

## City of Alexandria, Virginia

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### MEMORANDUM

**DATE:** MAY 23, 2016  
**TO:** MEMBERS OF THE TRAFFIC AND PARKING BOARD  
**FROM:** T&ES STAFF  
**SUBJECT:** DOCKET ITEM # 8

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**ISSUE:** Consideration of a request to install a traffic signal at North Van Dorn Street and Menokin Drive.

**APPLICANT:** T&ES Staff

**LOCATION:** North Van Dorn Street at Menokin Drive

**STAFF RECOMMENDATION:**

That the Board recommends that City Council Drive authorizes installation of a new traffic signal at North Van Dorn Street and Menokin Drive pursuant to City Code Section 10-2-7

**DISCUSSION:** On April 25, 2016, the Traffic and Parking Board approved Phase 1 of the the Complete Street redesign of North Van Dorn Street. In the current configuration, there is a right slip lane from Menokin Drive onto North Van Dorn Street that is removed in the approved plan, which includes new sidewalks and crosswalks (Figure 2). The number of lanes at the intersection does not change with the new design, but with the removal of this slip lane the signal is needed in order to process the right turns and prevent traffic back up onto King Street.

Without the installation of the signal at this intersection, stop controls would need to be provided in order to provide safe pedestrian crossings. In the AM peak period, the queue on North Van Dorn Street would extend 496 feet if a stop sign were required, but the signal improves the queue to only 201' (Figure 2). The intersection delay improves to 14 from 23 seconds, or to level of service (LOS) B from C. In the PM peak, the queue on North Van Dorn Street is reduced by more than half (from 89' to 41') with a signal.

In the PM peak, the queue is 341 feet with a stop sign present, which extends onto King Street and creates an unsafe condition. Because motorists are exiting I395 onto King Street at this location, the speeds are high and a queue of vehicles on this roadway creates a hazard. With the signal, the queue only extends 38 feet, and the overall intersection delay improves to a LOS A from C with a delay of only 9 seconds. See Figure 3 for queues and intersection level of service.

The new signal enables the installation of three new crosswalks with pedestrian count down signals and a Leading Pedestrian Interval (LPI) to provide safer, conflict free crossing times for pedestrians.

Due to the configuration of the intersection and unique characteristics of the roadway whereby the major and minor street change due to volumes during different peak hours, the intersection does not meet an Manual on Uniform Traffic Control Devices (MUTCD) warrant. However, because of the improved safety for all roadway users with the redesign of this intersection, staff recommends the installation of a signal to maintain traffic flow and prevent congestion.

**PUBLIC OUTREACH:**

October 22, 2015 - Park Place Condominiums HOA to discuss issues and concerns  
January 28, 2016 - Park Place Condominiums HOA to present options and get feedback  
February 23, 2016 – Fairlington United Methodist Church and Preschool  
February 16, 2016 – Alexandria Bicycle and Pedestrian Advisory Committee  
March 15, 2016 – Public Meeting to present proposed roadway design  
April 25, 2016 – Traffic and Parking Board Public Hearing

Letters of support for the project from the Fairlington United Methodist Church, Fairlington Preschool and the Alexandria Bicycle and Pedestrian Advisory Committee are included in Attachment 2.

**EVALUATION:** During fall 2016, staff will monitor the intersections of North Van Dorn Street and Menokin Drive to evaluate queue lengths and determine if any additional signal timing changes need to be made to process vehicles and provide safe crossings for pedestrians. In fall 2016, data will be collected to determine if speeds have been reduced along the corridor. As with all complete streets projects, a crash analysis will be conducted to determine if there has been a reduction after installation of the project.

Figure 2 – Menokin Drive at North Van Dorn Street and at King Street Service Road

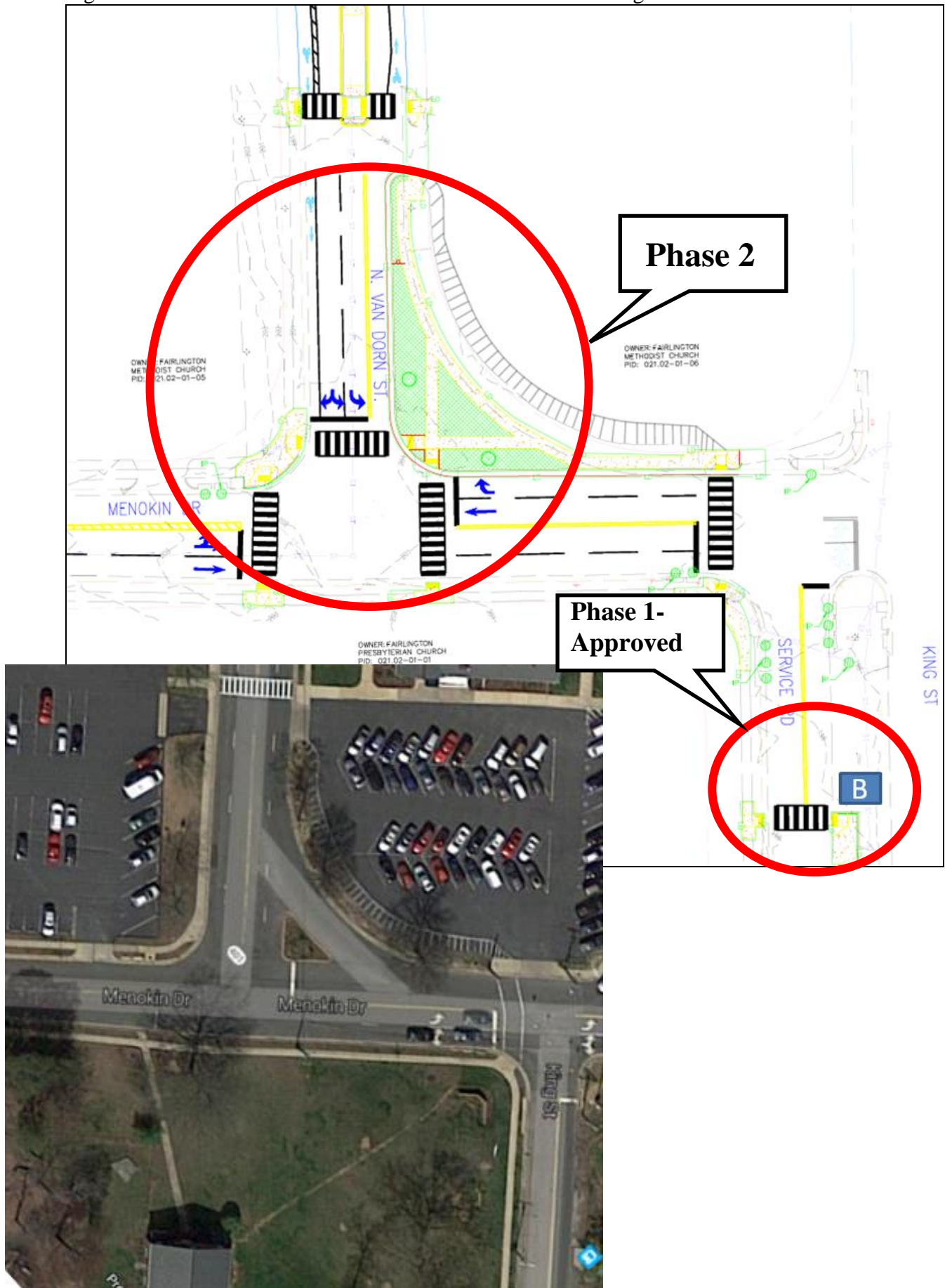


FIGURE 2

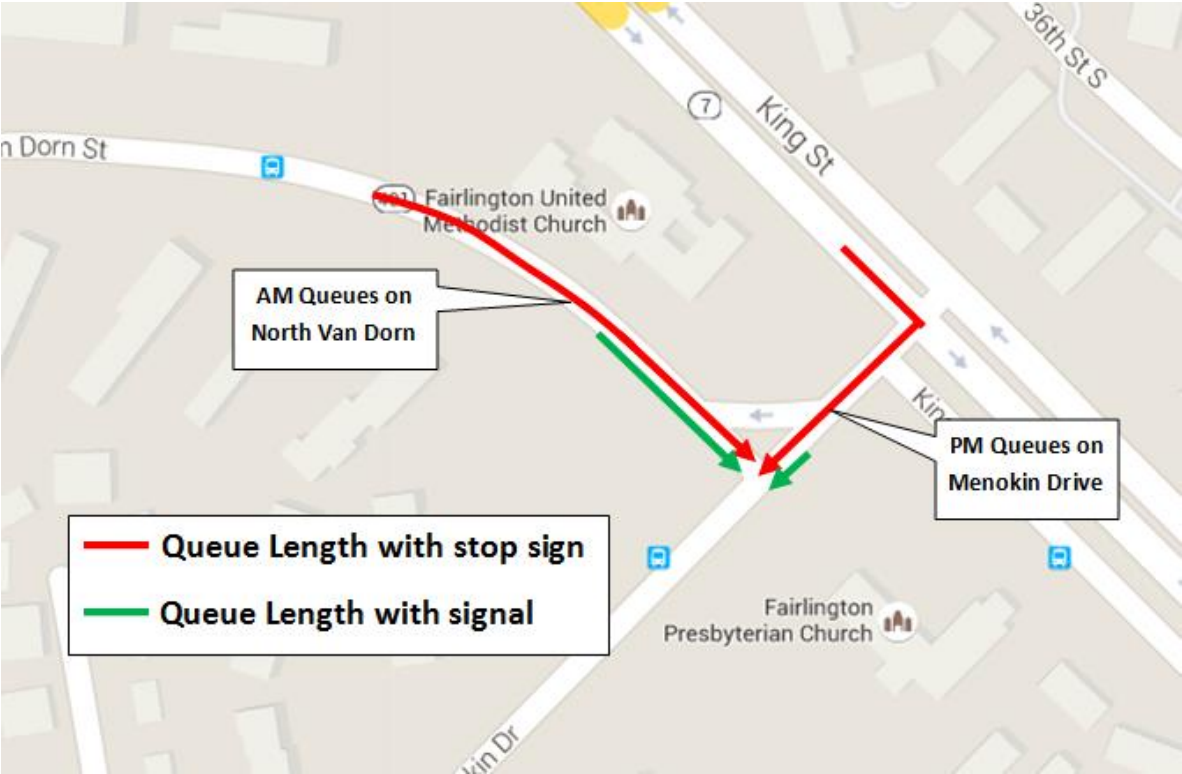


FIGURE 3

AM PEAK (HCM ANALYSIS)	DELAY (sec) / LOS /QUEUE (ft)	DELAY (sec) / LOS /QUEUE (ft)	DELAY (sec) / LOS /QUEUE (ft)	Intersection HCM LOS	Overall Delay
<i>Van Dorn and Menokin</i>	<i>Van Dorn East Bound Approach</i>	<i>Menokin North Bound Approach</i>	<i>Menokin South Bound Approach</i>		
STOP sign Conditions	28.5 / D / 496	9.8 / A / 27	10.1 / B / (48_T) & (87_R)	C	23.3 sec
Signal Conditions (Actuated_Uncoordinated)_preferred option 1	13.4 / B / 201	23.2 / C / 44	12.3 / B / (69_T) & (16_R)	B	14.0 sec

PM PEAK (HCM ANALYSIS)	DELAY (sec) / LOS /QUEUE (ft)	DELAY (sec) / LOS /QUEUE (ft)	DELAY (sec) / LOS /QUEUE (ft)	Intersection HCM LOS	Overall Delay
<i>Van Dorn and Menokin</i>	<i>Van Dorn East Bound Approach</i>	<i>Menokin North Bound Approach</i>	<i>Menokin South Bound Approach</i>		
STOP sign Conditions	9.7 / A / 89	8.1 / A / 14	19.6 / C / (33_T) & (341_R)	C	16.9 sec
Signal Conditions (Actuated_Uncoordinated)	8.3 / A / 41	14.6 / B / 26	8.0 / A / (61_T) & (38_R)	A	8.6 sec