
HALIFAX REGIONAL COUNCIL
July 9, 2002

TO: Mayor Kelly and Members of Halifax Regional Council

SUBMITTED BY: David McCusker
David McCusker, P.Eng., HRM Traffic Authority

DATE: June 25, 2002

SUBJECT: TRAFFIC SIGNAL TIMINGS - VARIOUS LOCATIONS

INFORMATION REPORT

ORIGIN

Halifax Regional Council meeting February 26, 2002, item 9.1.2.

BACKGROUND

Councillor Sarto submitted a very lengthy letter from Mr. John Ware regarding traffic concerns and light settings at various locations throughout HRM, requesting staff provide a response to Council to the questions raised.

DISCUSSION

Signal timings for each of the intersections, referred to in the letter from Mr. John Ware, were originally developed using traffic counts done at each intersection. The timings are updated periodically and coordination between the intersections, where possible, is checked.

For many intersections in Dartmouth, detectors located in the pavement enable the signal timer to know where traffic is located around the intersection. This aids in minimizing delays and maximizing green time for where it is needed. Sometimes these detectors break and quite often the Halifax Regional Municipality becomes aware of the problem through the public. Usually replacement of bad detectors must wait until spring due to weather conditions and the condition of the pavement. When a detector goes bad, the signal timer assumes there is constant traffic demand over the detector. When this happens, the traffic signals will cycle more often if the problem detector is located on the side street or rest longer than necessary in the problem direction.

For signal timings, it is an accepted standard not to delay any vehicle longer than 120 seconds (2 minutes). Drivers facing signals which remain red for longer than two minutes, generally believe the signals to be functioning incorrectly and may attempt to drive through the red signal. Through the use of the vehicle detectors, it is possible to have the signals rest in green on the primary street when there are no vehicles present on the side streets.

The other concerns raised are related to "Night Flash" of several intersections. For "Night Flash", the Halifax Regional Municipality has developed a policy which states that any semi or fully actuated intersection, (i.e. controlled via detectors) do not require "Night Flash". When "Night Flash" is used, the colors of flash, either red/red flash or amber/red flash, depend on the width of the intersection, site distance and accident history. Due to the advantages of the detectors, intersections can rest in main street green when no side street calls are present. The general movement across Canada is to abolish "Night Flash" as it leads to more vehicle collisions and creates unsafe conditions for pedestrians. Recently, within the Halifax Regional Municipality, there have been a number of collisions at flashing traffic signals. Some of these collisions involved emergency vehicles. These collisions were due to vehicles either not yielding at a flashing amber or vehicles failing to stop and wait at a flashing red.

Currently in the Halifax Regional Municipality most intersections which use "Night Flash", flash between 0030 hours to 0600 hours. Some exceptions are intersections around malls.

The intersections which Mr. Ware has referred to in his letter are listed below:

1) Portland Street @ Portland Estates Boulevard / Spring Avenue

This intersection operates through the use of "Time of Day" programs, coordination with nearby intersections, and with detectors located on the side streets and in the left turn lanes.

Programming for this intersection reflects the large volumes of traffic found on Portland Street while giving appropriate cross street timing required for pedestrians and traffic. Currently, when there is traffic on all approaches to the intersection, Portland Street gets between 62% and 71% of total cycle length inbound and 47% and 62% of total cycle length outbound based on the time of day.

2) Portland Street @ Carver Street / Eisener Boulevard

This intersection operates through the use of "Time of Day" programs, coordination with nearby intersections, and through the use of detectors on the side streets and in the left turn lane for Portland Street turning onto Eisener Blvd. This intersection has two left turn lanes that exit Eisener Blvd. This requires that the left turn be "Protected" and have its own left turn signal to protect against possible conflict. Programming for this intersection reflects the large volumes of traffic found on Portland Street while giving appropriate cross street timing required for pedestrians and traffic. Currently, when there is traffic on all approaches to the intersection, Portland Street gets approximately 51% of total cycle length inbound and approximately 38% of total cycle length outbound. The total green time varies by time of day and will increase when lower volumes on side streets are present.

In the fall of 2001, we discovered the detectors coming out of Eisener Blvd. required some repairs. These detectors will be repaired this summer.

3) Portland Street @ Woodlawn Road / Baker Drive

This intersection operates through the use of "Time of Day" program, coordination with other nearby intersections, and with detectors located in the side streets, right turn ramp onto Portland Street and in the left turn lanes turning from Portland Street. This intersection has two left turn lanes for vehicles turning left from Portland Street onto Woodlawn Road and two lanes which can turn left from Baker Drive onto Portland Street. Each of these movements requires the left turn be "Protected" to protect against possible conflict. Programming for this intersection reflects the large volumes of traffic found on Portland Street and Woodlawn Road throughout the day. The timings for the left turn signals and side streets are currently kept to a minimum to give the most green time to Portland Street as possible within the cycle length.

4) Portland Street @ Caldwell Road/Dorothea Drive

The advance green arrow for traffic turning left from Caldwell Road onto Portland Street was installed due to the high volumes of traffic wishing to make that turn. This enables vehicles to turn left without conflict with vehicles coming out of Dorothea Drive or with pedestrians. The advance portion of the cycle is controlled with a vehicle detector that is located in the pavement of the left turn lane. This allows the movement to be skipped or shortened if the demand is less than expected. This intersection is also controlled by "Time of Day" programming.

5) Pleasant Street @ Atlantic Street

The use of "Night Flash" at this intersection is unnecessary because detectors provide actuation for vehicles on side streets with the intersection resting in green at other times. During the night or off peak periods, when volumes are light, single traffic actuations cause only a short delay to Pleasant Street of about 13 seconds including the amber and all red.

6) Alderney Drive @ Ochterloney Street, Alderney Drive @ Queen Street, Alderney Drive @ Portland Street

These three intersections along Alderney Drive have recently been included in a downtown Dartmouth study. Changes to these intersections are now being considered. However, changing "Night Flash" times are unlikely due to the number of pedestrians and unsafe conditions of "Night Flash", as previously stated. Some improvements that can be considered are the installation of vehicle detectors that currently do not exist and push buttons for pedestrians to shorten or skip movements with little or no demand.

7) Portland Street @ Alderney Drive / Prince Albert Road

This intersection was also part of the downtown Dartmouth Study. Currently vehicle times, for this intersection, are controlled by "Time of Day" programming only. Minimum green times on all approaches are influenced by the crossing times required for pedestrians. Some improvements that can be considered are the installation of vehicle detectors to shorten or skip movements with little or no demand.

8) Forest Hills Drive @ Merrimac Drive / Flying Cloud Drive, Forest Hills Drive @ Canadian Tire Driveway

These two intersections are fully controlled with vehicle detectors located in all side streets and on Forest Hills Drive. The signals only go to red on Forest Hills Drive when traffic is waiting to enter the roadway. The detectors provide only the minimum amount of green, up to a programmed maximum timing. Traffic on Forest Hills Drive, likewise is controlled through detectors that provide an appropriate green time for the traffic detected at and approaching the intersection.

BUDGET IMPLICATIONS

N/A

FINANCIAL MANAGEMENT POLICIES/BUSINESS PLAN

This report complies with the Municipality's Multi-Year Financial Strategy, the approved Operating, Capital and Reserve budgets, policies and procedures regarding withdrawals from the utilization of Capital and Operating reserves, as well as any relevant legislation.

ALTERNATIVES

N/A

Additional copies of this report and information on its status can be obtained by contacting the Office of the Municipal Clerk at 490-4210, or Fax 490-4208.
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MF/bmh