

Pavement Cut Restoration and Degradation Fee

RECOMMENDATION:

That Committee of Council direct staff to incorporate pavement rehabilitation standards in updates to the Servicing Bylaw along with a proposed amendment to the Fees and Charges Bylaw for collection of a pavement degradation fee.

PREVIOUS COUNCIL/COMMITTEE ACTION

Consideration of a pavement cut policy was included in the 2017-2018 Council approved work plan for Infrastructure Planning and was carried forward to 2019 due to staffing vacancies.

REPORT SUMMARY

This report provides information to support new pavement restoration standards and implementation of a degradation fee for pavement cuts, both of which are commonly used throughout the region. Pavement rehabilitation standards ensure high quality and consistent repairs while degradation fees assist in offsetting road rehabilitation costs for reduced pavement life. This approach encourages the scheduling of utility cuts prior to paving, or the use of trenchless technologies, to avoid incurring the additional costs associated with standards and fees.

BACKGROUND

Pavement life typically ranges between 15 and 35 years depending on traffic volume, vehicle loading, maintenance performed and pavement structure. The City, builders, developers, and private utility companies (e.g. BC Hydro, Fortis Gas, Telus) all cut and repair pavement in order to install underground services. Utility cuts reduce pavement life because they increase the risk of water infiltrating into the joint, which removes fines in the gravel base, causing loss of pavement strength and failure (e.g. potholes). Ride quality and appearance is also degraded with a patchwork of repairs completed on a road over a period of time.

Pavement repair standards and degradation fees are commonly used throughout the region to manage utility cuts. A pavement repair standard sets minimum standards for temporary and permanent pavement repairs which are applicable to anyone making a utility cut. A pavement degradation fee compensates for loss of performance with funds typically directed towards a road rehabilitation program.

Port Coquitlam has 241 kilometers of paved road infrastructure valued at over \$235 million. Since 2017, the City has invested \$23 million to rehabilitate 22 kilometers of roadway with another \$3.4 million budgeted in 2021. While the annual pavement rehabilitation program is designed to improve and maintain the condition of the road network, the pavement must also be protected

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from utility cuts which are one of the major causes of premature pavement failure. In an effort to protect its considerable investments, Council supported consideration of a pavement cut policy in the Infrastructure Planning work plan and asked staff to explore the implementation of a pavement cut moratorium.

DISCUSSION

Pavement cuts occur when utility pipes and conduits are installed or repaired by trench excavation in existing roads. Typically, utility upgrades are completed in advance of road upgrading. In an effort to minimize both pavement cuts and degradation fees, the City offers pre-servicing with capital road construction projects where property owners are given the option to renew their services at reduced rates. However, some pavement cuts are inevitable; there are times when utility connections are subsequently required and the result can leave sections of the road with a patchwork of repairs.

To avoid utility cuts in new pavement, coordination between the City and external parties is also required to exchange information on project planning. There are a number of existing and planned City initiatives to facilitate such. The City plans rehabilitation projects by neighbourhood which makes for predictable and stable planning while minimizing the location of conflict points with third party utilities. City staff also makes information on construction and road projects available to third parties at the earliest time possible during planning and design. The City's ongoing and planned projects are mapped on its PoCoMAP system which is available to staff and the public to facilitate coordination. The City's Capital Projects web page also provides information on the design and construction status of approved projects. Additionally, staff will be reaching out to external parties in 2020 to schedule annual meetings for review of upcoming projects on both sides.

Pavement Cut Moratoriums

Given the significant investment the City is making in its road infrastructure, the initial reaction to protect that investment is to prohibit pavement cuts (a moratorium) in new roads for a period of time.

The City of Coquitlam Council did just that, and endorsed a policy in 1999 prohibiting utility cuts on pavement less than five years old. In 2004, Council modified the policy to introduce a pavement degradation fee and delegate authority to waive the moratorium to the General Manager of Engineering & Public Works. In 2011, Coquitlam Council rescinded its moratorium on cutting pavements that are less than five years old.

The pavement cut policy was initially proposed to protect new pavements placed in the City's road rehabilitation program. In practice, variances under the policy were routinely granted by both Council and staff for justifiable reasons and it was generally recognized that some pavement cuts are inevitable. Occasionally, utility companies, property owners or developers encounter situations

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where there is no practical alternative to cutting asphalt. As a result, the moratorium acted only to delay the process of obtaining a pavement cut approval. The change in policy was supported to save the City, residents, developers and utility companies the cost and time associated with processing pavement cut requests. The loss in pavement life resulting from the cuts is recovered through the pavement degradation fee.

Due to the expected administrative burden, limited benefit, and impracticality of a pavement cut moratorium, this approach is not recommended by staff. It is anticipated that the proposed pavement repair standards and degradation fee will be more effective tools in minimizing pavement cuts and degradation.

Pavement Repairs

Pavement rehabilitation standards apply to anyone making a road cut to ensure high quality and consistent repairs minimizing road degradation. When used in conjunction with degradation fees, they may also encourage others to schedule utility cuts prior to paving or consider the use of trenchless technologies to avoid incurring additional costs.

Pavement failures can occur due to inadequate compaction of the trench backfill, insufficient paving extents or cracking at the pavement cut joints. The establishment of enhanced pavement repair standards can address these issues and minimize pavement failures. The success of any pavement cut repair is dependent on adequate notification and inspection to ensure that proper construction techniques are followed. As such, modifying the existing notification process and incorporating a basic level of inspection by City staff is proposed to support compliance.

Proposed Pavement Repair Standards

Regional best practice has been to follow the Master Municipal Construction Document (MMCD) Pavement Restoration standard which recommends restoring municipal roads disturbed by construction by paving the trench width plus 200mm from the broken edge of the trench. However, it does not include details such as the extent of paving when the edges of the trench repair are located in a wheel path (which reduces the pavement strength in a critical location under stress) or the amount of asphalt orphaned on the edge of the road (e.g. small strips of pavement left adjacent to the curb). Metro Vancouver recently updated their restoration standards to address these issues, and staff is recommending that Port Coquitlam implement similar measures.

The proposed updates to the Servicing Bylaw include the provision of additional details on paving standards and clear identification of the amount of restoration to be completed with utility projects.

For a typical trench excavation, the proposed requirements for pavement repair include:

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- backfill trench with specified granular materials to standard compaction requirements;
- initial pavement repair with approved asphaltic cement to allow traffic back onto the road, after completion of construction;
- final pavement repair: remove all temporary asphalt to the desired pavement thickness depth, base pave the trench width and top lift 35 mm of asphalt, and pave a minimum of beyond the limits of the initial repair, to the extents specified below:
 - Repave one full lane width if the trench edges are fully contained within one lane
 - Repave two full lane widths if trench edges cross partially over two lanes
 - Repave perpendicular cuts with a consistent width of a minimum of 1m on each side of the temporary repair or the furthest crack, whichever is greater
 - Combine cuts closer than 4m apart into one repair
 - Square off all cuts with clean edges

The requirements will minimize structural damage and degradation to pavement while supporting better quality and longer lasting permanent repairs. The aesthetics of pavement repair patches remains an issue, but can be mitigated by expanding the pavement restoration area to include the full width of driving lanes and at least 3 meters along the longitudinal axis of the road.

It is proposed that these requirements be included in the updated Servicing Bylaw which is planned to come forward to Committee of Council in 2020. The 1987 Subdivision Servicing Bylaw has two distinct pieces - the first section identifies servicing requirements and specifies the subdivision procedure while the second part sets the design criteria and standard specifications for construction of municipal infrastructure. An update to the second half was undertaken in 2019 by staff and is on track for completion in 2020. A review of the draft material by an external professional engineering firm is scheduled for 2020 along with updates to the front end of the document that determines what offsite work is required by developers.

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At best, improved pavement restoration standards will restore the road to good condition; however, they will not prevent long term degradation of the road. Trench excavation disturbs the adjacent ground which weakens the existing pavement support. Literature research by the American Public Works Association (Pavement Degradation – How Other Cities are Dealing with It, September 2002) has found that utility cuts can reduce the life of pavement by 20 to 56 percent with poorer pavement cut restoration techniques resulting in even shorter pavement life.

As utility pavement cuts reduce the life span of City roads, it is recommended that a degradation fee be charged (to developers, utility companies, third parties) to compensate for the reduced pavement life, in addition to completing pavement restoration work. The degradation fees

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collected will be directed towards the road rehabilitation program. Degradation fees are currently charged by several Metro Vancouver municipalities including Vancouver, Coquitlam, Surrey, Abbotsford and Langley.

A fee of \$20 per square meter is proposed for pavement less than 5 years old, while a fee of \$10 per square meter is proposed for pavements between 5 and 15 years old. For example, a single family home development which introduces a typical utility service cut would pay a degradation fee charge of \$280 if the pavement is less than 5 years old or a \$140 charge if the pavement is between 5 and 15 years old. Such degradation fees are consistent with other municipalities in the region. The reduced value of older pavements does not warrant a degradation fee. It is recommended that no degradation fee be charged when the utility repaves a minimum of half the road over 100m in length. The collection of degradation fees can be incorporated into existing processes through the Fees and Charges Bylaw.

NEXT STEPS

Staff will bring forward the updated Servicing Bylaw to Council along with changes to the Fees and Charges Bylaw for collection of a pavement degradation fee.

FINANCIAL IMPLICATIONS

Pavement cut degradation fee revenue will be tracked and transferred to the General Capital Reserve to help fund the Neighbourhood Rehabilitation program.

OPTIONS

#	Description
1 	That Committee of Council direct staff to incorporate pavement rehabilitation standards in updates to the Servicing Bylaw along with a proposed amendment to the Fees and Charges Bylaw for collection of a pavement degradation fee.
2	That Council provide alternative direction to staff.

Lead author(s): Melony Burton