



TRAFFIC PLANNING AND DESIGN, INC.

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**October 18, 2023**

Ms. Caroline Churchill, P.E.  
Kimley-Horn  
10 Lea Avenue  
Nashville, TN 37210

**RE: Wawa Parking Analysis**

*Hilltown, Bucks County, PA / Millsboro, Sussex County, DE*  
TPD No. WAWA.00674

Dear Ms. Churchill:

As requested, Traffic Planning and Design, Inc. (TPD) has completed a parking analysis for purposes of determining the parking needs of typical Wawa Convenience Market with Gasoline facilities. This analysis was conducted at two (2) existing Wawa locations. The first site is located at the intersection of US 113 & State Route 30 (Laurel Road) in Millsboro, Delaware and the second site is located at the intersection of PA 113 (Souderton Road) & PA 313 in Hilltown, Pennsylvania. The Millsboro, DE Wawa contains a 5,566 sf. convenience store with 6 gasoline pumps (12 fueling positions), while the Hilltown, PA Wawa contains a 5,585 sf. convenience store with 8 gasoline pumps (16 fueling positions). Parking data was collected at these two facilities and the results are summarized below.

**EXISTING PARKING DATA**

As shown in **Figure 1**, the Millsboro, DE Wawa parking lot consists of approximately 42 dedicated passenger vehicle parking spaces (striped) and 12 fueling positions. Additionally, when the striped parking is fully occupied, passenger and oversized vehicles (i.e. tractor trailers, landscaping trucks, etc.) utilize the unmarked zones within the existing drive aisles.

As shown in **Figure 2**, the Hilltown, PA Wawa parking lot consists of approximately 66 dedicated passenger vehicle parking spaces (striped) and 16 fueling positions. Additionally, as observed at times, passenger and oversized vehicles (i.e. tractor trailers, landscaping trucks, etc.) utilize the unmarked zones within the drive aisles, more out of convenience than lack of available parking.

For the data collection purposes, TPD deployed Miovision cameras within the existing parking areas around the Millsboro, DE Wawa during the week of Friday May 20, 2022 to Thursday May 26, 2022. The cameras recorded video of the parking on-site each day between 6:00 A.M. to 9:00 P.M. Similarly, TPD deployed Miovision cameras within the existing parking areas around the Hilltown Wawa during the day of October 5, 2022 as well as conducted on-site parking observations. The cameras recorded video of the parking on-site each day between 12:00 A.M. to 11:59 P.M, while on-site parking observations were taken from 6:00 A.M. to 9:00 P.M. TPD then utilized this raw data and analyzed how each site operated from a parking perspective.

**Table 1** summarizes the existing parking operations for the average and maximum observed parking occupancy with the raw data is provided in **Attachment A**.

**TABLE 1**  
**EXISTING PARKING OPERATIONS**

Parking Analysis	Millsboro, DE (5,566 sf. w/ 12 fuel stations)	Hilltown, PA (5,585 sf. w/ 16 fuel stations)
Average Parking Occupancy	32 spaces	27 spaces
Average Parking Occupancy ratio per 1,000 sf.	5.75 spaces	4.83 spaces
Average Parking Occupancy ratio per fueling station	2.66 spaces	1.69 spaces
Maximum Parking Occupancy	<b>48 spaces</b>	<b>43 spaces</b>
Maximum Parking Occupancy ratio per 1,000 sf.	<b>8.62 spaces</b>	<b>7.70 spaces</b>
Maximum Parking Occupancy ratio per fueling station	<b>4.00 spaces</b>	<b>2.69 spaces</b>

Based on **Table 1**, during the course of a typical day, the Wawa sites observed averaged between 27 to 32 parking spaces occupied, however during the peak periods (i.e. A.M. peak, midday peak, and P.M. peak) the maximum parking occupancy observed/recorded was between 43 to 48 parking spaces occupied.

The above data, as well as the data contained in **Attachment A**, represents the number of parking spaces occupied. However, as is typical practice for TPD based on industry guidance, and in order to avoid driver frustration when circulating the parking lot looking for a parking space, TPD typically suggests providing a parking supply which provides a surplus above and beyond the observed/calculated parking occupancy when determining the number of off-street parking spaces to be provided. For this purpose and this type of use (retail/service), TPD typically suggests a 10% parking surplus be employed. Applying this surplus to the maximum parking occupancy provided in **Table 1**, yields the need to provide between 48 and 53 off-street parking spaces for a typical Wawa facility.

## EXISTING PARKING OBSERVATIONS

The following observations were made during a review of the videos conducted as part of the data collected:

- » Wawa deliveries usually occur during the off-peak hours and will block dedicated parking spaces for a period of time. Additionally, Wawa performs maintenance cleaning (ex. power washing of on-site parking) at all of their sites during the off-peak hours and will close some dedicated parking spaces for a brief period of time.
- » Outside vendor truck deliveries (ex. Coca-Cola) occur occasionally during the off-peak hours but occasionally will occur during the A.M. peak hours and will block drive aisles and dedicated parking spaces for a period of time.

## ADDITIONAL PARKING OBSERVATIONS

It should also be noted that neither the Millsboro, DE Wawa site, nor the Hilltown, PA site provided for dedicated EV charging parking spaces. This is important to note, as TPD has observed these spaces being a draw to Wawa sites. These parking spaces are only occupied by electric vehicles and tend to remain occupied for longer periods of time when compared to a non-EV charging space.

## CONCLUSIONS

***The following conclusions were reached based on the existing parking data and observations made at typical Wawa Convenience Markets with Gasoline:***

- » ***Based on the existing parking data presented in Table 1, the maximum parking occupancy observed for a typical Wawa range from 7.70 to 8.62 parking spaces per 1,000 sf. or 2.69 to 4.0 parking spaces per fueling station.***
- » ***In order to avoid driver frustration when circulating the parking lot looking for a parking space, TPD typically suggests providing a parking supply which provides a surplus above and beyond the observed/calculated parking occupancy when determining the number of off-street parking spaces to be provided. For this purpose and this type of use (retail/service), TPD typically suggests a 10% parking surplus be employed.***
- » ***TPD has observed that EV charging spaces are a draw to Wawa sites. These parking spaces are only occupied by electric vehicles and tend to remain occupied for longer periods of time when compared to a non-EV charging space. Therefore, they are typically treated as "additional" parking spaces above and beyond what is needed for efficient operations of the Wawa facility.***

If any of you have any questions or require any additional information, please do not hesitate to contact us.

Sincerely,  
TRAFFIC PLANNING AND DESIGN, INC.



Matthew I. Hammond, P.E.  
Executive Vice President  
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Figures 1 & 2  
Attachment A: Parking Data

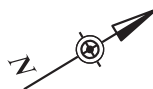
cc: TPD Files



**KEY:**

**SCHEMATIC DRAWING: NOT TO SCALE**

- - NUMBER OF PARKING SPACES (TOTAL: 42)
- - NUMBER OF FUEL STATIONS (TOTAL: 12)
- - NUMBER OF OVERFLOW/OVERSIZE (ILLEGAL) ZONES



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**FIGURE 1**

MILLSBORO, DELAWARE - WAWA  
 5,566 SF. AND 12 FUEL STATIONS





**KEY:**  
**SCHEMATIC DRAWING:NOT TO SCALE**  
 — - NUMBER OF PARKING SPACES (TOTAL: 66)  
 — - NUMBER OF FUEL STATIONS (TOTAL: 16)  
 — - NUMBER OF OVERFLOW (ILLEGAL) ZONES



**TPD**  
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FIGURE 2

HILLTOWN, PENNSYLVANIA - WAWA  
 5,585 SF. AND 16 FUEL STATIONS

# Attachment A: Parking Data

Avg.	32
Max.	48

Thursday, October 5, 2023 (12:00 A.M. to 11:00 P.M.)

	Fuel Station	Occupied Fuel Station	Total (# of available spaces)	Total (# of occupied spaces)	Total (# of occupied oversize/overflow spaces)	Total (# of available spaces)	Total (# of occupied spaces)
12:00 AM*	16	4	66	11	0	66	11
1:00 AM*	16	4	66	22	0	66	22
2:00 AM*	16	4	66	29	0	66	29
3:00 AM*	16	4	66	32	0	66	32
4:00 AM*	16	4	66	36	0	66	36
5:00 AM*	16	4	66	33	0	66	33
6:00 AM	16	8	66	33	0	66	33
7:00 AM	16	7	66	42	1	66	43
8:00 AM	16	6	66	37	1	66	38
9:00 AM	16	11	66	36	0	66	36
10:00 AM	16	5	66	33	0	66	33
11:00 AM	16	8	66	30	2	66	32
12:00 PM	16	4	66	33	1	66	34
1:00 PM	16	12	66	33	3	66	36
2:00 PM	16	6	66	37	0	66	37
3:00 PM	16	4	66	25	1	66	26
4:00 PM	16	9	66	23	1	66	24
5:00 PM	16	8	66	25	0	66	25
6:00 PM	16	7	66	22	0	66	22
7:00 PM	16	5	66	24	0	66	24
8:00 PM	16	4	66	21	1	66	22
9:00 PM	16	4	66	21	0	66	21
10:00 PM*	16	4	66	1	0	66	1
11:00 PM*	16	2	66	0	0	66	0

\*Miovision Camera Count

Avg.	27
Max.	43

## Miovision Camera Count

[illegible]