

City of Alexandria, Virginia

MEMORANDUM

DATE: MAY 5, 2008

TO: THE HONORABLE MAYOR AND MEMBERS OF CITY COUNCIL

FROM: JAMES K. HARTMANN, CITY MANAGER

SUBJECT: CONSIDERATION OF INSTALLATION OF A PEDESTRIAN-ACTUATED HYBRID TRAFFIC SIGNAL AT THE INTERSECTION OF NORTH VAN DORN STREET AND MARIS AVENUE

ISSUE: Installation of a pedestrian-actuated hybrid traffic signal at the intersection of North Van Dorn Street and Maris Avenue.

RECOMMENDATION: That City Council authorize installation of a new pedestrian-actuated hybrid traffic signal at the intersection of North Van Dorn Street and Maris Avenue.

BACKGROUND: The "T" intersection of Maris Avenue and North Van Dorn Street (see Attachment I) is difficult for pedestrians wishing to cross North Van Dorn Street, a four-lane arterial road with a posted speed limit of 35 mph and average daily traffic of 32,000 vehicles. Crosswalks across Van Dorn Street are marked at this midblock location, but traffic is not required to stop at a signal or sign. Drivers routinely fail to yield to pedestrians and the heavy, high-speed traffic – particularly at rush hours – makes this crossing challenging for pedestrians.

Although the conditions at this location have existed for some time, the need for pedestrian safety improvements grew exponentially on December 31, 2007, when the neighboring 378-unit condominium complex, Parkside at Alexandria, ceased operations of a shuttle service that provided access to the Van Dorn Metrorail Station. The Parkside Board contacted the City in early December to inform staff of the shuttle cancellation change. In a formal memo to Council, the Parkside Board also requested pedestrian safety improvements to accommodate an expected daily increase in transit use. The number of crossings at this intersection has grown from fewer than 10 daily to over 60 daily, with estimates of more than 20 crossings per hour during the AM and PM rush hours.

Working with the surrounding community – primarily Parkside at Alexandria and the 180-unit Alexandria Overlook complex – City staff have developed a proposal to improve pedestrian safety at this location by installing an experimental, pedestrian-actuated hybrid traffic signal. The proposed installation was considered by the Traffic and Parking Board at its regular meeting on March 24, 2008. At this public hearing, no residents spoke in favor or opposition to the

request. The Traffic and Parking Board received e-mails in support of the proposal from Mark Benedict and Kate Fleming. City staff participated in a special meeting on March 19, 2008, with the Parkside at Alexandria Board of Directors and the Alexandria Overlook Board of Directors. The Parkside at Alexandria has provided a formal resolution in support of the proposal. The City staff report to the Traffic and Parking Board is included as Attachment II.

The Traffic and Parking Board voted unanimously to recommend to City Council that the pedestrian-actuated, hybrid traffic signal be installed at the intersection of North Van Dorn and Maris Avenue.

DISCUSSION: Currently, Maris Avenue operates with stop control. The closest signalized intersections on Van Dorn are Sanger Avenue, 1,478 feet to the south, and Kenmore Avenue, 1,260 feet to the north. Pedestrians wishing to cross Van Dorn to access or depart southbound DASH and WMATA buses must traverse four travel lanes (two in each direction, approximately 48 feet) using an uncontrolled crosswalk with no median refuge. In addition, traffic traveling northbound on Van Dorn is reaching the crest of a rise that creates sight distance problems. The intersection is currently illuminated by only one overhead streetlight on the southwest corner. City staff has requested that Dominion Virginia Power add an additional overhead light.

The pedestrian-actuated, hybrid traffic signal proposed for use by the City of Alexandria at North Van Dorn and Maris Avenue is currently an experimental device that is expected to be included in the next revision of the Manual on Uniform Traffic Control Devices (MUTCD). The MUTCD defines the standards used by road managers nationwide to install and maintain traffic control devices on all streets.

The hybrid traffic signal is known by the acronym "HAWK," which stands for **H**igh-intensity **A**ctivated cross**W**alk**K**. The HAWK is pedestrian activated and the pedestrian movements are controlled by pedestrian signal heads. Vehicular traffic on the major street (in this case, North Van Dorn Street) would be controlled by a signal head with three signal sections – a CIRCULAR YELLOW signal lens centered below two horizontally aligned CIRCULAR RED signal lenses. (See Attachment.) The pedestrian signal heads will display a steady upraised hand (symbolizing DON'T WALK) signal indication and the vehicular signal heads would be dark between pedestrian activations.

The HAWK provides an alternative treatment for locations where traffic signal installation based on pedestrian warrant is not justified but treatments including typical markings, signs and/or a warning beacon are considered insufficient.¹ Previous traffic studies at the intersection of North Van Dorn Street and Maris Avenue *have not warranted* the installation of a traffic signal. However, the intersection at North Van Dorn Street and Maris Avenue *does* meet the currently established standards and guidance for installation of a HAWK.² If approved by Council, the City will file a Request for Permission to Experiment with the Federal Highway Administration to ensure compliance with federal standards. The City is proposing the HAWK primarily

¹ Signals Technical Committee. "Proposed new Chapter 4M Traffic Control Beacons for Pedestrians." June 29, 2006. Recommendation approved by the National Committee Council on January 19, 2007.

² Ibid, p 4

because of the recent and significant increase in pedestrians crossing North Van Dorn Street to access transit stops.

City staff had previously visited the North Van Dorn and Maris Avenue intersection and planned to make a number of improvements including new accessible curb ramps, advance pedestrian warning signs, crosswalks and pedestrian signal improvements at Kenmore Avenue. These improvements are already in place or are planned shortly. City staff also conducted a study of transit use on February 13, 2008. This study and subsequent contact with DASH and WMATA staff have corroborated the expected rise in pedestrian crossings at this intersection. Staff has observed a daily average of over 20 pedestrian crossings per hour on an average day across Van Dorn Street at Maris Avenue.

Based on the Parkside Board request and a study of conditions, City staff determined that the HAWK signal provided the safest pedestrian treatment at this location since a traffic signal installation based on pedestrian warrant is not justified but other existing treatments including markings and signs are insufficient

If approved by City Council, staff estimates that six to nine months will be required to design, procure equipment and construct the signal.

FISCAL IMPACT: The cost of installing this signal is estimated at \$45,000. Funding for the installation is included in the FY 2009 capital improvement budget. The annual operating cost for this signal is estimated to be \$2,500, which is included in the Department's FY 2009 Operating Budget.

ATTACHMENTS:

Attachment I. Site Location Map

Attachment II. Traffic and Parking Board Docket Memorandum.

STAFF:

Richard Baier, P.E., Director, T&ES

Tom Culpepper, PhD, P.E., Deputy Director, T&ES

Bob Garbacz, P.E., Division Chief, Transportation

Ravi Raut, P.E. Traffic Studies Engineer

Yon Lambert, Pedestrian and Bicycle Coordinator

PROPOSED PEDESTRIAN ACTUATED HYBRID TRAFFIC SIGNAL at VAN DORN and MARIS AVE



**TRAFFIC AND PARKING BOARD PUBLIC HEARING
MARCH 24, 2008**

DOCKET ITEM: 5

ISSUE: Consideration of a request to install a pedestrian-actuated hybrid signal traffic at the intersection of North Van Dorn Street and Maris Avenue.

APPLICANT: City of Alexandria and Parkside Board

LOCATION: The intersection of North Van Dorn Street and Maris Avenue

STAFF RECOMMENDATION: That the Board recommend to the City Council that this signal be approved.

DISCUSSION: Pedestrians are having difficulties crossing Van Dorn Street at Maris Avenue to access the bus stop. North Van Dorn Street is a four-lane arterial roadway with a posted speed limit of 35 mph and an ADT of 32,000 vehicles.

Pedestrians wishing to cross North Van Dorn Street to access or depart southbound DASH and WMATA buses must traverse four travel lanes (two in each direction, approximately 46 feet) using an uncontrolled crosswalk with no median refuge. In addition, traffic traveling on northbound North Van Dorn Street is reaching the crest of a rise that creates sight distance problems. The intersection is illuminated by only one overheard streetlight on the southwest corner.

Since January 1, 2008, Parkside Board has indicated to the City that it estimates at least 2-4 riders per trip using both DASH and WMATA transit stops during rush hours (headways in this area are approximately 10 minutes during rush hour with service provided by both DASH and WMATA). Parkside Board members indicated that many riders are using nearby stops at Seminary Towers (approximately ½ mile north) because they feel unsafe on North Van Dorn Street. In addition, Parkside Board members have also noted increased bus ridership from the nearby Overlook complex (180 units). A rough estimate of transit mode share at 20% (lower than the City average) would equate to an additional 35-45 transit riders accessing southbound bus stops on North Van Dorn Street.

The pedestrian-activated hybrid signal proposed is currently an experimental device that is expected to be included in the 2008-09 MUTCD. The signal, also known as a "HAWK" signal, looks and operates similar to an emergency beacon. The signal is pedestrian activated and the pedestrian movements are controlled by pedestrian signal heads. Vehicular traffic on the major street (in this case, North Van Dorn Street) would be controlled by three-section signal displays – a CIRCULAR YELLOW signal lens centered below two horizontally aligned CIRCULAR RED signal lenses. (See Figure 1.) The pedestrian signal heads will display a

steady upraised hand (symbolizing DON'T WALK) signal indication and the vehicular signal heads would be dark between pedestrian activations.

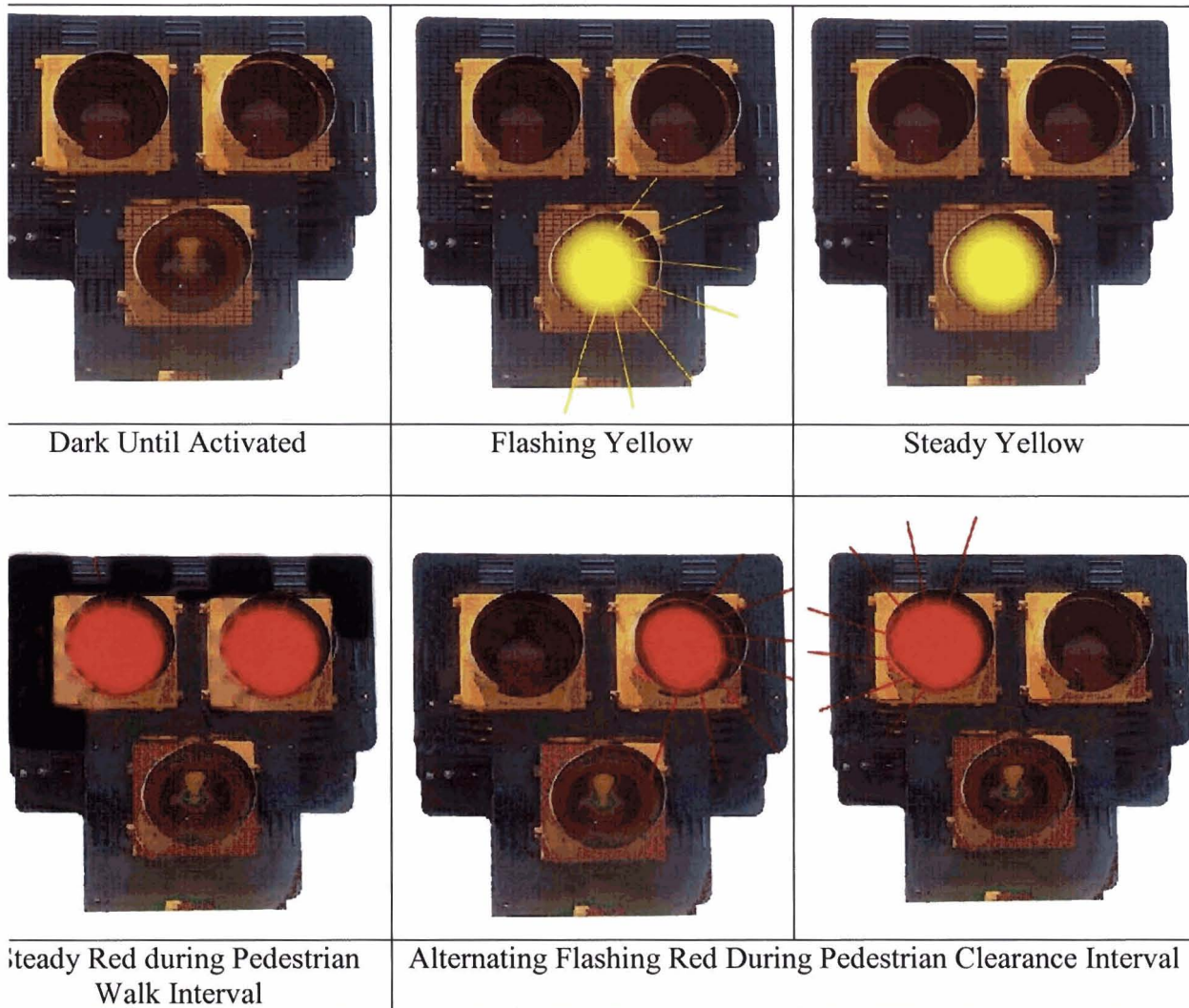


FIGURE 1

The proposed pedestrian hybrid signal provides an alternative treatment for locations where traffic signal installation based on pedestrian warrant is not justified but treatments including typical markings, signs and/or a warning beacon are considered insufficient.¹ The City also filed a Request for Permission to Experiment with the Pedestrian Hybrid Signal to the Federal Highway Administration.

BOARD ACTION: The Board voted to approve the motion

¹ Signals Technical Committee. "Proposed new Chapter 4M Traffic Control Beacons for Pedestrians." June 29, 2006. Recommendation approved by the National Committee Council on January 19, 2007.