TORONTO

STAFF REPORT
ACTION REQUIRED

Improvements to the Utility Cut Management Process

Date:	February 9, 2010
To:	Public Works and Infrastructure Committee
From:	General Manager, Transportation Services Deputy City Manager and Chief Financial Officer
Wards:	All Wards
Reference Number:	p:\2010\ClusterB\tra\tim\ pw10002.tim

SUMMARY

The City of Toronto has more than 5,600 kilometres of roads which are vital to the economic health of the city and the service to our residents, businesses and visitors. It is important, therefore, that these roads are maintained in an acceptable condition for all users. This means that the roads must be safe to use, comfortable to ride or walk on and look in reasonably good shape.

Cuts into the roads by utility companies lead to serious deterioration of our roads. These are the cuts to the pavement made by the utility companies, such as Toronto Hydro, Enbridge, Bell, telecom companies, and even our own Toronto Water Division, to install, repair or expand their underground services. The repairs or patches to these utility cuts can result in a very uneven pavement that is uncomfortable to drive, cycle or walk on and is usually visually intrusive. At times, the patches can settle to a point where they create a hazard.

It is recognized that these utility companies provide valuable and essential services to the residents and businesses of our City and, accordingly, it is necessary to accommodate their needs as much as possible. However, each year the City issues permits for more than 38,000 utility cuts to our roads and that number is growing annually. To put this into perspective, this number of utility cuts totals over 200,000 square metres of pavement or the equivalent of the width of Yonge Street from Lake Ontario to Steeles Avenue (a total length of 17 kilometres). The disruption of this number of utility cuts to businesses, residents and visitors of Toronto is significant and the impact on the service-life of the road network is substantial.

Recognizing the extent of utility cut activity in our City and the resulting disruption to our communities, in 2006 City Council requested the Transportation Services Division to undertake a study of the impact of utility cuts on our pavements and, more specifically, the development of a "Pavement Degradation Fee Schedule." These fees would be an additional fee charged to the utility companies for the cuts that they make to the road pavements that would allow the City to recover the costs that it incurs due to the resulting reduction in the pavement service-life as well as increased maintenance expenses. All fees collected would go to a reserve fund for future road repairs and maintenance in the City. This report presents the findings of the 2-year study that involved extensive data collection and analysis of the impact of utility cuts on the City's pavements, outlines how the pavement degradation fees were developed, the implications of the fees to the utility companies, including Toronto Water, and a strategy for their implementation. In addition, this report seeks City Council approval on the establishment of a reserve fund from the fees collected from utility companies, Toronto Water and similar providers to help pay for the future reconstruction, resurfacing and maintenance of the City's roads.

Until now, the City has focused its efforts on ensuring that the road pavements are structurally sound. However, the complaints received by the City from residents and businesses with respect to the condition of our roads are not typically related to the structural integrity of the pavement, although obviously important, but more so on the comfort when using the roads as well as on the look of the roads. Therefore, the Transportation Services Division has undertaken a review of the overall utility cut management process, including standards, requirements, levels of inspection and enforcement, etc. to determine whether a different approach is needed to more effectively address the concerns of the travelling public. Accordingly, this report identifies opportunities for improvements to the utility cut management process and recommends the timeframes for implementation.

By adopting the recommendations in this report, the City will be able to more effectively manage the utility cut process. We will also be able ensure that the necessary measures and funds are in place to maintain the roads in a safer, more usable condition for all users. Finally, there will be a communications system in place that would enable the public to know when and where utility cut repairs are taking place.

RECOMMENDATIONS

The Deputy City Manager and Chief Financial Officer and the General Manager of Transportation Services recommend that:

PAVEMENT DEGRADATION FEES

1. The Pavement Degradation Fee Schedules and conditions for waiving of fees contained in Appendix C of this report be approved for all utility cuts to the City of Toronto's pavements and that the fee schedules be implemented effective June 1, 2010.

2. The fee schedules be applied uniformly to all utility companies and any other persons, agencies or organizations that carry out installation, replacement or repair of underground equipment, services or structures.

3. The funds collected from these fees be dedicated to road reconstruction, resurfacing and maintenance and be placed in an obligatory reserve fund, called the "Pavement Degradation Fee Reserve Fund," to be established for this purpose and administered through Transportation Services' Capital and Operating Budgets.

4. Municipal Code Chapter 227 (Administration of Reserves and Reserve Funds) be amended by adding the "Pavement Degradation Fee Reserve Fund" to Schedule 14 – State of Good Repair Obligatory Reserve Funds.

5. Municipal Code Chapter 441 (Fees and Charges) be amended by adding to "Appendix C" the Pavement Degradation Fee Schedules contained in Appendix C of this report, to Schedule 2 (Transportation Services).

6. Municipal Code Chapter 743 (Streets and Sidewalks) be amended as necessary to require the payment of pavement degradation fees by all persons, including utilities, applying for the cut permit for the installation, replacement or repair of underground equipment, services or structures.

IMPROVEMENTS TO THE UTILITY CUT MANAGEMENT PROCESS

7. The "Utility Cut Management Guidelines and Criteria" contained in Appendix E of this report be approved and that the General Manager, Transportation Services be directed to incorporate the guidelines and criteria in the standards document entitled, "Municipal Consent Requirements (MCR)" and all technical specifications for the repair of temporary and permanent utility cuts.

8. Municipal Code Chapter 441 (Fees and Charges) be amended by increasing the Utility Cut Billings Fee, for engineering and supervision in "Appendix C" (Schedule 2 (Transportation Services)), from 19.0 percent to 22.5 percent to reflect the increased cost of additional resources required for the Transportation Services Division's cut repair operations and that this revised fee be implemented effective June 1, 2010.

9. Municipal Code Chapter 743 (Streets and Sidewalks) be amended as necessary to implement the recommendations in this report and the "Utility Cut Management Guidelines and Criteria" as contained in Appendix E of this report.

10. The 'Full Stream' Utility Cut Permit Fee, as set out in this report, be approved for all full stream utility cut permit applications submitted to the City.

11. Municipal Code Chapter 441 (Fees and Charges) be amended by adding a 'Full Stream' Utility Cut Permit Fee in the amount of $600.00 per full stream application submitted to the City for review and inspection, in "Appendix C" (Schedule 1(Technical Services)), and that it be collected at the time full stream applications are submitted to the City and that this new fee be implemented effective June 1, 2010.

12. Municipal Code Chapter 743 (Streets and Sidewalks) be amended as necessary to require the payment of the Full Stream Utility Cut Permit Fee by all persons, including utilities, applying for a cut permit for the installation, replacement or repair of underground equipment, services or structures.

13. The General Manager, Transportation Services be directed to submit, for consideration, as part of the 2010 and 2011 Operating Budget deliberations, the additional resources required to implement the recommended "Utility Cut Management Guidelines and Criteria."

14. The General Manager, Transportation Services be directed to proceed with the implementation of the "Immediate" and "Short Term" planned initiatives discussed in this report.

15. The General Manager, Transportation Services be directed to study and evaluate the financial, legal and resource implications related to the initiatives identified in the "Intermediate" and "Long Term" plans discussed in this report, and report back to the Public Works and Infrastructure Committee, at the appropriate time, after the completion of the assessment.

16. The appropriate City Officials be authorized and directed to take the necessary action to give effect thereto and leave be granted for the introduction of any necessary Bills in Council to give effect thereto.

FINANCIAL IMPACT

Approval and implementation of the Pavement Degradation Fee Schedules will result in an average annual cost recovery for the Transportation Services Division of $4.0 million. This estimate is based on a weighted average pavement degradation fee of $20.00 per square metre and assumes 2008 levels for pavement-related utility cut work and repair in the amount of 200,000 square metres. The amounts generated from these fees will be dedicated for use within the Transportation Services Division's Capital and Operating Budgets to offset the cost of rehabilitation or repair of the City's pavements due to utility cuts. Estimated revenue from pavement degradation fees for 2010 is $1.0 million and it is included in the Transportation Services' 2010 Recommended Operating Budget to recover pavement maintenance costs.

Adoption of the Pavement Degradation Fee Schedules will require the establishment of a reserve fund to accrue funds to be deposited from utility companies and others, which will be used in future years for the reconstruction, resurfacing and maintenance of the City's pavements. The fee program will be administered from within existing Transportation Services resources.

An increase in the Utility Cut Billings Fee from the current 19.0 percent to 22.5 percent, for engineering and supervision, would be used to recover the cost of the additional resources, estimated at 20.0 staff positions, at a cost of $0.688 million, required to enhance key areas of field inspection, contract administration, enforcement of standards and specifications through quality control of the utility work undertaken by applicants. The first ten positions (i.e., 8 Utility Cut Examiners and 2 Maintenance Patrollers) are required in 2010 and will be funded

through the revenue generated from the increased Utility Cut Billings Fee. This revenue is estimated at $0.820 million for 2010 and it is included in the Transportation Services' 2010 Recommended Operating Budget. The remaining ten positions (i.e., 6 Maintenance Patrollers, 2 Supervisors Contract Inspection, 1 Inspector and 1 Inspector Municipal Construction) required in 2011 will be accommodated through a reallocation of existing vacant positions and reported with the 2011 Operating Budget Process. An incremental revenue impact of $0.580 million is anticipated in 2011.

Approval and implementation of the 'Full Stream' Utility Cut Permit Fee in the amount of $600.00 per full stream application to be paid by all persons, including utilities, will allow the City to recover its expenses associated with the review and inspection of full stream applications, which for 2010 is estimated at $0.400 million (i.e., based on June 1, 2010 implementation of the fee) with an incremental impact of $0.530 million to June 1, 2011. The anticipated revenues for 2010 are included in the Technical Services' 2010 Recommended Operating Budget.

The cost of the recommended "Immediate" and "Short Term" initiatives for improvements to the utility cut management process is minor and requires only collaboration between Toronto Water, Technical Services, Transportation Services and the utility companies. Financial implications related to the initiatives identified as "Intermediate" and "Long Term" will be reported back after a detailed assessment has been undertaken.

DECISION HISTORY

City Council, at its meeting of September 25, 26 and 27, 2006, adopted the report (Works Committee Report 6, Clause13) dated August 28, 2006 entitled, "Pavement Degradation Fees (All Wards)" and the following recommendations, with amendments:

> "(1) an option for pavement degradation fees be pursued for the City of Toronto; and
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> (2) the Transportation Services Division report back in January 2007 on the findings of a study of the impact of utility cuts on the performance of the City of Toronto pavements, a fee structure for pavement degradation, impacts of such fees and a strategy for implementation."

As described further in this report, the study involved much more extensive data collection, data analysis and stakeholder consultation than initially envisioned. The scope of the study was also expanded to include a complete review of the utility cut management process. For these reasons, and others, it was not possible to complete and report on the findings of the study in 2007.

ISSUE BACKGROUND

The City of Toronto operates a road network of over 13,300 lane-kms, which is vital to the economic health of the City. Millions of dollars are invested annually in the reconstruction, rehabilitation and repair of this public infrastructure. However, maintaining the City's pavement investment is becoming increasingly difficult each year as a result of premature deterioration due to utility cuts.

Each year the City issues on average 40,000 utility cut permits to utility companies, developers, contractors, etc. for the construction, maintenance, upgrading, etc. of underground utilities within the City's municipal right-of-way. Of this total, on average 9,500 permits result in cuts to the City's pavements involving 38,000 separate pavement-related utility cuts totalling 200,000 to 300,000 square metres of permanent pavement restoration work. Currently, the City of Toronto only recovers its expenses for permanent restoration of utility cuts, with an additional percentage fee to address the administration of the program. Despite the City's best efforts and restoration practices, the visible deterioration of the City's pavement infrastructure is becoming more evident. The costs to the City of this accelerated deterioration are a direct result of the issuance of utility cut permits.

The impacts of utility cuts on pavement performance have been well documented in countless independent studies undertaken by the City and others. As the road network ages, utilities buried beneath the pavement also age. This trend of aging infrastructure significantly increases the frequency of pavement utility cuts, as access to these utilities is required for repairs and for new connections to service the City's growing population and employment. No matter how well a utility cut has been repaired, the impact is an accelerated loss in useful pavement service-life. The resulting deterioration in pavement performance increases the City's burden with costly rehabilitation work and inconvenience to the public. The City of Toronto, as a number of other jurisdictions have already done, is responding to these growing concerns by introducing pavement degradation fees for the recovery of costs incurred by the City as a result of permitted utility cut work. Implementation of such fees, along with improvements to the City's existing utility cut management process through the enhanced monitoring, repair and enforcement of rehabilitation standards of utility cuts, will ensure that the pavement affected by these cuts are maintained in good repair at both the temporary and permanent repair stages.

COMMENTS

The management of utility cuts in the City of Toronto has evolved over the years since amalgamation. A number of policies, procedures and processes have been developed, in consultation with the Toronto Public Utilities Coordinating Committee, and are included in a standards document entitled, "Municipal Consent Requirements (MCR)," including among other things, requirements of the permitting process and standards for temporary and permanent utility cut repairs. Significant improvements have been made in developing the necessary internal and external processes and framework for coordination of utility cut repairs. Despite the accomplishments in these various areas, there is no doubt that difficult challenges and issues, affecting the state of repair of the City's pavement infrastructure, remain to be resolved. One area relates to the management process for temporary and permanent utility cut repairs.

Options to address some of the issues, including inspections, enhanced repair standards, clarification of responsibilities between City forces and utilities will ensure that temporary and permanent repairs are done in a manner that reduces the potential for additional costs to the utility companies and minimize the impacts to motorists and the general public. Some of these options, which can be implemented immediately and others phased-in over time, will be discussed in the latter part of this report. Initially, the primary focus of this report will be on pavement degradation fees and its application in the City of Toronto.

Many jurisdictions have implemented pavement degradation fees for utility cuts with varying degrees of success. In one particular case, fees introduced by the City of Vancouver to be applied to telecommunication companies were legally challenged, at the Canadian Radio-television and Telecommunications Commission (CRTC), and the challenge was upheld because the fees were not based on local conditions and analysis. In this instance the CRTC acknowledged that municipalities do have the right to apply pavement degradation fees (PDFs) to cover such damages, but that the fees should be supported with evidence. This can only be done if municipalities use their own data (i.e., not borrowed information) in the development of their fees. Furthermore, the jurisdiction must demonstrate the amount of damage to pavement service-life and that any fee charged be commensurate with those damages.

Of note, recently the CRTC ruled on March 19, 2009 on a number of issues related to road access between a utility communications provider and the City of Vancouver. The CRTC approved the City of Vancouver's proposed pavement degradation fee schedule because it was supported by a detailed cost study that was conducted after the City's original proposed rates were not accepted. The CRTC's decision is the most recent endorsement of the concept of pavement degradation and the science supporting it. To ensure that the City of Toronto's proposed PDFs are defensible and supported by sound technical analysis, the Transportation Services Division undertook its own detailed 2-year study to determine the impact of utility cuts on pavement performance and service-life. The details of that work are summarized in Appendix A (Pavement Degradation Fee Study), with the proposed PDFs tabulated in Appendix C.

PAVEMENT DEGRADATION FEES

Through analysis, it was determined that the impact of utility cuts was directly dependent on the age of the pavement at the time the utility cut was introduced. Based on these findings, a hierarchy of pavement degradation fees by pavement type, road class and pavement age was developed. The proposed Pavement Degradation Fee Schedules are documented in Appendix C of this report and are recommended to be applied to all utility cuts within the City's pavements. Also, it is recommended that PDFs be waived when the pavement reaches a certain age or if the pavement is programmed for reconstruction within the Transportation Services' Five-Year Capital Works Program. These two conditions for waiving fees may create more incentive for utility companies to plan and coordinate their capital improvements with the Transportation Services Division capital program to take advantage of the waiving of these fees. Furthermore, it is recommended that the fees be applied to all utility companies, contractors and developers that carry out installation, replacement or repair of underground equipment, services or structures, and that it be applied uniformly. This would also mean that the City's Toronto Water Division would be subject to the same pavement degradation fees as other entities doing work within the City's roadways.

Fee Impacts

The findings of the study and proposed pavement degradation fees were presented to members of the Toronto Public Utilities Coordinating Committee (TPUCC) for consideration and comment. The reaction by the committee members was mixed but, not surprisingly, they generally expressed an objection to the imposition of such fees. TPUCC's concerns were not, for the most part, related to the validity of the technical study or the results, but focused more

on whether the City of Toronto has the legal authority to impose pavement degradation fees. The City of Toronto's ability to charge fees to major utilities (gas, electric and telecommunications) is limited by Regulation 595/06 under the *City of Toronto Act, 2006* to the recovery of "reasonable costs for issuing permits to place the works on a municipal highway; and to cut the pavement of or otherwise dig up a municipal highway for the works." While the language used in this regulation could be clearer, the City has taken a broad interpretation of this provision as permitting the recovery of costs which are clearly incurred by the City as a direct result of the issuance of a cut permit. A current example of this would be the cost the City is currently charging for the permanent repair of road excavations undertaken by utility companies. Based on the results of the study as outlined in this report, it is clear that the accelerated rate of pavement degradation (and resultant additional cost to the City) is also directly related to the issuance of cut permits and those construction activities and is therefore a reasonable cost incurred by the City which may be recovered as a condition of the issuance of such permits.

With the introduction of pavement degradation fees it is expected that a significant return will be generated annually, based on the level of utility work in previous years affecting the City's pavements. Based on 2008 figures, 200,000 square metres of pavement-related utility cut work and repair was carried out. Using this 2008 figure and applying a weighted average pavement degradation fee of $20.00 per square metre, based on the City's pavement network profile, fees in the amount of approximately $4.0 million would be generated. This level of utility activity is typical of what has been observed in the past, but may vary from year to year and will depend on how extensive the future programs of some utility companies will be.

An examination of the number of utility cut permits issued by Transportation Services in 2008, revealed the following level of permit issuance for various utility work.

Utility	% of Permits
Cable TV	26%
Gas	20%
Hydro	8%
Miscellaneous	4%
Telecom	4%
Telephone	11%
Water & Sewer	27%

The monies collected as a result of Pavement Degradation Fees should, in the opinion of the City's Legal Services Division, be applied towards the reconstruction, resurfacing and maintenance of the City's pavements, since the accelerated deterioration of pavements due to utility cuts is the underlying principle for imposing such cost recovery. It is therefore recommended that the fees collected be dedicated for this purpose. Furthermore, it is recommended that City Council establish an obligatory reserve fund, called the "Pavement Degradation Fee Reserve Fund," to be used for the reconstruction, resurfacing and maintenance of pavements, to be administered through Transportation Services' Capital and Operating Budgets detailed in Appendix D, and that this Reserve Fund be funded through the pavement degradation fees charged to all utility companies and others whose works will require the permanent restoration of utility cuts. Also, Municipal Code Chapter 441 (Fees and Charges) should be amended by adding to "Appendix C" (Schedule 2 (Transportation Services)) the Pavement Degradation Fee Schedules contained in Appendix C of this report.

As well, Municipal Code Chapter 743 (Streets and Sidewalks) should be amended as necessary to require the payment of pavement degradation fees by all persons, including utilities, applying for the cut permit for the installation, replacement or repair of underground equipment, services or structures.

Implementation Strategy

In order to implement these fees as soon as possible, it will be necessary to:

- Modify the existing Transportation Services management systems that are used to issue utility cut permits (i.e., Road Allowance Control System), track the extent of utility cut repairs (i.e., Toronto Maintenance Management System) and provide relevant pavement attributes to administer the PDF (i.e., Municipal Pavement Management Application);

- Establish an obligatory reserve fund, called the "Pavement Degradation Fee Reserve Fund" and enact required amendments to the Municipal Code; and

- Provide notice to the members of the Toronto Public Utilities Coordinating Committee (TPUCC), although there is no statutory requirement to provide notice prior to the fees coming into force once approved by City Council.

On the last point, should City Council approve the PDFs, it would be advisable that the City provide notice to the TPUCC for the coming into force of the fees sixty (60) days from the date of approval by City Council. Given these requirements, it is recommended that the PDFs be implemented effective June 1, 2010.

IMPROVEMENTS TO THE UTILITY CUT MANAGEMENT PROCESS

Utility owners cut City pavements, sidewalks and boulevards to either repair, upgrade or install new services to meet the needs of a growing resident and business population. The dramatic increase in demands for the use of the public right-of-way has seen a significant rise in the number of utility cuts made annually. This has been disruptive to the general public and abutting property owners and has also resulted in increased costs for inspections and repairs, and a decrease in pavement service-life.

Managing utility cuts from the time a permit is issued until the time of permanent utility cut restoration brings with it some difficult challenges and issues. Based on the current state of our road network, there is a need to refine the utility cut management process in order to address specific challenges. In conjunction with the work done in developing the pavement degradation fees, a parallel exercise was undertaken to find opportunities to improve the overall utility cut management process through improved repair guidelines, increased resources and the development of an action plan for the implementation of a number of new solutions, which are discussed further below.

Utility Cut Management Guidelines and Criteria

Currently, utilities that carry out excavation work within the public right-of-way are required to complete only temporary restoration of utility cuts. After temporary reinstatement is completed, the respective utilities are required to monitor and repair deficiencies for a period of up to eighteen months. During that time, the temporary repair is allowed to go through at least one freeze-thaw season allowing the subsoil time to adequately settle. Permanent repairs are then carried out by the City, through contracted work, in accordance with the Construction Specifications (TS 4.60) of the City of Toronto and then billed back to the respective utility company. These specifications also include a provision whereby milling and paving (i.e., resurfacing) may also be undertaken in conjunction with the permanent restoration of the utility cut depending on the size, location and nature of the cuts. However, the current requirements for milling and paving, as part of permanent utility cut restoration, are driven by the infrastructure needs rather than the general public's expectations. Generally, the expectations by motorists, cyclists and pedestrians are based on their driving, cycling and walking experience.

A review of the current City practices and specifications for utility cut repair work revealed that staff efforts were predominantly focused on restoring the structural integrity of the pavement (i.e., restoring its strength to as close as possible to what it was when it was prior to the utility cut). Less attention was placed on addressing the issues that have become most relevant to the motorists, cyclists and pedestrians who use the roadway, which are ride comfort, aesthetics, and safety.

There are clear protocols and specifications in place that utility companies are expected to adhere to when cutting the roadway and patching the pavement in the vicinity of the utility cut. However, poorly repaired or settled utility cuts often create rough riding surfaces which sometimes cause motorists and cyclist to weave in order to avoid them, and increasing the likelihood of accidents. Users of the roadway or the abutting community have often raised concerns that the permanent restorations undertaken on a series of cuts or on a lengthy trench cut are visually intrusive and the roadway quality is unacceptable. Staff have reviewed the current restoration practices and protocols for temporary and permanent utility cuts and identified areas that could be enhanced to address the public's concerns and ensure a higher level of accountability is employed by both the utilities and City forces. These new enhancements are documented in the proposed Utility Cut Management Guidelines and Criteria ("Guidelines") in Appendix E of this report.

The Guidelines spell out the objectives behind undertaking temporary and permanent repairs of utility cuts, including milling and paving of the road, with clearly defined rules and criteria. Some of the rules defined in the Guidelines currently exist while many others are new and would need to be incorporated into the standards document entitled, "Municipal Consent Requirements (MCR)," and all technical specifications for the repair of temporary and permanent utility cuts. Once these Guidelines are in place and enforced, significant strides will have been made in ensuring a more responsive and effective approach to managing the right-of-way.

It is recommended that the "Utility Cut Management Guidelines and Criteria" contained in Appendix E of this report be approved and that the General Manager, Transportation Services be directed to incorporate the guidelines and criteria in the standards document entitled,

"Municipal Consent Requirements (MCR)," and all technical specifications for the repair of temporary and permanent utility cuts. As well, staff shall consider the necessity to include certain of these new regulations by way of amendment to Municipal Code Chapter 743 (Streets and Sidewalks, Use Of).

Revised Utility Cut Billings Fee and New 'Full Stream' Utility Cut Permit Fee

Through the number of permits issued annually, there has been a rapid rise in the amount of utility cut activity over the years – almost triple the amount since 2000. Currently, the City of Toronto, and more specifically Transportations Services, recovers only its expenses for permanent restoration of utility cuts. Billings to utility companies are expected to cover the expenses for administration, coordination, engineering, inspection of work completed and repairs.

In order to expedite the review and efficient approval of utility works, permit applications are sorted into "short stream" or "full stream" applications. The former, comprising about 90.0 per cent of the total, involve relatively minor works such as emergency repairs, connection of services to mainlines, reconstruction of mainline distribution or surface infrastructure including pole line along an existing alignment, etc. Full stream applications require a greater level of engineering review for activities such as relocation or installation of new underground infrastructure on a new alignment or other work that has potential to disrupt existing utilities. The detailed review and inspection of full stream applications is undertaken by Technical Services, however, the expenses associated with these activities are not currently recovered from the applicant.

In terms of co-ordinating and tracking the various types of work in the road allowance, the permitting system is critical. In the order of over 40,000 permits are issued annually. In addition, the below grade infrastructure is so dense and complex in some areas that the proper review of proposals by the City and all utilities occupying the areas is essential.

The current staffing levels, to carry out field inspection, monitoring and enforcement are insufficient to cope with the volume of work and be expected to perform these functions properly. To ensure that the City is able to manage the current volume of utility cut work and implement some of the key aspects of the guidelines, there will be a need for additional resources to enhance field inspection, quality assurance and enforcement of standards and specifications for the utility work.

As previously noted, Transportation Services recovers its expenses for its utility permitting and cut repair operations through the Utility Cut Billings Fee, which is currently set at 19.0 percent of the cost of the permanent restoration. Staff has examined all the expenses incurred in administering the cut repair portion of the Transportation Services Division's operation and have determined that the recovery of cost to the City to meet the demands placed upon it by the volume of utility cuts and implementation of the new guidelines would require the Utility Cut Billing Fee to be raised from 19.0 percent to 22.5 percent. The increase in fee would offset the cost of the additional resources, in the amount of 20.0 new full time equivalent staff, required to enhance key areas of field inspection, contract administration, enforcement of standards and specifications through quality control of the utility work undertaken by applicants. The first ten positions (i.e., 8 Utility Cut Examiners and 2 Maintenance Patrollers) are required in 2010

at a cost of $688,000.00. These positions will be funded through the revenue collected as a result of the increased Utility Cut Billings Fee estimated at $820,000.00 for 2010. The additional staff resources and associated costs and revenues are included in the 2010 Transportation Services' Recommended Operating Budget. The remaining ten positions (i.e., 6 Maintenance Patrollers, 2 Supervisors Contract Inspection, 1 Inspector and 1 Inspector Municipal Construction) required in 2011 will be accommodated though a reallocation of resources and reported with the 2011 Operating Budget Process. There will an incremental revenue impact in 2011 of $580,000.00

As was previously mentioned, the review and inspection activities associated with full stream applications are currently undertaken by the Technical Services Division. Approximately 1,550 full stream applications are processed annually and to-date this service has been provided free of cost to the applicant. The City can no longer justify providing this service at no expense to the applicant and is therefore recommended that a 'Full Stream' Utility Cut Permit Fee be approved in the amount of $600.00 and be applied to each full stream application submitted to the City for consideration. This will allow the City to recover its expenses associated with the review and inspection of full stream applications, which for 2010 is estimated to be $400,000.00 (based on June 1, 2010 implementation of the fee) with an additional revenue impact of $530,000.00 to June 1, 2011. The anticipated revenue for 2010 is included in the Technical Services' 2010 Recommended Operating Budget.

It is therefore recommended that Municipal Code Chapter 441 (Fees and Charges) be amended by increasing the Utility Cut Billings Fee, for engineering and supervision operating cost, in "Appendix C" (Schedule 2 (Transportation Services)), from 19.0 percent to 22.5 percent and that the fee be implemented effective June 1, 2010. The General Manager, Transportation Services will also submit, for consideration as part of future Operating Budget deliberations, the additional resource requirements associated with the implementation of these guidelines.

It is further recommended that Municipal Code Chapter 441 (Fees and Charges) be amended by adding a 'Full Stream' Utility Cut Permit Fee in the amount of $600.00 per full stream application submitted to the City, in "Appendix C "(Schedule 1 (Technical Services)) and that this new fee be implemented effective June 1, 2010, and it be collected at the time the application is submitted to the City.

Opportunities for Additional Initiatives

A number of other initiatives were identified to help improve the overall management of utility cuts. Each initiative has a specific timeframe for review and implementation - ranging from immediate to long term. Some of the immediate solutions can be implemented by Toronto Water, Technical Services and Transportation Services Divisions in a joint effort to increase public awareness and mitigate inquiries to the various utility improvements or repairs within the City road allowance, which are discussed below. In addition, Transportation Services, as part of its short, intermediate and long term plan for its utility cut program, will include initiatives such as re-sealing of permanent cuts, elevating patrol expectation and possible penalties and back charging to utility companies for leaving cuts in a state of disrepair. In addition, consideration will be given to the use of technology options for tracking and reporting of utility cuts. The complete list of initiatives to be phased-in over time is summarized below.

Immediate Plan (within 2 to 3 months)

- *Magnetic Vehicle Identification Signs by Work Type:* These signs would indicate the type of City field work crews on site (i.e., Pot Hole Repair Crews or Watermain/Sewer Repair Crews, etc.). Such signs will help to inform various City inspectors and the general public on what is happening and which working crew is carrying out the repairs. The exception to this would be independent contractors working for property owners.

- *Public Notices to Homeowners:* Utility companies doing work within the City's street allowance would be required to issue a public notice to the impacted homeowners, by providing information on the type of work to be undertaken, details on the type of repairs, duration of work, and expected timing for permanent repairs.

The above two measures are relatively simple to implement and require only collaboration between Toronto Water, Technical Services, Transportation Services and the utility companies. It is recommended that the initiatives in the "immediate plan" be implemented within the timeframe identified above.

Short Term Plan (6 months)

- *Enforce the Use of On-site Construction Signs:* Such signage would be expected to include the contract number, type of work and duration for short term projects.

- *Enhancing Training of City Staff:* This training would focus on post-cut inspection of both temporary and permanent utility cut repairs and documentation of cuts.

- *Stamping/Stencilling "temporary" repairs with utility identification and date:* A visible identifier directly adjacent to the temporary utility will have to be placed by the utility doing the work (e.g., "Gas", "Hydro", "Water", etc.). This will help to easily identify, in the field, the division or utility responsible for the temporary cut and its inspection and maintenance until permanent restoration is undertaken.

- *Internal Review of the current permit process:* A detailed review of the permitting process will be conducted to determine if any efficiency can be achieved in regards to utility cuts, including the possible centralization of the permit review and approval process. This review is currently underway.

- *Review of the criteria for temporary utility cut repairs:* Currently, all utility cuts must be repaired temporarily and allowed to experience at least one freeze/thaw cycle before being repaired permanently. A pilot project is underway to determine whether any circumstances exist that would eliminate the need for these temporary repairs thus reducing costs and disruption.

Intermediate Plan (12 months)

- *Increasing Patrol:* Transportation Services would elevate utility cut expectations towards temporary repairs made by utility companies and review staffing requirements for achieving the desired objective.

- *Training of Utility Company Staff:* The training would focus on post-cut inspection of temporary utility cut repairs and documentation of cuts. This training will help to emphasize the City's expectations and repair standards for temporary utility cuts.

- *Development of Penalties and Charge-backs for Poor Repairs:* This would involve a well defined procedure for charging and recovering costs associated with utility companies leaving their temporary utility cut repairs in a state of disrepair.

- *Development of a Proposal for Re-sealing of Permanent Cuts after 3-5 years:* A number of years after a permanent utility cut has been repaired, the seal around its outer edges will occasionally deteriorate. This results in water seeping into the cut, and if left un-sealed would result in a slow decline in the condition of the permanent repair. A more proactive program to re-seal these cuts will ensure that the integrity of the permanent repair is restored.

Long Term Plan (12 to 36 months)

- *Implementation of penalties and cost recovery from utilities for work conducted by the City to temporary cuts*: This task would examine how these cost recoveries can be implemented and their implications.

- *Development and Implementation of a GPS Tracking System*: Examine the opportunity to implement a GPS tracking mechanism for utility cuts. This system would provide a status for utility cut permits at the time of approval, for both temporary and permanent repairs. Initially, a pilot project plan will be developed in 2010, with the actual pilot rolled out during the 2011 construction season. Transportation Services will look to pilot such a system in conjunction with some of the projects that Toronto Water would be undertaking in one of the four district areas. The results and lessons learned from the pilot will ensure that the fully implemented system meets the desired goals.

- *Development and Implementation of Wireless Utility Cut Permitting Access*: This would allow patrol and inspection the ability to send electronic non-compliance work orders to utilities.

- *On-line Status Reporting on Utility Cut Repairs:* Options will be examined for establishing an on-line website that provides the general public with the status of utility cut repairs. Once an on-line website has been established, Transportation Services will co-ordinate with the 311 customer service office to enable 311 representatives, when contacted by the public, to have access to all relevant information regarding utility cuts within their community or on a specific street. 311 representatives will be able to access information on a specific cut in question, which will include: the utility involved (or city department), when the cut was made, size, when it is to be repaired, when it

was last inspected or at what stage of the utility process the cut is in and the nature of the cut (i.e., whether it is maintenance, an upgrade, emergency, etc.). This will be further supplemented with information related to the hours of the day that work is permitted to take place, as complaints are often received regarding work taking place during rush hour or on weekends. Finally, 311 representatives will also be able to inform the public as to when permanent restoration of cuts will occur.

Some of the initiatives identified as "intermediate" and "long term" initiatives, within the action plan, pose some logistical and financial challenges and therefore, it is recommended that the General Manager be authorized to study and evaluate the financial, legal and resource implications of these initiatives and report back to the Public Works and Infrastructure Committee on their specific details, at the appropriate time.

Through the implementation of the various initiatives, discussed above, the enhanced utility cut management process will ensure that temporary and permanent repairs are done in a manner that will improve the condition of the roadway, reduce the potential for additional costs to the City and utility companies, minimize the impacts to motorists and reduce complaints from the public.

A summary table, in Appendix F (Utility Cut Management - Current and Proposed Processes and Requirements) of this report, provides an overview of the various phases of the utility cut management process, specifically highlighting the proposed improvements to the process and requirements and timeframes for their implementation.

Conclusion

With respect to the detailed study undertaken by Transportation Services, it has been demonstrated that utility cuts do contribute to a reduction in overall service-life of pavements and therefore reduce the value of the City's investment in its pavement infrastructure. By recovering the loss in pavement serviceability, through the collection of pavement degradation fees, the City will be in a better position to maintain its investment and ease the future financial burden of costly rehabilitation work that will need to be undertaken or advanced as a direct result of the issuance of road cut permits. Furthermore, the approval and implementation of a full stream application fee to be paid by all persons, including utilities, will allow the City to recover its expenses associated with the review and inspection of full stream applications, which has until now been provided to the applicant at no cost.

In addition, the proposed improvements to the utility cut management process, through new management guidelines, an increase in available resources, accommodated through an increase in the Utility Cut Billings Fee, and phased-in initiatives will help to ensure that the invested time, energy and resources used in managing utility cuts properly safeguard the public right-of-way. Most importantly, these improvements will ensure that public safety is maintained and that the inconvenience and disruption to the traveling public and communities by the utility work undertaken within the City's roadways are minimized.

Staffs from the Financial Planning, Legal Services, Technical Services and Toronto Water Divisions have been consulted in the preparation of this report.

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ATTACHMENTS

Appendix A – Details of the Pavement Degradation Fee Study
Appendix B – Calculation of Serviceability
Appendix C – Pavement Degradation Fee Schedule
Appendix D – Pavement Degradation Fee Reserve Fund
Appendix E – Utility Cut Management – Guidelines and Criteria
Appendix F – Utility Cut Management – Current and Proposed Processes and Requirements

Appendix A

Details of the Pavement Degradation Fee Study

Findings of the Study

To understand the level of pavement degradation due to utility cuts a condition assessment was performed on a select set of pavement segments across the City of Toronto. Obtaining precise and reliable data was critical to ensure that the contribution of utility cuts to long term pavement degradation could be confidently estimated. To collect the level of detail required for this study a consultant was retained, who examined approximately 138 km of road, of varying pavement structures (i.e., **flexible pavements**: asphalt surface with granular sub-base, and **composite pavements**: asphalt surface with a concrete base and granular sub-base). The study included the detailed mapping of pavement surfaces to determine the extent and severity of distresses in various pavement segments, both with and without utility cuts. The investigation also included the use of Ground Penetrating Radar (GPR) to confirm whether or not utility cuts existed under the surface of the roadway, which would not be visible after a road has been resurfaced. Once this preliminary work was carried out, each section of road was then subdivided into 25 metre segments, of which a random 10% sample was analyzed as representative samples. In addition, the Pavement Quality Index (PQI), which is an overall index used to provide an assessment of the pavement condition and has a value range of 0 to 10 (10 being a new pavement), was calculated for each representative segment. Once the calculated PQI with detailed distress information and the locations of all utility cuts were mapped for each section, the data was then provided to City staff who performed more extensive analysis.

The data for each pavement segment was analyzed using widely accepted statistical methods, which examined a number of factors (pavement age, pavement type, etc.) to determine to what degree utility cuts impacted pavement performance and whether there was a correlation to some of these factors. The analysis revealed that:

1. there was a strong statistical significance between the performance of pavements with and without cuts;
2. pavement service-life is reduced when utility cuts are introduced and was observed for both composite and flexible pavements; and
3. the impact on service-life varied by road class, pavement type and age of the pavement.

Based on the above findings, there was sufficient information to proceed with the development of a fee schedule, which is presented below.

Fee Schedule Development

The next steps in developing the PDF schedules entailed carrying out both a performance and economic analysis. Through the performance analysis, the amount of lost pavement serviceability due to utility cuts, over the entire life cycle for different pavement types, was estimated. Once the loss in pavement serviceability was calculated, this figure was then used in

the economic analysis to estimate the financial impact due to utility cuts. The concept of "lost pavement serviceability" is illustrated in Appendix B to this report.

Graph # 1 in Appendix B illustrates the typical performance curve (i.e., PQI versus pavement age) for a composite type pavement. The curve shows that a new pavement starts at a PQI rating of 9.8 out of 10, and as it deteriorates with time it eventually reaches a point in time where it must be then resurfaced, and those cycles, shorter in duration, repeat themselves until the pavement eventually needs to be reconstructed. Transportation Services has developed similar performance curves for a variety of different pavement types, based on pavement structure and traffic loadings. In Graph # 2, in Appendix B, the performance curve for the same pavement, but with utility cuts introduced, is plotted. As can be seen, the performance curves, over the life cycle of this pavement, are lower than that of a typical pavement without utility cuts. The impact of the utility cuts causes the pavement to deteriorate sooner, resulting in the advancement of resurfacing work and ultimately the premature reconstruction of the road.

To estimate the "lost pavement serviceability", the difference in the areas under each of the two performance curves (with and without utility cuts) was calculated (i.e., Graph # 3). This difference in area under the curves represents the lost serviceability, expressed as a percentage of the original area under the curve for the pavement without utility cuts.

Having now established the percentage in serviceability loss over the course of a pavement's entire life cycle, it was then possible to calculate the various pavement degradation fees, which include two distinct components. The formula for deriving the PDF is provided below:

PDF ($/m^2) = Cost of Serviceability Loss + Additional Maintenance Cost

The "Cost in Serviceability Loss", as previously discussed is calculated by multiplying the percentage of serviceability loss with the unit cost for reconstructing a pavement, which will vary for each pavement type. The formula to calculate the "Cost in Serviceability Loss" is provided below:

[Cost of Serviceability Loss = (%Serviceability Loss x Unit Cost to Reconstruct Road)]
($/m^2)

The "Additional Maintenance Cost" represents the added maintenance expenditures incurred by the City to repair pavement deficiencies resulting from road utility cuts. The types of repairs carried out include, crack sealing, patching, pothole repair and lane paving. The estimated maintenance cost attributable to utility cuts represents approximately thirty percent (30 %) of what Transportation Services typically spends in its annual Capital budget for the resurfacing and reconstruction of roads. This thirty percent component is applied to the cost in lost serviceability, previously discussed. The formula to calculate the "Additional Maintenance Cost" is provided below:

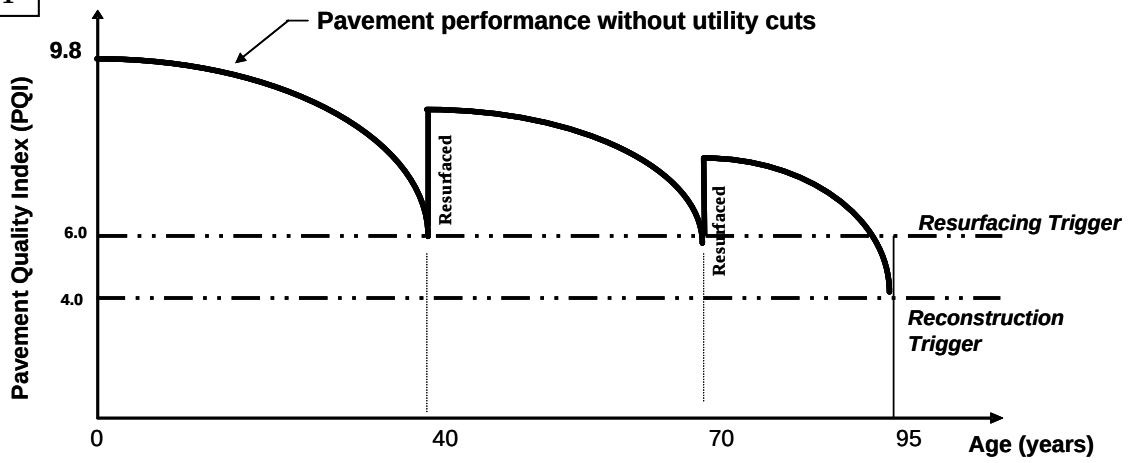
[Additional Maintenance Cost ($/m^2) = 30% x Cost of Serviceability Loss]

Appendix B

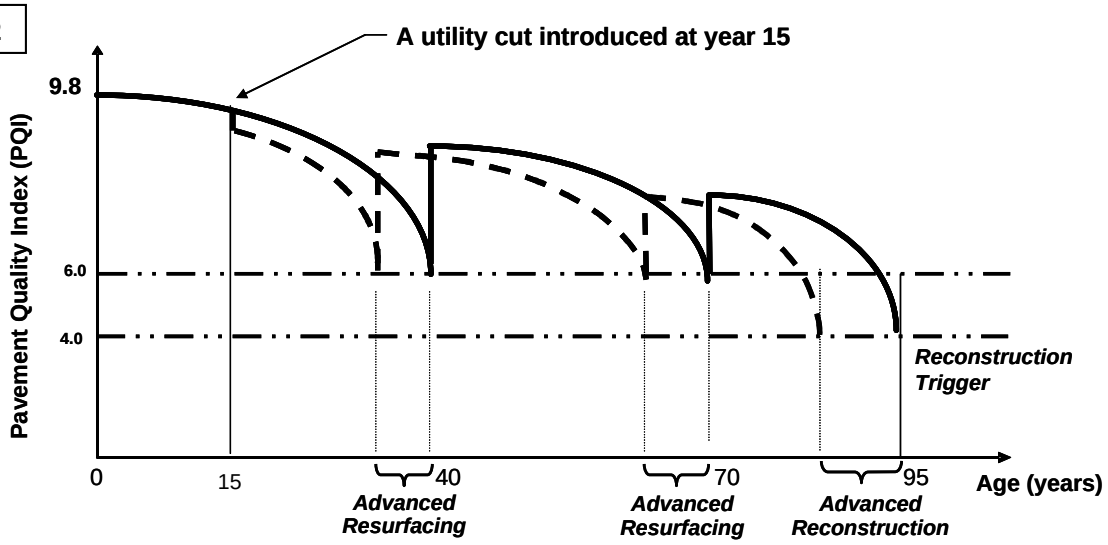
CALCULATION OF SERVICEABILITY

(Life Cycle of Composite Pavements)

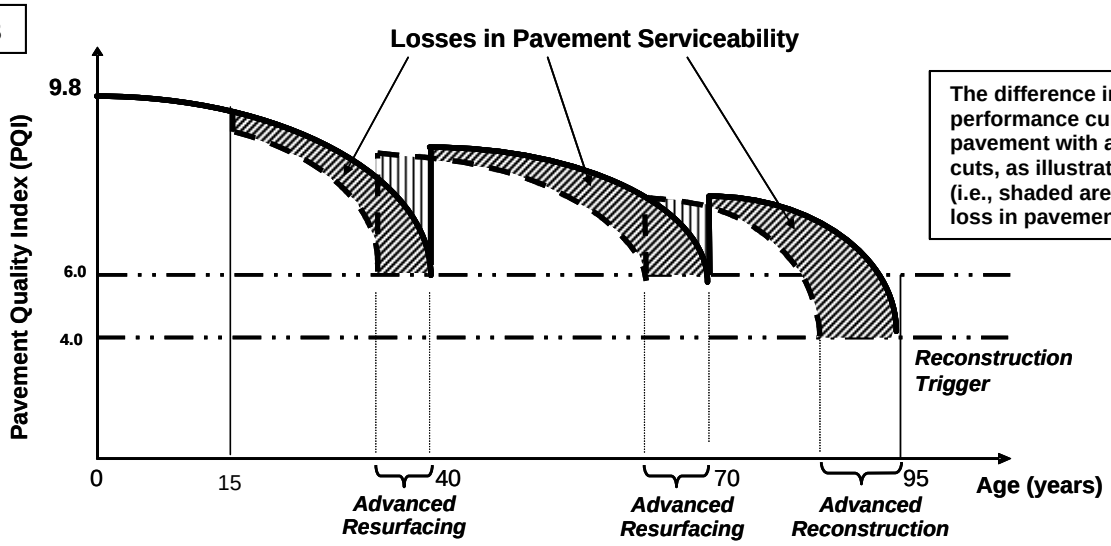
Graph # 1



Graph # 2



Graph # 3



The difference in areas beneath the performance curves for a pavement with and without utility cuts, as illustrated in Graph # 3 (i.e., shaded areas), represents the loss in pavement serviceability.

Appendix C

Pavement Degradation Fee Schedules[1]

Flexible Pavement		
Pavement Age	Arterial Road	Local/Collector Road
	($/m^2)	($/m^2)
0 – 15	40	34
16 – 30	32	27
31 – 45	24	20
46 – 55	18	14
56 – 70	11	9
70$^+$	0	0

Composite Pavement		
Pavement Age	Arterial Road	Local/Collector Road
	($/m^2)	($/m^2)
0 – 15	33	29
16 – 30	26	23
31 – 40	19	17
41 – 55	15	14
56 – 65	12	10
66 - 80	9	8
80$^+$	0	0

1. **Pavement degradation fee is waived if pavement is scheduled for reconstruction in the five-year capital program.**

Appendix D

Pavement Degradation Fee Reserve Fund

(a) Location within the Consolidated Reserves/Reserve Funds Schedule:

Account within Schedule # 14 – State of Good Repair Obligatory Reserve Funds

(b) Statement of Purpose

This reserve fund will be used for the reconstruction, resurfacing and maintenance of pavements

(c) Service Area or Beneficiary Program

The General Manager of Transportation Services shall have primary responsibility for this reserve fund.

(d) Initial Contribution

Nil

(e) Contribution Policy

The funding to be provided from a fee which is to be applied to all utility cuts on the basis of age of pavement, road classification and type of pavement, except where the pavement is scheduled for reconstruction within the five year capital program.

(f) Withdrawal Policy

Funds will be withdrawn either as part of the normal capital or operating budget process.

(g) Review Cycle

The need for this reserve fund will be reviewed every five years.

Appendix E

Utility Cut Management – Guidelines and Criteria

A. Temporary Repairs to Utility Cuts

Objectives:

Temporary repairs to utility cuts are undertaken to provide vehicles and others users immediate usage of the roadway and to prevent moisture from penetrating into the pavement structure. The temporary repair state also allows for the cut to go through one freeze-thaw cycle, ensuring that the sub-soil, within the cut, has had sufficient time to adequately settle before permanent utility cut restoration is undertaken. During this period, the applicant is expected to maintain the temporary reinstatement in good condition and free of hazards to ensure the safety of pedestrians, cyclists and motorists.

Rules:

1. All temporary repairs must be carried out consistent with the specifications for backfilling, compaction and placement of hot mix asphalt in accordance with the Construction Specifications TS 4.60 of the City of Toronto. **(Existing)**

2. Temporary utility cut repairs must be stamped or marked on-site with the designated letter initials assigned by City staff to the respective utility owner. These markings will be used to track ownership, maintenance and responsibility of the utility cut. **(New)**

3. All temporary cut repairs must be brought to grade with the existing adjacent pavement surface and must ensure good compaction of the subsurface and smoothness of the surface. The edges of the cuts are to be flush with existing pavement to minimize water from penetrating the pavement sub-structure which may compromise the pavement stability during freeze-thaw cycles. **(Existing)**

4. Utility companies that carry out installations, replacement or repair of underground equipment, services or structures are required to monitor the condition of the temporary cut reinstatement to ensure that the reinstatement is free of deficiencies that could pose a safety hazard to the public. **(Existing – greater enforcement by Transportation Services)**

5. If the temporary restoration is not undertaken to the satisfaction of the City and thereby resulting in an emergency response by City forces to rectify the problem, City forces will complete the necessary work to totally restore the pavement structure, which may include complete excavation of the cut, and charge back all associated expenses (including mobilization costs) to the respective utilities. **(New)**

6. The Transportation Services Division will develop and implement a utility cut tracking system to identify and locate all utility cuts in the field, using Global Positioning System (GPS) technology within the next three years. **(New)**

B. Permanent Repairs to Utility Cuts

Objectives:

Permanent repairs are intended to restore the integrity of the pavement structure (i.e., its serviceability and carrying capacity) and restore the pavement as close as possible to its previous condition through adherence to the City's standards and specifications. Permanent reinstatement of the utility cut will be undertaken by the City of Toronto Transportation Services Division and all associated costs will be charged back to the respective utilities.

Rules:

1. All permanent repairs carried out on flexible and composite pavements must be consistent with the City of Toronto, Standard Construction Specifications for utility restoration, TS 4.60. **(Existing)**

2. Wherever a utility cut is parallel to a wheel path (i.e., longitudinal trench cuts), the permanent restoration of the cut shall be extended to include the wheel path. **(Existing)**

3. If a utility cut is located within 1.0 metre of a curb or construction joint, the permanent restoration will include the removal of the adjacent road base to the edge of the curb, construction joint or major crack. In all cases, the permanent repairs shall match the cross-sectional design of the adjacent pavement. **(Existing)**

4. Keyhole core cuts will be treated as cuts to the pavement. However, should the keyhole cores be densely located in one area (i.e., less than 2.0 metres apart), they will be treated as a trench cut. The rules for trench cuts (i.e., cuts in a longitudinal direction) established above will apply. **(New)**

5. The nature and extent of the reinstatement of the cuts will be at the discretion of the General Manager of Transportation Services upon field assessment of the section of roadway prior to the permanent reinstatement. **(Existing)**

C. Milling and Paving Related to Utility Cuts

Objectives:

Pavements with extensive trenching or numerous cuts may require milling and paving to address one or more of the following issues: to restore the quality of the driving surface; to eliminate visual impact of significant road cutting; and/or to better preserve

the service-life of a pavement that has experienced excessive cutting.

Rules:

1. For longitudinal trenches, whether in the wheel path or otherwise, the affected lane will be milled and paved for the length of the trench plus an additional 5 metres at either end of the trench. If however, the total length of all trenches within a street block is: equal to or greater than **75%** of the block's length (***for block lengths exceeding 250 metres***) or equal to or greater than **60%**(***for block lengths less than or equal to 250 metres***), then the total length of the block will be milled and paved (i.e., between block intersections). **(New)**

   Milling of the surface course, in any of the aforementioned cases, will be a minimum of 3.0 metre width in order to accommodate the placement of the asphalt surface course with a mechanical spreader.

2. If the longitudinal trench affects two lanes, then both lanes will be milled and paved for lengths defined in Rule C.1, above. **(New)**

3. Where a series of transverse cuts, pits or shafts occur in close proximity along a roadway (i.e., within 12 metres of each other or less) with a flexible pavement structure, the permanent restoration will include milling of the asphalt surface to a depth of 40 mm for the full width of the lane (or to a minimum width of 3.0 metres) to accommodate the placement of hot-mix asphalt using a mechanical spreader. **(New)**

4. Where a series of transverse cuts, pits or shafts occur in close proximity along a roadway (i.e., within 12 metres of each other or less) with a composite pavement structure, the concrete road base shall be restored as per section B and the asphalt surface shall be milled to a depth of 40 mm for the full width of the lane or lanes, as the case may be, (or to a minimum width of 3.0 metres) to accommodate the placement of hot-mix asphalt using a mechanical spreader. **(New)**

5. Any utility cuts that were introduced in a road section within a five year period following the completion of roadway reconstruction and within a three year period following roadway resurfacing (i.e., roads identified on moratorium list), the City, acting reasonably, may undertake, at the applicant's expense, more extensive site restoration than would normally be expected under the above rules. This may entail resurfacing the total width of the road, or reconstruction. This more extensive restoration is required to mitigate the concerns of public inconvenience and the premature degradation and aesthetics of newly improved streets. **(New)**

Appendix F

Utility Cut Management - Current and Proposed Processes

Phase	Current Process	Proposed Process	Timeframe
Management Guidelines, Principles and Criteria	• Rehabilitation is based only on the structural integrity of the pavement structure.	• Rehabilitation based on the structural integrity, comfort of ride, visual impact, trip hazards.	2-3 months
	• Expectations with respect to communications and standards not clearly documented.	• Required communications and standards to be clearly identified in the "Municipal Consent Requirements (MCR)" document and all specifications.	2-3 months
Permitting Process	• Applicant required to apply for permit for any planned work.	• No change to process, but Pavement Degradation Fee included in the application fee.	4-6 months
	• Utility companies permitted to undertake emergency work without permit, notify City of this work and apply for permit within 24 hours.	• Utility companies must notify City staff immediately of emergency by email and then follow up with permit application within 24 hours, including payment of the Pavement Degradation Fee for this emergency work.	4-6 months
	• Utility cut permit applications processed on a District-by-District basis.	• Internal review to centralize utility cut permit application process to improve efficiencies and achieve consistency.	Underway
Field Work	• Utility companies not required to identify their work.	• Utility companies will be required to: o Use magnetic identification signs on all their vehicles; o Provide public notices to affected homeowners prior to undertaking work; o Use on-site construction signs; o Identify all their temporary cut repairs with a stencil or imprint.	 2-3 months 2-3 months 4-6 months 4-6 months
	• Transportation staff identify problem cut repairs and try to track down responsible utility company.	• The following is proposed to improve the tracking and enforcement of utility cut repairs: o Increase City resources for the patrol function; o Enhance staff training on inspection procedures; o Train utility company staff on their inspection of utility cuts; o Develop and implement a utility cut GPS tracking system; o Introduce on-line status reporting on utility cut repairs.	 12 months 4-6 months 8-12 months 12-36 months 12-36 months

Utility Cut Management - Current and Proposed Processes
(Continued)

Phase	Current Process	Proposed Process	Timeframe
Temporary Utility Cut Repairs	• City of Toronto "Construction Specification for Utility Cut and Restoration" – currently in DRAFT	• Finalize specifications regarding materials and construction standards and advise construction industry of these requirements	1 month
	• Utility company required to monitor temporary repair for up to 18 months (currently included as part of MCR document)	• Increased inspection and enforcement of this provision.	1 month
	• City staff inspect cuts and respond to complaints and notify utility companies of their need to undertake any remedial work within 24 hours.	• No change but if remedial work not done in 24 hours, City staff to undertake necessary work and charge back all associated expenses including mobilization costs.	12 months
	• Temporary repairs required for all utility cuts.	• Pilot project underway to determine whether the need for temporary repair can be waived under certain circumstances.	Underway
Permanent Utility Cut Repairs	• City of Toronto "Construction Specification for Utility Cut and Restoration" – currently in DRAFT	• Finalize specifications regarding materials and construction standards and advise construction industry of these requirements	1 month
	• Size of repair includes only areas of pavement affected by utility cut in order to restore structural integrity and may include limited milling and paving.	• Criteria developed to trigger the requirement for milling and paving entire lane or road to restore structural integrity and also to maintain riding quality that otherwise would be affected by extensive utility cuts.	4-6 months
	• All expenses billed to Utility Companies, including 19% for Engineering & Supervision and 7% for Administration	• In addition to introduction of PDF, Engineering & Supervision increased from 19% to 22.5% plus an additional fee for 'full stream' applications.	4-6 months
	• Patching by City forces on an as-required basis.	• Periodic resealing of utility cut edge when required – funded by PDFs. • Mill and pave roads when needed as a result of the accumulation of utility cuts (i.e., not triggered by the cuts from a single utility company) – funded by PDFs.	12 months 12 months