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WCON0000

## MEMORANDUM

**DRAFT**

**TO:** Mike English, Borough Manager

**FROM:** Brian Keaveney

**DATE:** January 18, 2019

**RE:** **Traffic & Parking Evaluation  
Ford Street & Moorehead Avenue**

Mike,

As requested during the November 2018 Borough Council meeting, we have completed an evaluation of the current traffic flow and parking conditions on the above referenced roadways. The traffic and parking demand data that we had collected was submitted to you on December 21, 2018. Since that time, we have completed further analysis regarding short-term options to both increase the number of parking spaces available along Ford Street and Moorehead Avenue, and measures that may reduce the cut-through traffic in these areas.

### Data Collection

We have obtained the following information in order to assess current traffic flow and parking conditions on the above referenced roadways, including:

- Parking occupancy counts (7:00-9:00am, 11:00am-1:00pm, 5:00-7:00pm on a weekday)
  - Moorehead Avenue, from Crawford Avenue to Elizabeth Street;
  - Ford Street, from Front Street to Matsonford Road;
- Weekday AM & PM Peak Hour Traffic Volume Counts (by individual turning movement) at the following intersections:
  1. Front Street (SR 0023) & Ford Street;
  2. Front Street (SR 0023) & William Street;
  3. Matsonford Road (SR 3016) & Ford Street;
  4. Ford Street & New DeHaven Street/Church Street;
  5. Ford Street & Elizabeth Street;
  6. Ford Street & William Street/Nathans Place;
  7. Moorehead Avenue & Crawford Street/Front Street (SR 0023);
- Traffic volume and speed data along Ford Street and Moorehead Avenue, provided by the West Conshohocken Police Department.

### Parking Occupancy Observations

Along Moorehead Avenue, between Crawford Avenue and Elizabeth Street, we noted the following information:

- During the morning (7-9am), a maximum of 37/55 spaces were occupied (68%). We would note that 5 spots were blocked in area of I-76 overpass for a PennDOT contractor
- During the mid-day (11-1pm), a maximum of 20/55 spaces were occupied (37%). We would note that 4 spots were blocked in area of I-76 overpass for a PennDOT contractor
- During the late afternoon (5-7pm), a maximum of 30/55 spaces were occupied (55%). We would note that 6 spots in area of I-76 overpass for a PennDOT contractor

Along Ford Street, between Front Street and Matsonford Road, we noted the following information:

- During the morning (7-9am), a maximum of 54/70 spaces were occupied (78%), with the peak occupancy occurring from 7am-7:15am. We would note that east of Cedar, the occupancy was 100% from 7am-7:45am, and then only dropped to 85% at the lowest point.
- During the mid-day (11-1pm), a maximum of 35/70 spaces were occupied (50%). In the area east of Cedar, the occupancy ranged from low of 67% to 100%. The 100% occupancy occurred only for one (1) 15-minute period.
- During the late afternoon (5-7pm), a maximum of 62/70 spaces were occupied (89%) at 6:45pm. East of Cedar, the occupancy was 100% from 5:45-6:15, and again from 6:30-7:00pm.

Other parking related observations:

- There was limited use of the 11-space lot at the west end of Moorehead, with only 5 cars there during the AM and PM peaks, and 1 during the mid-day peak.
- As shown above, there is heavy parking demand along Ford Street, east of Cedar, and it appears that the demand is residential in nature as shown by the AM Peak occupancy. This is the roadway segment that may benefit the most by a one-way conversion, and supports the comments made at the public meeting.
- There was 1 illegally parked vehicle on Moorehead (in addition to those measured on the attached summary in legal spaces), and anywhere from 1-2 illegally parked vehicles along Ford in the areas of Simon/Merion and in the area the Firehouse at every point during the days observed.

**TABLE 1**  
Summary of Parking Occupancy

Roadway	AM Peak	Mid-Day Peak	PM Peak
Moorehead Avenue	37/55 (68%)	20/55 (37%)	30/55 (55%)
Ford Street	54/70 (78%)	35/70 (50%)	62/70 (89%)

# of occupied spaces/# of available spaces (% occupancy)

**Traffic Volume Observations**

Based upon the traffic counts completed at the study area intersections, it is apparent that there is a high volume of non-residential traffic utilizing Ford Street, William Street, Elizabeth Street, and Moorehead Avenue. Table 2 outlines the total 2-way traffic volume on each of these roadways during the weekday morning and afternoon peak hours.

**Table 2**  
 Summary of Peak Hour Traffic Volumes

Roadway Segment	AM Peak	PM Peak
Ford Street, between Church Street & Elizabeth Street	399 EB/141 WB – 540 Total	328 EB/98 WB – 426 Total
Ford Street, between Elizabeth Street & William Street	303 EB/109 WB – 412 Total	214 EB/87 WB – 301 Total
Ford Street, between William Street & Front Street	93 EB/43 WB – 136 Total	130 EB/18 W – 148 Total
William Street, between Ford Street & Front Street	210 EB/61 WB – 271 Total	74 EB/70 WB – 144 Total
Elizabeth Street, between Ford Street and Moorehead Avenue	110 SB/41 NB – 151 Total	133 SB/21 NB – 154 Total
Moorehead Avenue, between Elizabeth Street & Crawford Avenue	147 EB/23 WB – 170 Total	126 EB/28 WB – 154 Total

**Traffic Speed Observations**

The West Conshohocken Police Department collected traffic volume and speed data along both Ford Street and Moorehead Avenue. A summary of the results for Ford Street is shown in Table 3, and for Moorehead Avenue in Table 4.

**Table 3**  
 Ford Street Speed Observations

Time Period	Avg. Weekday Daily Traffic	Average Weekend Daily Traffic	Average Speed (mph)	85% Speed (mph)	% exceeding 36 mph
10-8-18 - 10-14-18	1,869	1,103	19.3	29.0	.01%
10-15-18 - 10-21-18	1,989	1,065	19.4	29.0	.01%
10-29-18 – 11-4-18	2,023	1,042	19.3	29.0	.04%

**Table 4**  
 Moorehead Avenue Speed Observations

Date	Avg. Weekday Traffic	Average Weekend Daily Traffic	Average Speed (mph)	85% Speed (mph)	% exceeding 36 mph
8-27-18 – 9-2-18	657	215	23.3	30.0	0.40%
10-8-18 - 10-14-18	701	275	23.1	30.0	0.64%
10-29-18 – 11-4-18	680	264	22.4	29.0	0.48%

## Analysis

To create more space for resident parking, the following options were considered:

1. Converting two-way streets to one-way streets, to allow additional on-street parking on both sides of the roadway;
2. Increasing off-street parking by either expanding existing lots, or constructing new parking lots;
3. Consider parking permits for Borough residents, which typically are restricted to defined daily time periods. Based upon the parking occupancy data, however, it does not appear that the implementation of a permit program would create many open parking spaces.

Regarding option 1, while the implementation of one-way street segments would yield more on-street parking, the existing traffic in the restricted direction of those streets would be diverted to adjacent roadways. It's also important to note that one-way streets often impose an inconvenience to area residents if implemented where there is not a convenient adjacent two-way or opposite direction one-way roadway.

In addition, the implementation of one-way streets can have impacts to public safety and service vehicle travel through the Borough. In order to address these concerns, meetings were held with the West Conshohocken Police Department and members of the George Clay Fire Company on Friday 1/4/19, and on Tuesday 1/8/19. During the 1/8/19 meeting, the George Clay Fire Company demonstrated turning movements using their ladder truck from Ford Street onto several of the side streets to determine how much area would be available for additional parking if the road were made one-way. The George Clay Fire Company also provided the dimensions of their ladder truck, so that the turning movement of the truck on the Borough Streets within the study area could be modeled to scale on the attached CAD drawings.

In For the purpose of this analysis, we noted that the conversion of the following roadway segments to one-way could create the need for residents either leaving or returning home to travel an additional 2,900' to 3,600' on average, and travel on Front Street through peak hour conditions:

- Ford Street, between Church Street and William Street
- Elizabeth Street, between Ford Street and Moorehead Avenue
- Moorehead Avenue, between Elizabeth Street and Front Street

As such, the most practical section of roadway to consider converting to one-way operation, because of the adjacent segment of William Street and the connecting minor streets, is the section of Ford Street between William Street and Front Street. This is also the area that appears to have the parking spaces with the highest occupancy rate, which indicates a high parking demand.

In order to assess the impact to traffic on the adjacent roadways with the implementation of a one-way operation, we created traffic models that evaluated the existing roadway network peak hour conditions, the conditions if Ford Street were made one-way Eastbound (towards Front Street) and the conditions if Ford Street were made one-way westbound (away from Front Street). When

evaluating traffic conditions at intersections, a rating system referred to as ‘Level of Service’ is typically used to rate the average delay experienced by users on a scale of A through F. The results of these analysis are summarized in Table 5.

**Table 5**  
 Ford Street One-Way Impact Analysis

Intersection	Approach	Existing Conditions (2018)		Ford Street One-Way EB		Ford Street One-Way WB	
		AM	PM	AM	PM	AM	PM
Front Street & William Street (signalized)	EB L/T/R	E (55.5) 130/201	B (15.0) 12/41	D (55.5) 130/201	B (15.0) 12/41	E (55.4) 155/239	B (11.1) 12/55
<b>Overall Intersection</b>		<b>B (16.5)</b>	<b>A (9.0)</b>	<b>B (16.5)</b>	<b>A (9.0)</b>	<b>B (18.1)</b>	<b>A (9.4)</b>
Ford Street & Elizabeth Street (unsignalized)	EB T/R	B (10.5) 75	A (9.0) 50	B (10.5) 75	A (9.0) 50	B (10.4) 75	A (8.9) 50
	WB L/T	A (8.2) 25	A (7.8) 25	A (8.2) 25	A (7.8) 25	A (8.2) 25	A (7.8) 25
	NB L/R	A (8.5) 25	A (7.9) 25	A (8.5) 25	A (7.9) 25	A (8.5) 25	A (7.9) 25
<b>Overall Intersection</b>		<b>A (10.0)</b>	<b>A (8.7)</b>	<b>A (10.0)</b>	<b>A (8.7)</b>	<b>A (9.8)</b>	<b>A (8.6)</b>
Crawford Avenue & Moorehead Avenue, Spring Garden Street (signalized)	EB L/T/R	E (70.5) 125/179	F (94.2) 169/261	E (70.5) 125/179	F (94.2) 169/261	E (77.2) 166/254	F (134.8) 230/340
<b>Overall Intersection</b>		<b>F (*)</b>	<b>F (*)</b>	<b>F (*)</b>	<b>F (*)</b>	<b>F (*)</b>	<b>F (*)</b>

*Level of Service (avg. delay in seconds) avg/max queue*

Regarding Option 2, we would note that two (2) previous concepts have been studied for the construction of new off-street parking lots. One option involved constructing a new parking lot between the Ford Street properties and Matsonford Road. This option would yield 24 new spaces but would involve significant design and permitting issues due to the drainage in the area and would also likely have a significant construction cost. The second option involved constructing a new alley behind the Moorehead Avenue residential properties and Matsonford Road. This new alley would connect to Prospect Street, a paper street between 208 and 196 Moorehead Avenue. This option would yield approximately 15 new spaces and would also likely have a significant construction cost. The Borough can continue to look for opportunities to develop new parking on other properties along Ford Street.

Regarding Option 3, the Borough Solicitor’s office did evaluate the issues associated with Permit Parking in the past (see attached memo dated 6/10/2013). With the data contained in this memo, a new discussion regarding the benefits of permit parking could be held, although as stated previously our evaluation of the parking occupancy data indicates that the implementation of a permit parking initiative may not yield a large number of available parking spaces beyond what exists today.

Table 6 summarizes the parking concepts considered to date.

**Table 6**  
 Summary of Parking Alternatives Ford Street

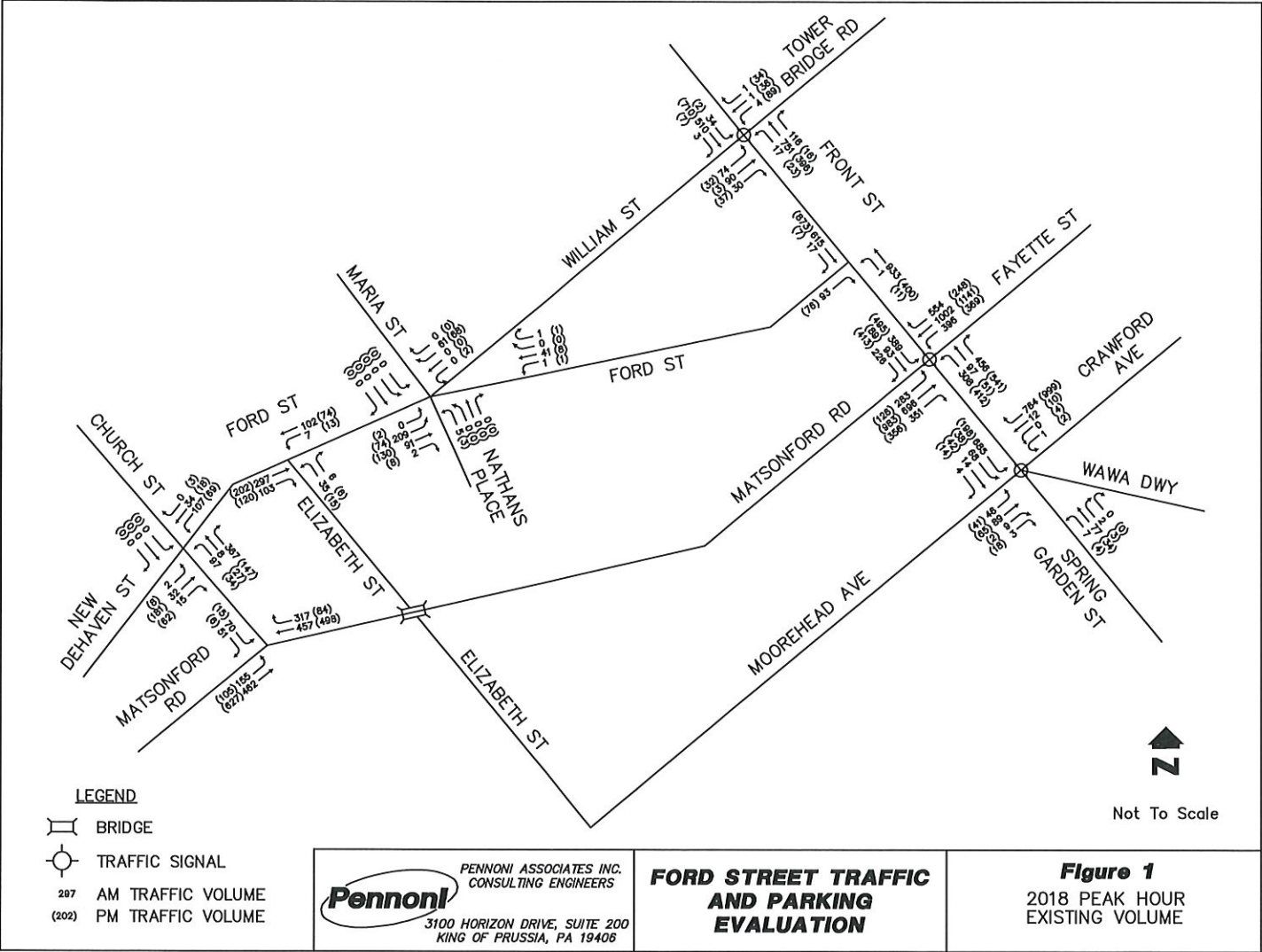
Alternative	New Spaces	Potential Lost Spaces	Net Change	Preliminary Estimate of Probable Cost	Traffic Impact to Roadway Network
Ford Street EB One-Way	23	6	+17	\$15,000	Minimal impact, low volume of turns from Front Street would divert to William Street.
Ford Street WB One-Way	22	-6	+16	\$15,000	Would impact GCFC and WCPD response route, increase delay at William Street and Moorehead Avenue
Construct new parking behind homes, between Ford & Matsonford	24	0	+24	\$250,000	No Change
Expand Existing Lot at Ford & Matsonford	10	0	+10	\$150,000	No Change
Construct Prospect Street and Parking behind Moorehead Avenue	15	0	+15	\$150,000	No Change

In summary, restricting traffic flow to one-way on Ford Street appears to be a feasible short-term strategy for providing additional on-street parking in the area where the parking occupancy is near 100% during significant periods of time. An eastbound one-way scenario appears to have the least disruption to traffic on adjacent streets, and the least disruption to the George Clay Fire Company and WCPD response routes to Front Street. However, Front Street would continue to serve as a parallel cut-through route for Matsonford Road.

We trust that this information is useful for further Council discussions regarding this matter. If you need additional information or would like to discuss further, please don't hesitate to contact me.

- Attachments:
- A - Existing Peak Hour Traffic Volume Figure
  - B - Parking Occupancy Data – Moorehead Avenue
  - C - Parking Occupancy Data – Ford Street
  - D - Speed Data – Ford Street
  - E – Speed Data – Moorehead Avenue
  - F – Fire Truck Turning Diagrams – Ford Street EB One-Way
  - G – Fire Truck Turning Diagrams – Ford Street WB One-Way
  - H – Memo Regarding Permit Parking
  - I - Parking Concept – Lot Between Ford Street and Matsonford Road
  - J – Parking Concept – Alley/Prospect Street Connection to Moorehead Avenue

cc: Mayor & Borough Council  
 Khaled Hassan, PE, Borough Engineer



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**FORD STREET TRAFFIC AND PARKING EVALUATION**