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ADMINISTRATION OF REGIONAL ROAD CONTRACTS AND MAINTENANCE OF TRAFFIC AND CONTROL MEASURES

The Transportation and Works Committee recommends the adoption of the recommendation contained in the following report, March 15, 2007, from the Commissioner of Transportation and Works:

1. RECOMMENDATION

It is recommended that:

1. Regional Council endorse the following additional measures, as detailed in this report, to be applied in road construction projects where applicable to minimize traffic congestion at construction sites:
 - i) Reduce the Number of Construction Stages
 - ii) Revise Temporary Lane Markings
 - iii) Provide Contract Incentives / Disincentives
 - iv) Improve and Expand Public Notification
 - v) Consider Temporary Full Road Closures
 - vi) Utilize Night or Winter Work

2. PURPOSE

The purpose of this report is to respond to a direction from the Transportation and Works Committee and to inform Regional Council of efforts being undertaken to improve the administration of Regional road construction projects.

3. BACKGROUND

At the January 10, 2007 Transportation and Works Committee, Region staff were directed to report back on opportunities to lessen the impact to the residents of our Regional road construction projects. Specific reference was made to both the current Warden Avenue construction project in the Town of Markham and the Bathurst Street project in the Towns of Aurora and Richmond Hill.

3.1 Current Standard Procedures

The Region's road construction projects are typically undertaken with the expectation that the roads will remain open during construction to minimize impacts to our residents and travellers. This section sets out some of the key processes and procedures currently included in our construction contracts and enforced by Region staff during the administration of these contracts. These include:

- Established Provincial Guidelines, identifying how traffic is to be accommodated within construction sites, is followed
- Lane restrictions are limited to non-peak hours (typically 9:00 am to 3:30 pm)
- Detour and alternate routes are posted and advance notification of temporary road closures
- Night work is permitted in accordance with local Noise By-laws
- Use of Police to direct traffic at key intersections during certain construction activities (traffic signal work, paving through intersections)
- Specifications to maintain sidewalks, public transit access
- Advanced notification to emergency services, school boards and public transit.
- Financial penalties are imposed when contract completion dates are not met

Although these processes are generally accepted across the industry, the complexity of some projects require a modification to these processes on an ongoing basis. This allows our contracts to include specifications reflecting the existing conditions being encountered in the field. To this end, staff have used this opportunity to apply a continuous improvement approach to our administration of road construction projects.

3.2 Issues on Recent Construction Projects

Two recent road construction projects garnered concerns by Council members at the January 10, 2007 Transportation and Works Committee and by the public. The first project was the Warden Avenue reconstruction, from south of 14th Avenue to north of Highway 7, in the Town of Markham, and the second project was Bathurst Street, from King Road to Wellington Street in the Towns of Aurora, Richmond Hill, and Township of King. The concerns primarily revolved around the difficulty some drivers had manoeuvring through the various stages of construction, the corresponding delays encountered, and the overall length of time it took to complete projects such as these.

Both of these roads are considered high volume routes since traffic on these roads reach approximately 40,000 vehicles daily on the four-lane pre-construction Warden Avenue and 18,000 vehicles daily on the two-lane pre-construction Bathurst Street section. Also, both road projects included the reconstruction of two large bridge structures, completed in stages. This staging involves the blacking out of old pavement markings using paint. In situations where numerous construction stages exist, this repeated line removal may cause driver confusion and frustration. We understand from discussions with members of the public and Councillors that this was a concern on these projects.

Other reported concerns were related to insufficient public notification or communication. Although the Region has increased its use of changeable message signs, due to the highly variable nature of road construction activity, the messages have been reported to be out of date or inaccurate when not promptly updated. This results in motorists learning too late that an alternative route might have been worth considering. There have also been complaints that there were too few message signs ahead of the project to enable alternative route consideration.

4. ANALYSIS AND OPTIONS

Although the majority of projects are completed with acceptable results, the reported complaints from 2006 warranted examination of additional measures for use on future construction projects.

4.1 Opportunities for Improvement

During January and February of this year, Regional staff reviewed the 2006 experiences. Several areas were highlighted for consideration to further improve current design and construction administration practices. The following opportunities are proposed for implementation on future projects as discussed below:

- Reduce the Number of Construction Stages
- Revise Temporary Lane Markings
- Provide Contract Incentives / Disincentives
- Improve and Expand Public Notification
- Consider Temporary Full Road Closures
- Utilize Night or Winter Work

4.1.1 Reduce the Number of Construction Stages

A detailed constructability and staging review prior to tendering may reduce the number of traffic stages required by the contractor. For example, designs reducing the number of trenches to cross a roadway can lower the shifting of traffic from side to side. This may require additional materials (i.e., sewer pipe, manholes, etc.) and incur a modestly increased construction cost; however, the impact on traffic and duration of construction may be reduced.

4.1.2 Revise Temporary Lanes Markings

Current specifications require the contractor to obliterate old lane lines. This is often achieved by using black paint which tends to shine or remain visible in wet conditions. Updating our specifications to require old pavement markings be obliterated by completely scarifying the surface between traffic stages will eliminate the old lines. Combined with new temporary line painting for each stage will ensure positive contrast and enhanced visibility.

The Ministry of Transportation has recently used trial applications of “construction orange” temporary lane markings on some Highway 401 and 407 construction projects. York staff will further investigate this application to determine whether this is a best practice that we should consider using on our road construction projects.

4.1.3 Provide Contract Incentives / Disincentives

York Region could consider further performance incentives in the form of an early completion payment to a contractor for concluding a project or specific stages of a project ahead of schedule. This incentive can reduce the overall period of impact to motorists and

the adjoining community. Offering an early completion payment could be balanced by assessing liquidated damages (disincentive) in the event of late completion. Additional disincentives could include a requirement for the contractor to pay a lane rental fee for the time period the lanes remain closed beyond the duration specified in the contract. Such measures, used selectively in past contracts, have proven successful.

4.1.4 Improve and Expand Public Notification Methods

York Region has increased its use of Portable Variable Message Signs in recent years. In some cases, however, the information on the signs has been too generic or out of date. This has led to some complaints. To address this issue, staff are presently preparing Standard Operating Procedures (SOP) for construction signage. The intent of these procedures is to provide standardized and consistent messages, instructions on when to change messages, and define the process for changing messages. It is expected that improved locations, an increased number of signs, and the use of more applicable messages reflecting current construction activities will improve motorist information and may reduce complaints.

On projects adjoining 407/ETR and Ministry of Transportation (MTO) corridors, staff will investigate opportunities to provide advance notification to motorists on 407/ETR and MTO message sign board facilities. This may have been of assistance on the recent Warden Avenue project.

In areas of potential higher traffic impact, pre-construction public consultation (PCC) and notification (media release) have been utilized in the past. In addition to these approaches, for high employment areas, communication via employer resources (i.e. e-mail notices) will be investigated. This would benefit employees who must regularly commute through the construction site to access their place of work.

Improved information on project sign boards will be explored. Posting a 24-hour telephone number on project sign boards will improve the public's accessibility to Region staff. Improved access will expedite prompter responses and may reduce complaints submitted directly to Councillors.

Enhanced use of the Region's web site to post the construction schedule, forecasted duration and expected traffic delays will be explored with a view to keep it as up-to-date as possible. This will enable the community to stay abreast of a construction project's status and enable the community to better determine preferred commuting routes. The web site will also ensure the public have an additional method of contacting York Region staff to have their questions / concerns addressed in a timely fashion.

4.1.5 Consider Temporary Full Road Closures

Full road closures can significantly reduce construction duration and costs by reducing staging requirements. Opportunities for closures are limited since the use of full road closures can also result in injurious affection claims for loss of business income where road closures affect through traffic and/or access to commercial enterprises. However,

with appropriate community consultation, very short-term road closures (i.e. over night or over week-end) may provide improved staging opportunities and reduced overall duration on some projects. Successful closures require viable and sustainable detour route(s) to be available. Approval of both Regional Council and the local municipal council(s) will be necessary if the detour routes include the use of adjoining municipal streets.

4.1.6 Utilize Night Work or Winter Work

Local municipalities have Noise By-laws to limit overnight noise. The Region presently requires the contractor to pursue exemption from the by-law if the contractor should elect to undertake work at night. As part of the constructability and staging review during design, the Region can give consideration to what traffic and community benefits may be realized by pursuing a night time construction schedule.

In many locations, this may not be feasible since adjacent residential areas will be affected by night time noise disturbance. This may limit this option to industrial and commercial areas only. Where it can be determined that night work will benefit the schedule or reduce motorist impact without affecting the neighbouring community, the Region can consider specifying night work rather than leaving it as a contractors option. Local municipal approval will be required.

Certain construction activities are achievable during the winter months (i.e. bridge demolition or structural concrete work). A construction cost premium will be incurred for cold weather protection and reduced construction productivity; however, winter work will be explored further if it is demonstrated such expense benefits the overall project by reducing the traffic impact, project schedule, or accelerates the final completion date.

4.2 Future Implementation of Measures

A number of options have been presented in section 4.1 to assist in minimizing the inconvenience to our commuters through our road construction projects. It is important to move forward quickly on the options we believe can provide the most positive effect. Therefore, staff will progress with two options immediately; enhanced public communication and revised temporary lane markings.

First, the implementation of public notification will be enhanced to ensure key and up-to-date messaging is delivered to the public through the variety of forums available to the public (i.e. newspaper ads, web site, and message signs).

Also, contract staging will be reviewed to reduce motorist confusion which occurs in multiple stage construction projects and use of temporary line markings for each stage in high traffic environments. New specifications may include full width scarifying of travelled surfaces to remove all previous line marking applications. The full width scarifying measure, along with the potential application of 'construction orange' line markings, may be reviewed on a trial basis for effectiveness and continued application. Regional staff will continue to review the other options and consider them on a project specific implementation basis.

5. FINANCIAL IMPLICATIONS

The extent to which implementation of the measures outlined in Section 4.1 may increase or decrease capital costs, is dependent upon each individual project and its particular circumstance.

For instance, full road closures will often lower costs by eliminating the costs associated with multiple stages, such as temporary asphalt lane widening, temporary traffic signals and pavement markings. Analysis would have to be performed to assure that any contemplated closure did not increase the risk of injurious affection claims.

Although it is expected that night work and winter work may increase the cost of the contract, in some instances this may not be the case. For example, on high volume roads, if the contractor determines that his productivity rates will increase during the evenings due to less traffic on the job site, the increase may not be significant. Night work and winter work can be expected to increase costs; however, in situations where night work can improve productivity, costs may not be significantly impacted.

Provision of additional message boards or scarifying the asphalt between lane stages will incur a minor increase in costs; however, the improved communication and lane marking clarity will be beneficial to the travelling public.

It is very difficult to quantify the exact magnitude of any increase or decrease as a result of implementing any of these measures in this report; however staff believe it to be in the order of \$1 to \$1.5 million of the overall 10-Year Roads Capital Program. By including these requirements in the competitive public tendering process followed for roads construction contracts, York Region will ensure that cost increases, if any, are kept to a minimum. In fact, the argument can be made that by putting these in our tenders, we may not experience any increase in cost at all.

6. LOCAL MUNICIPAL IMPACT

It is expected by implementing many of the measures identified in this report, there may be a reduced negative effect on our residents as they proceed through our road construction contracts. Also by improving our communication tools, both on the construction site and through posted contact information, members of the public will be better able to get up-to-date information on the status of our construction projects and advance notice of upcoming works.

7. CONCLUSION

On two recent construction projects, Regional Councillors and staff heard some concerns expressed over the administration of these projects. There are a number of processes currently in place to try to minimize the impact of our road construction contracts on our communities. These recent concerns provide us an opportunity to further improve our construction administration practices. Region staff will move forward immediately on implementing measures such as enhanced construction signage on our projects as well as an improved temporary line marking process in an attempt to be responsive to the concerns we have heard.

We will also continue to consider other measures such as night work, full road closures, and incentive / disincentive clauses on a project-by-project basis and these will be brought forward to Regional Council for approval, as required. It is expected that the implementation of these measures will lessen the effect our road construction projects have on our businesses and residents.

For more information on this report contact Dino Basso, Director, Capital Delivery, Roads Branch at extension 5902 in the Transportation and Works Department

The Senior Management Group has reviewed this report.