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2007 VEHICLE WEIGHT RESTRICTIONS HARD SURFACE ROADS

The Transportation and Works Committee recommends the adoption of the recommendations contained in the following report, November 16, 2007, from the General Manager, Roads subject to the following additions to Recommendation 1:

- r) McCowan Road (Y.R. 67), from Stouffville Road (Y.R. 14), to Bloomington Road (Y.R. 40), in the Town of Whitchurch-Stouffville;**
- s) Nashville Road (Y.R. 49), from Highway 27 (Y.R. 27) to Highway 50 (Y.R. 24), in the City of Vaughan.**

1. RECOMMENDATIONS

It is recommended that:

1. The gross weight of commercial vehicles be restricted to five tonnes per axle on the following hard surfaced Regional roads:
 - a) Langstaff Road (Y.R. 72), from Highway 27 (Y.R. 27) to Highway 50 (Y.R. 24), in the City of Vaughan.
 - b) Major Mackenzie Drive (Y.R. 25), from Highway 27 (Y.R. 27) to Highway 50 (Y.R. 24), in the City of Vaughan.
 - c) Pine Valley Drive (Y.R. 57), from Rutherford Road (Y.R. 73) to Teston Road (Y.R. 49), in the City of Vaughan.
 - d) Teston Road (Y.R. 49), from Pine Valley Drive (Y.R. 57) to Weston Road (Y.R. 56), in the City of Vaughan.
 - e) 19th Avenue (Y.R. 29), from Yonge Street (Y.R. 1) to Leslie Street (Y.R. 12), in the Town of Richmond Hill.
 - f) Leslie Street (Y.R. 12), from 540 metres north Elgin Mills Road (Y.R. 49) to 300 metres south of Stouffville Road (Y.R. 14), and from Bethesda Sideroad to Aurora Road (Y.R. 15), in the Towns of Richmond Hill and Aurora.
 - g) 14th Avenue (Y.R. 71), from 9th Line (Y.R. 69) to York/Durham Line (Y.R. 30), in the Town of Markham.

- h) 16th Avenue (Y.R. 73), from Donald Cousens Parkway (Y.R. 48) to York/Durham Line (Y.R. 30), in the Town of Markham.
 - i) York/Durham Line (Y.R. 30), from Steeles Avenue to the 407 ETR, from Highway 7 (Y.R. 7) to Durham Road 5, and from Main Street, Stouffville to 600 metres south of Bloomington Road (Y.R. 40), in the Towns of Markham and Whitchurch-Stouffville.
 - j) St. John's Sideroad (Y.R. 26), from Bayview Avenue (Y.R. 34) to Woodbine Avenue (Y.R. 8), in the Towns of Whitchurch-Stouffville and Aurora.
 - k) Warden Avenue (Y.R. 65), from Bloomington Road (Y.R. 40) to Davis Drive (Y.R. 31), in the Town of Whitchurch-Stouffville.
 - l) Kennedy Road (Y.R. 3), from Aurora Road (Y.R. 15) to Davis Drive (Y.R. 31), and from Mount Albert Road (Y.R. 13) to Boag Road, in the Towns of East Gwillimbury and Whitchurch-Stouffville.
 - m) Doane Road (Y.R. 45), from Yonge Street (Y.R. 51) to Woodbine Avenue (Y.R. 8), in the Town of East Gwillimbury.
 - n) McCowan Road (Y.R. 67), from Davis Drive (Y.R. 32), to 1.5 kms south of Mount Albert Road (Y.R. 13) and from Mount Albert Road (Y.R. 13) to Ravenshoe Road (Y.R. 32), in the Town of East Gwillimbury.
 - o) Ravenshoe Road (Y.R. 32), from Victoria Road (Y.R. 82) to Durham Road 23, in the Town of Georgina.
 - p) Old Homestead Road (Y.R. 79), from Warden Avenue (Y.R. 65) to Highway 48, in the Town of Georgina.
 - q) Bathurst St. (Y.R. 38), from Green Lane East (Y.R. 19) to Morning Sideroad, in the Township of King and Town of East Gwillimbury
2. The Regional Solicitor prepare the necessary by-law.

2. PURPOSE

This report is submitted to obtain approval for a reduction in the approved gross weight of commercial vehicles permitted to travel on certain sections of the Regional road system (*see Attachments 1 and 2*). The hard surfaced road sections identified for this restriction have not been designed to support heavy truck traffic and have limited structural capacity. Restriction of the weight of commercial vehicles will assist in

retaining the current surface condition until such time upgrading of these roads is deemed to be cost effective, prioritized and completed through the Roads Capital Program.

A Regional by-law is required under the *Highway Traffic Act* before any of the listed weight restriction regulations can be enforced.

3. BACKGROUND

The current three-year by-law expires on November 21, 2007. The by-law was enacted to reduce the use by heavy trucks and protect the investment in these surface treated sections until future improvements of the roadway are implemented under the Capital Roads Construction Program.

Surface treated or cold mix asphalt roadways have the potential for becoming major heavy commercial routes. As such, a year-round load restriction was proposed as a means of discouraging them from becoming truck haulage routes. Access along these roads continues to be available for local businesses through the issuance of annual overweight permits to these businesses on a no-fee basis.

The structure of surface treated roads has been designed from gravel road design principles which do not have the additional hot mix asphalt to carry increased traffic loads from heavy commercial vehicles. The factors considered in the design are; design life, traffic loading and environmental conditions.

The design life principle is primarily based on a granular subbase and a granular base which usually lasts three to five years before reapplication of surface treatment. It is this base matrix which carries a large portion of the load, provides drainage, minimizes frost action and allows fine tolerance in grading to give a level surface upon which to lay surface-treated top-layer material, however the design life is subject to traffic loading.

The traffic loading is given in terms of Annual Average Daily Traffic (AADT) and percent trucks and uses the principle of cumulative standard 8.2 tonnes Equivalent Single Axle Loads (ESAL). As a minimum, surface-treated roads are designed to carry vehicle loads of 8.2 tonnes per axle. These surface-treated roads will break down with the increase of equivalent single axle loads or loaded commercial vehicles exceeding the weight restrictions. The five tonnes per axle weight restriction on surface-treated roads will help protect and extend the life span of these roadways.

Design considerations regarding the environmental conditions, must account for temperature induced stresses, moisture and frost penetration. These stresses accelerate in presence with increased traffic loading and especially truck traffic during the spring thaw period when the subbase is saturated and becomes less stable.

The current and previous weight restriction by-laws were enacted under the authority provided under the *Highway Traffic Act*. The weight limit referred to in the act is five tonnes per axle which is a standard defined by the Ministry of Transportation and is used Province-wide. The five tonnes per axle helps ensure continuity for weight-restricted roads regardless of the municipal jurisdiction and helps with enforcement Province-wide.

An empty tandem dump truck, (three axles) weighs approximately 12 tonnes. Fully loaded, it can weigh 28 tonnes. Each axle would carry nine tonnes. A road with a five tonne per axle weight restriction will permit a tandem dump truck to weigh 15 tonnes. This results in only three tonnes of cargo for five tonnes per axle.

3.1 Enforcement for Vehicle Weight Restrictions

Currently, there are three forms of enforcement of vehicle weight restrictions on Regional roads. The enforcement is carried out by York Regional Police, Ministry of Transportation and staff from Transportation and Works.

Both York Regional Police and Ministry of Transportation Ontario Weights and Measures Officers provide means of enforcement that is reactive and generally complaint driven. These complaints are usually from the public or Roads staff discovering heavy commercial vehicles using a road which is weight restricted. York Regional Police are responsible for roads in York Region which include both Regional roads and Municipal roads. Ministry of Transportation Ontario Weights and Measures Officers are responsible for all roads in the Province which include Regional roads, local municipal roads and Provincial highways.

York Regional Police enforce vehicle weight restrictions on all roads Region-wide. There are over 100 weight restricted roads in York Region, Regional roads and local municipal roads.

York Regional Police use their discretion and usually visually inspect the loads that commercial vehicles are carrying, and if it appears to be in violation, they may choose to weigh the vehicle and lay charges according to the *Highway Traffic Act*. As well as inspecting the commercial vehicle loads, York Regional Police will also complete a visual inspection with a walk around the commercial vehicle to ensure there are no other traffic act or safety related violations. York Regional Police are equipped with portable scales and can weigh the commercial vehicle on the side of the road to determine the axle weights.

The Ministry of Transportation Ontario Weights and Measures Officers join forces with York Regional Police 12 to 14 times throughout the year engaging together in “Truck Blitz” inspections. These Truck Blitz inspections range from commercial vehicle operator requirements, required paper work, vehicle weight inspections and all other safety related issues regarding commercial vehicles. The location settings for these initiatives vary throughout York Region.

When Roads staff discover repeat trips by commercial trucks that appear to be over the weight restriction, the operators are notified of the by-law regarding the weight restrictions. Staff also inform the operators that a permit process is in place to allow the operator of the commercial truck to use the local roads to get to a destination that is within the weight restricted zone. Often commercial vehicle operators stop using such weight restricted roads in the specific area.

In 2006, Roads staff issued 12 load exemptions and have collected \$3,000 in fees. To date in 2007, Roads staff have issued six exemptions and have not collected any fee amounts. The lack of 2007 fee amounts are attributed to single time-only trips for residential septic tank installations or other minor residential renovations. Roads staff request security deposits to ensure money is available if Regional roads get damaged from such construction projects, but have not had to use any of the security deposits for road repairs in 2007.

4. ANALYSIS AND OPTIONS

Under section 122(7) of the *Highway Traffic Act*, the municipal corporation having jurisdiction over a highway may, by by-law, designate the date on which a reduced load period shall start or end, and the highway or portion thereof, to which the designation applies.

As defined in the *Highway Traffic Act*, enforcement of this by-law may be by either Ontario Provincial Police, York Regional Police or Ministry of Transportation enforcement staff.

York Regional Police currently employ two full time officers that inspect commercial vehicles, who have the equipment to weigh commercial vehicles on the side of the road.

Roads staff has requested and will continue to request the assistance from York Regional Police to help enforce the vehicle weight restrictions. These requests are usually based on complaints from the public or Roads staff discovering heavy commercial vehicles using a road which is weight restricted.

Under section 124 of the *Highway Traffic Act*, the penalty for a vehicle exceeding the designated limit varies from \$200 to a maximum of \$20,000 depending on the discretion of the officer and the co-operation of the operator. Currently, York Regional Police have two full time officers available with the required equipment to enforce and inspect commercial vehicles. In addition, York Regional Police join forces with the Ministry of Transportation to enforce the *Highway Traffic Act* through various initiatives and response to customer complaints.

Without a weight restriction, heavy truck usage could cause extensive damage to hard surfaced roads. Remedial repairs could cost up to \$60,000 per kilometre, with full

reconstruction of the roadway section to Regional standards valued up to \$350,000 per kilometre.

The Roads Branch completed a review of all existing hard surfaced roadways in the road system. The assessment concludes that the current year-round reduced load by-law, while not totally eliminating heavy commercial vehicles, has limited the increase in truck traffic. This regulation has assisted in maintaining the surface condition on the following road sections:

- York/Durham Line, from Steeles Avenue to Durham Road 5, and from Main Street, Stouffville to 600 metres south of Bloomington Road
- 14th Avenue, from 9th Line to York/Durham Line
- 16th Avenue, from Donald Cousens Parkway to York/Durham Line
- Langstaff Road, from Highway 27 to Highway 50
- Major Mackenzie Drive, from Highway 27 to Highway 50
- Leslie Street, from Elgin Mills Road to 300 metres south of Stouffville Road, and from Bethesda Sideroad to Aurora Road
- St. John's Sideroad, from Bayview Avenue to Woodbine Avenue
- Ravenshoe Road, from Victoria Road to Durham Road 23
- Pine Valley Drive from Rutherford Road to Teston Road
- Teston Road, from Weston Road to Jane Street
- 19th Avenue, from Yonge Street to Leslie Street
- Teston Road, from Pine Valley Drive to Weston Road
- Kennedy Road, from Davis Drive to Aurora Road, and from Mount Albert Road to Boag Road
- Warden Avenue, from Bloomington Road to Davis Drive
- Doane Road, from Yonge Street to Woodbine Avenue

- McCowan Road, from Davis Drive to 1.5 kms south of Mount Albert Road, and from Mount Albert Road to Ravenshoe Road
- Old Homestead Road, from Warden Avenue to Highway 48

Retention of the vehicle load limitation on these roads and expansion to other recently hard-surfaced roadways, which also have the potential for attracting high volumes of heavy commercial traffic, is therefore proposed under a new year-round weight restriction by-law. Location maps detailing these road sections are attached to this report (*see Attachments 1 and 2*).

4.1 New Road Sections for Reduced Load Restriction

Bathurst Street, from Green Lane East to Morning Sideroad is not currently covered by the vehicle weight restriction by-law. With the completion of Bathurst Street from Highway 9 to Green Lane and Green Lane easterly from Bathurst Street, additional traffic uses Bathurst Street north of Green Lane adding unacceptable loads to this section of unimproved road, therefore, weight restrictions are required.

4.2 Existing Road Section Removed from Current Vehicle Weight Restriction By-law

Teston Road, from Weston Road to Jane Street is proposed to be removed from the current vehicle weight restriction by-law, as a result of recent capital improvement.

4.3 Time Frame of Weight Restriction By-law

The current weight restriction by-law covered the three-year period 2004 to 2007. With the potential for some of the roads listed to be improved under the Capital Roads Construction Program and changes to traffic flows and patterns as a result of new development, it is proposed that the new by-law cover the amount of time until such roads are reconstructed. An amendment will be prepared for the sections of roads that get reconstructed to remove the load restriction by-law respectively.

4.4 Spring Half Load Restriction

During the spring thaw period, a reduced vehicle load restriction is placed on roads that do not have the pavement structure to carry full loads during this time when frost is coming out of the road base. A separate by-law is in place for this.

The year-round weight restriction by-law covered by this report addresses those roads that have the potential for becoming major trucking routes. Heavy truck traffic on these low-cost, hard-surfaced roadways would result in premature damage and loss of the interim road surface investment.

5. FINANCIAL IMPLICATIONS

There are no direct financial implications associated with this report as the installation of the signs is included in the 2007 Roads budget.

Without a weight restriction, heavy truck usage could cause extensive damage to these hard-surfaced roads. Remedial repairs could cost up to \$60,000 per kilometre, with full reconstruction of the roadway section to Regional standards valued up to \$350,000 per kilometre.

6. LOCAL MUNICIPAL IMPACT

There are no local municipal implications associated with this report.

7. CONCLUSION

A by-law is proposed to restrict the gross vehicle weight limit to five tonnes per axle for the hard surfaced roads that have the potential for becoming major truck haulage routes, as outlined in this report. The by-law is to cover the time period from November 22, 2007 as warranted, until such roads get reconstructed.

A further review and report will be submitted to address those road sections no longer requiring load restrictions due to improvements implemented under the Capital Roads Construction Program, or any new roads that may require the gross weight restriction.

The road sections proposed for this commercial vehicle half load restriction will maintain existing traffic patterns and will not impact any industrial or commercial development or operation. Oversize/overweight permits will be issued to address full load requirements to existing commercial businesses along these weight-restricted routes.

For more information on this report, contact Brian Harrison, Director, Operations, Roads Branch at extension 5205 in the Transportation and Works Department.

The Senior Management Group has reviewed this report.

(The attachments referred to in this clause were included in the agenda for the November 28, 2007 Committee meeting.)