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To: Peter Merritt, P.Eng
District Director - Central

From: James S. Jerram
District Traffic Authority

Subject: Proposal for Improvements - Northwest Arm Drive, HRM

At the request of Graham Steele, MLA Halifax Fairview, an extensive study of Northwest Arm Drive (NWAD) has been completed. Among Mr. Steele's concerns were speeding, deer crossing accidents, lack of signals at the intersection of NWAD and Route 306, and accidents at the various intersections along the route from the 102 interchange to Route 306. During this investigation, a number of local residents have also contacted me and listened to their problems and points of view and have considered them when examining other details as described here.

The various subjects were investigated as follows;

1. Speed Zoning. The roadside development, intersections, accident history and radar samples were examined in light of the existing 80 km/h speed sone throughout the study area. Development is controlled and access to NWAD is controlled by three signalized intersections, the accident history shows that the majority are intersection related and handled later in this letter. The prevailing speeds as determined by radar samples are in the region of 83 to 95 km/h and show a reasonably good compliance with the existing posted speed. Furthermore, all of the 85 th percentile speeds are within their respective 16 km/h paces, indicating that a major speeding problem does not exist. The existing 80 km/h speed zone does not warrant a reduction to a lower value.

2. Deer Crossing accidents. I interviewed naturalists from the Dept of Natural Resources and asked them to suggest areas where Deer Crossing signs might be of use in warning motorists. Several locations, along Highway 118, 102, 103 and NWAD, were identified. Instructions have already been set to erect Deer Crossing signs along the various highway sections identified.

3. Signals - Intersection of NWAD and Route 306. A count was analyzed that shows this intersection has 59 priority points of the 100 required for the installation of signals. Signals are not approved at this time.

4. Accident analysis. The accident rate for NWAD is 248.0 / HMVK while the provincial average is 142.9 / HMVK. Being almost double the provincial average, the accident rate for NWAD is unacceptable and is therefore treated as a separate subject in this investigation. As stated previously, a high percentage of accidents are associated with intersection traffic. The five year accident history shows that of the 174 total number, 123 or 71 percent of all accidents happened at one or other of the intersections with the intersection of Albert Walker/Walter Havill Drive/NWAD reporting 66 accidents or 38 percent of the overall total. Collision diagrams were prepared for each of the intersecting roadways to determine the cause, type and frequency of accidents at those sites. Each

intersection is dealt with separately as follows;

A. Intersection of Albert Walker/Walter Havill Drive. Accidents here are of two basic types - head-on left turns from NWAD in both direction from NWAD to either Albert Walker or Walter Havill Dr., and rear end accidents on the Albert Walker approach to NWAD. Complaints from residents that sight lines to approaching traffic are hindered by left turning vehicles when attempting left turns are correct and proven by the accident record. Also, complaints regarding rear end accidents on Albert Walker are proven. In addition to the accident record, the intersection was viewed to determine any other operation difficulties that might be present that could add to the accident record or seriously effect operations. One observation centers on restricted curb radii and deceleration/acceleration lanes. The tight curb radii and lack of acceleration lanes effects operations in several ways. Because of the tight curb radii, many drivers to move as far left as possible before making right turns and by doing so they cross the detector loop that places an unnecessary side street call to the signals which then forces a green on the side street while holding up traffic on NWAD. This lowers the level of service on NWAD while adding to frustration due usually to the fact that the vehicle placing the call has already gone. In addition, not having an acceleration lane when entering an 80 km/h highway from a dead stop causes the obvious hazards such as rear end and swerving accidents. The number of rear end accidents on Albert Walker are related to grade and congestion. The lack of a full length right turn lane along this road is causing separation problems at the intersection while also creating line ups well back toward Trunk 3. Due to the unexpected length of the line ups, many more rear end accidents are the result. This intersection would benefit by taking the following actions; 1. Provide dedicated left turn signals at the intersection, 2. provide increased curb radii for smoother ingress and egress and provide acceleration lanes for right turning vehicles onto NWAD., 3. Construct a right turn lane for the full length of Albert Walker Drive from Trunk 3 to NWAD.

B. Intersection of Osbourne Street. While this intersection has a much better accident record there are some similarities with the Albert Walker/Walter Havill Drive intersection. The sight line for left turning vehicles from NWAD are restricted by through traffic, tight curb radii forces vehicles into adjacent lanes and give false detector calls and the lack of acceleration/deceleration lanes is resulting in rear end and sideswipe, same direction accidents. This intersection could also benefit from dedicated left turn signals, increased curb radii and acceleration/deceleration lanes.

C. Intersection of Cowie Hill Road. The problems at this intersection are virtually identical to those found at Osbourne Street and the same improvements are justified.

5. General signing. The existing signing was checked against previously approved drawings and was found to be correct. The standard approved regulatory signing and warning signing as well as advance intersection warning and Wrong Way signs are in good condition - no adjustments necessary.

6. Additional. A number of accidents have happened on the curve just north of the Trunk 3 overpass. In several instances the accident description mentions that vehicles have come to rest on the inside of the curve which is an unusual position. A survey is being conducted to determine if roadway geometry is contributing to this situation or if it is coincidence that a number of vehicles have followed an unusual route. Results of this survey are not forthcoming yet. I will report on my finding later rather than hold back the remainder of this report any longer.

In summary, Northwest Arm Drive needs improvements to bring the accident rate to within reasonable limits of the Provincial average for this type or highway. The improvements are intersection related and focus on what seem to be cost cutting measures, taken when they were constructed.