

**MEMORANDUM**

Date: August 8, 2020 Project #: 21539.0
To: Michael C. Robinson
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1211 SW Fifth Avenue, STE 1900
Portland, OR 97204
From: Wayne Kittelson
Project: West Union Gas Station
Subject: Supplemental Trip Generation Information

This memorandum presents an in-depth analysis of the net new average weekday vehicle trips expected to be generated by the proposed West Union Gas station located on the south-east corner of NW West Union Road and NW 185th Avenue in Washington County, OR. Based on the analysis details herein, the proposed development is estimated to add an average of 403 weekday vehicle trips to the segment of NW West Union Road that is adjacent to the site. This increase represents an increase of less than three percent to existing weekday traffic volumes. This conclusion is different from that reported in our Traffic Operations Assessment dated October 18, 2019, and the difference reflects the more accurate characterization we have developed since last October of trip characteristics associated with the site's previous use – Mad Greek Deli Restaurant. This memorandum also uses recent empirical data collected at similar sites in Oregon and the Pacific Northwest to confirm the conservatively high nature of the trip generation characteristics estimated for the proposed new development.

Mad Greek Deli Restaurant Operating Characteristics

To further refine and more accurately represent the operating characteristics of the Mad Greek Deli Restaurant (prior to its closure in 2015), we interviewed Mr. Stefanos Vertopoulos, the brother-in-law of the now-deceased restaurant's owner-operator, and was a frequent visitor, customer, and observer of the restaurant's operations. Mr. Vertopoulos also served as the Trustee of the restaurant owner-operator's estate and was the legal custodian responsible for the sale of the property to the applicant.

Mr. Vertopoulos confirmed that the restaurant was generally open approximately 11 hours per day, typically from 10:00 AM to 9:00 PM. For the first seven or eight hours of each day (that is, between about 10:00 am and 5:00 – 6:00 pm), the restaurant operated according to what the Institute of Transportation Engineers (ITE) *Trip Generation Manual (10th Edition)* would characterize as a "Fast Casual" restaurant. This characterization is a result of the following characteristics:

- **No wait staff or table service.** Orders were made and paid for first before food was prepared.

- **Freshly-made food.** The food was made at the time the order was placed as opposed to having been pre-assembled, with higher-quality ingredients and more unique made-to-order menu items.
- **Priced around \$10 per typical meal.** This compares with \$5.00 for a fast-food meal and \$15 for a high-turnover sit-down restaurant.
- **An inviting ambience** characterized by a lot of activity and chatter.
- **Restaurant staff were generally wage workers,** although some customers did also tip.

Mr. Vertopoulos also reported that, during the evening hours, the restaurant operated differently and in a way that ITE's *Trip Generation (10th Edition)* Manual would characterize as "High-Turnover Sit-Down" restaurant:

- **Wait staff and table service was provided.** Orders were made from a menu and payment was made after the meal had been served, with tips being customary.
- **No reservations** were made – customers were seated as they arrived.
- **\$15-\$20 for a typical meal.** Alcoholic beverages were also available.
- **Duration of stay was typically between 1 and 1 ½ hours.**

Based on the restaurant operations information provided by Mr. Vertopoulos, we conclude that the most accurate ITE representation of Mad Greek Deli Restaurant per ITE's *Trip Generation* Land Use Categories is a "Fast Casual" restaurant during the daytime hours (i.e., about two-thirds of its operating hours) and a "High-Turnover Sit-Down" restaurant during the evening hours (i.e., about one-third of its operating hours).

Empirical Confirmation of the ITE TRIP GENERATION Estimates Used for the Proposed Development

The October 2019 Traffic Operations Assessment Report used Land Use Code 945 (Gas Station with Convenience Store) from the ITE *Trip Generation Manual* with the number of fueling positions as the independent variable to estimate the proposed development's likely trip generating characteristics. Washington County staff have suggested that it might have been more appropriate to apply Land Use Category Code 960 (Super Convenience Market/Gas Station) instead. While either approach is reasonable, ITE's *Trip Generation Manual* also states that, where possible, the most accurate method for estimating the trip generating characteristics of a particular land use is through empirical data collected at similar sites within the area.

The applicant operates numerous Chevron gas stations with convenience stores throughout the region. Annual (2019) sales volume information was provided by the applicant for the applicant's highest-performing Chevron "gas station with convenience store" facility in the area, along with the following additional information:

- Of all the gasoline brands, Chevron is the number one marketer with respect to sales volume.

- The data provided is for the Chevron “gas station with convenience store” facility located at the Woodburn Interchange on I-5 (hereafter referred to as the “Woodburn Chevron”).
 - In 2019 this facility ranked #2 in gasoline sales volume for all of the Chevron facilities located in the Pacific Northwest.
 - The number of fueling stations provided at this gas station (12) is identical to the number in the proposed development
 - The size of the convenience store at this gas station (approximately 4,500 square feet) is nearly the same size as the convenience store in the proposed development.
 - The average annual daily traffic (AADT) on I-5 in the vicinity of the gas station was 94,100 vehicles per day (vpd) in 2018, and the AADT on Highway 214 was 22,200 vpd. Both traffic counts are significantly higher than the existing average weekday traffic volume on West Union Road in the vicinity of the proposed development (approximately 15,000 vpd).
 - Only about 25% of the transactions at this facility do not include the purchase of gasoline.
 - The average amount of gas sold per transaction is ten (10) gallons.
 - In 2019 this facility sold 3,590,287 gallons of fuel.
 - Weekend activity is generally higher than weekday activity, meaning that an average daily calculation based on annual sales volume will overestimate the sales volume on an average weekday.

On this basis, the average annual weekday trips generated by the Chevron station at the I-5/Woodburn interchange can be calculated as follows:

$$\{[(3,590,287 \text{ gal/yr}) * (2 \text{ trip ends/customer transaction})] / [(365 \text{ days/yr}) * (10 \text{ gal/transaction})]\} * 1.25 = 2,459 \text{ avg wkday trips}$$

The October 2019 Traffic Operations Assessment Report estimated on the basis of Land Use Code 945 that the proposed development will generate 2,464 average weekday trips, which compares very favorably to the calculation result given above. It is important to note that the Woodburn Chevron station is nearly identical to the proposed development in all respects except the volume of traffic on the adjacent roadways, which is nearly eight times higher than the volume on West Union Road. Because of this significant exposure discrepancy, it is concluded that the Traffic Operations Assessment Report’s estimate of 2,464 average weekday trips is a conservatively high estimate.

Average Daily Weekday Net Trip Generation

The following table provides details supporting the number of net average daily weekday trips expected to be generated by the proposed development.

Land Use	ITE Land Use Code	Size	Weekday Daily Trips	Pass-by Trips	Net Total Weekday Daily Trips
Gas station with Convenience Store	945	12 Fueling Positions	2,464	-1,380	1,084
Mad Greek Deli Restaurant – Fast Casual Operation (2/3)	930	4,828 Square Feet	1,195 ¹	-514 ¹	681
Mad Greek Deli Restaurant – High Turnover Sit-Down (1/3)	932				
Net New Weekday Daily Trips (Proposed Gas Station minus Mad Greek Deli)					403

¹ Represents a weighted average trip generation of 2/3 Fast Casual Restaurant and 1/3 High Turnover Sit Down Restaurant.

The 403 net new average weekday daily trips expected to result from the proposed development are reflective of the net new trips generated by the proposed development (1,084) less the net new trips that were being generated by the Mad Greek Deli Restaurant (681) when it was operating on the same site.

This result is higher than what was reported in the October 2019 Traffic Operations Assessment; however, we find it to be a more accurate expectation because it relies on better background information than was available at the time the October 2019 report was prepared. The higher estimate that results from this supplemental analysis is not a substantial enough change to affect the findings and conclusions of the October 2019 Traffic Operations Assessment. It may also be important to recognize that the 403 net new weekday daily trip-ends represent a less than three percent increase to the existing traffic volume on West Union Road immediately adjacent to the development site.