culver's Restaurant) and retail development to be located generally in the southeast quadrant of the intersection at State Road 7 / US 441 and W. Copans Road in Margate, Broward County, Florida. The subject site is currently vacant. Access to the site is shared with the existing Wawa adjacent to the site and a full access driveway located on NW 55<sup>th</sup> Avenue. The subject site will be developed with a 4,443 square foot fast food restaurant with drive-through lane and a 4,000 square foot general retail building.

The proposed restaurant / retail development is anticipated to generate approximately 1,167 net new daily vehicle trips, approximately three (3) net new AM peak hour vehicle trips (1 inbound and 2 outbound) and approximately 84 net new vehicle trips (43 inbound and 41 outbound) during the typical afternoon peak hour.

The driveway volumes (including pass-by trips) associated with the Culver's Restaurant and the proposed retail building are 2,243 daily vehicle trips, four (4) AM peak hour vehicle trips, and 160 PM peak hour vehicle trips. When considering the existing Wawa adjacent to the site, the total external driveway volumes are projected to be 5,118 daily vehicle trips, 179 AM peak hour vehicle trips, and 356 PM peak hour vehicle trips.

The appropriate turn lanes (a northbound right-turn lane on State Road 7 / US 441, an eastbound right-turn lane on W. Copans Road, and a westbound left-turn lane on W. Copans Road at NW 55<sup>th</sup> Avenue) are already present to accommodate the anticipated traffic to be generated by the proposed restaurant / retail development.

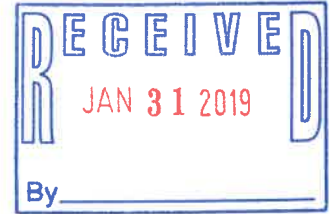
**APPENDIX A**

**Culver's Restaurant**  
**Site Plan**



## Culver's Restaurant & Retail – Margate

### Traffic Comment



**Comment:** In regards to the traffic study, although it calculates trip generation it does not address LOS on the adjacent roadway network, show where we are at now and how the development will affect the LOS.

#### Response:

**Background.** *There is a proposed restaurant and retail development to be located generally in the southeast quadrant of the intersection at State Road 7 / US 441 and W. Copans Road in Margate, Broward County, Florida. The subject site will be developed with a 4,443 square foot Culver's fast food restaurant with drive-through lane and a 4,000 square foot general retail building. Vehicular access will be provided to W. Copans Road, State Road 7 / US 441 and NW 55<sup>th</sup> Avenue.*

**Trip Generation.** *A trip generation analysis for this proposed development was performed in accordance with procedures and data contained within the Institute of Transportation Engineers (ITE) Trip Generation Manual (10<sup>th</sup> Edition). This analysis and the supporting documentation are presented on pages 4 and 5 of the traffic study; however, the net new trips to be generated by this project are summarized below:*

- *Net new daily vehicle trips = 1,167*
- *Net new AM peak hour vehicle trips = 3 (1 inbound and 2 outbound)*
- *Net new PM peak hour vehicle trips = 84 (43 inbound and 41 outbound)*

**Trip Distribution.** *All of the project traffic is expected to impact W. Copans Road / Royal Palm Boulevard and/or State Road 7 / US 441. The trips distribution presented in Figure 2 of the traffic study is summarized below:*

- *30% to and from the north on State Road 7 / US 441*
- *35% to and from the south on State Road 7 / US 441*
- *20% to and from the east on W. Copans Road*
- *15% to and from the west on Royal Palm Boulevard*

**Project Traffic Assignment.** *Based upon the preceding trip distribution and the driveway assignment presented in Figure 3 of the traffic study, the PM peak hour and daily traffic assignment (of net new trips) on the adjacent roadway segments were developed. The results of this analysis are as follows:*

- *W. Copans Road east of State Road 7: 39 PM peak hour trips / 569 daily trips*
- *State Road 7 north of Margate Boulevard: 28 PM peak hour trips / 394 daily trips*

**Existing Capacities, Volumes, & Levels of Service (LOS).** Broward County's latest Roadway Capacity and Level of Service Analysis 2017 & 2040 tables were consulted for this analysis. According to these tables, the existing traffic characteristics for the subject roadway segments are as follows:

- **Roadway ID 842 – W. Copans Road east of State Road 7**
  - Daily
    - Capacity = 37,810 vehicles per day (vpd)
    - Existing Daily Volume = 33,500 vpd
    - Existing LOS = C
  - PM Peak Hour
    - Capacity = 3,401 vehicles per hour (vph)
    - Existing PM Peak Hour Volume = 3,183 vph
    - Existing LOS = C
- **Roadway ID 527 – State Road 7 north of Margate Boulevard**
  - Daily
    - Capacity = 59,900 vehicles per day (vpd)
    - Existing Daily Volume = 51,000 vpd
    - Existing LOS = C
  - PM Peak Hour
    - Capacity = 5,390 vehicles per hour (vph)
    - Existing PM Peak Hour Volume = 4,485 vph
    - Existing LOS = C

**Future Conditions.** The traffic impacts of the subject restaurant and retail project on the adjacent roadway network were considered by adding the net new daily and PM peak hour volumes to the existing roadway volumes documented by Broward County. The resulting volumes and levels of service are documented below:

- **Roadway ID 842 – W. Copans Road east of State Road 7**
  - Daily
    - Daily Volume =  $33,500 \text{ vpd} + 569 \text{ vpd} = 34,069 \text{ vpd}$
    - Resulting LOS = C
  - PM Peak Hour
    - PM Peak Hour Volume =  $3,183 \text{ vph} + 39 \text{ vph} = 3,222 \text{ vph}$
    - Resulting LOS = C
- **Roadway ID 527 – State Road 7 north of Margate Boulevard**
  - Daily
    - Daily Volume =  $51,000 \text{ vpd} + 394 \text{ vpd} = 51,394 \text{ vpd}$
    - Resulting LOS = C
  - PM Peak Hour
    - PM Peak Hour Volume =  $4,485 \text{ vph} + 28 \text{ vph} = 4,513 \text{ vph}$
    - Resulting LOS = C

*As indicated by the foregoing analysis, the roadway segments adjacent to the subject retail and restaurant site at W. Copans Road and State Road 7 both have adequate capacity to accommodate the forecast project traffic and the existing Levels of Service (i.e. LOS "C") will not degrade as a result of this project. Additionally, it is noted that the project impacts on both segments are well below the applicable threshold of 3.0%. More specifically, the project impact on W. Copans Road is projected to be 1.5% on a daily basis and 1.1% in the PM peak hour. And, the project impact on State Road 7 is projected to be 0.7% on a daily basis and 0.5% in the PM peak hour.*