The agenda for the Special Meeting of Council to be held in the Council Chambers of the Municipal Hall, 8645 Stave Lake Street, Mission, British Columbia on Monday, March 9, 2020 commencing at 1:00 p.m.

1. CALL TO ORDER

2. ADOPTION OF AGENDA

3. NEW BUSINESS

(a) **Options to Replace Tree Management Bylaw 3872-2006**

RECOMMENDATIONS: Council consider and resolve:

1. That staff be directed to proceed with preparation of a new tree management bylaw based on one of the three options presented in the Manager of Environmental Services’ report dated March 9, 2020; and

2. That staff be directed to report back to Council with a prepared new tree management bylaw for first reading, and with a stakeholder and public consultation plan.

(b) **Water Meter Program Options**

RECOMMENDATIONS: Council consider and resolve:

1. That funding in the amount of $50,000 from the Water Utility Accumulated Surplus for the development of a business case analysis for three water metering scenarios (universal, voluntary, and status quo) be approved; and

2. That Council authorize staff to conduct an assessment of the phasing-out of the current water and sewer declining-block rate for the ‘Commercial/Industrial/Institutional and Multi-Unit Residential (Metered)’ sector.

4. ADJOURNMENT
DATE: March 9, 2020
TO: Chief Administrative Officer
FROM: Barry Azevedo, Manager of Environmental Services
SUBJECT: Options to Replace Tree Management Bylaw 3872-2006
ATTACHMENTS:
   Attachment A – Table of Other Local Governments’ Tree Bylaws
   Attachment B – Summary of Tree Management Package Options
   Attachment C - Comparison of Options and Tree Bylaw Requirements from Select Municipalities

RECOMMENDATIONS: Council consider and resolve:
1. That staff be directed to proceed with preparation of a new tree management bylaw based on one of the three options presented in the Manager of Environmental Services’ report dated March 9, 2020; and
2. That staff be directed to report back to Council with a prepared new tree management bylaw for first reading, and with a stakeholder and public consultation plan.

EXECUTIVE SUMMARY:
The District of Mission has seen several large private land parcels in recent years clear-cut and stripped of trees prior to submission of a development application. It has also long been understood that tree retention helps with stormwater management, helps air quality, provides ecological habitat, provides slope stabilization, and provides a more attractive and livable community. More recently, the value of tree retention and tree planting has been identified as a significant consideration in addressing climate change.

To address the issues above, most municipalities in the Lower Mainland have a comprehensive tree management bylaw. The District currently does not have a comprehensive tree management bylaw that provides an enforceable and consistent framework for tree management in all areas of Mission. The District’s current Tree Management Bylaw 3872-2006 is only applicable to the Silverdale Urban Reserve (which is now designated Silverdale Comprehensive Planning Area in the Official Community Plan) and contains no ticketable offences. The District’s Tree Retention/Replanting Policy LAN.32 only applies to rezoning and subdivision applications, and as a policy, it is not enforceable and carries no monetary fines.

This report presents the issues associated with tree cutting, bylaw terms or other actions to address those issues, and then packages up those actions into three options for Council’s consideration for improved tree management in the District.

PURPOSE:
The purpose of this report is to present options for replacing the District’s Tree Management Bylaw 3872-2006 with a more effective tree management program and bylaw.
BACKGROUND:
As a result of BC’s booming real estate market, development activity has significantly increased in Mission, and a number of large projects have involved tree clearing before development applications were submitted to the District. This has caused significant concern for many Mission residents, who value the natural features that make Mission a desirable place to live. The uncontrolled clearing of trees increases climate change, destroys valuable habitat, reduces biodiversity, increases erosion of slopes, increases sedimentation of watercourses thereby impacting fish habitat, increases stormwater management issues, invites infestation by invasive plant species, creates windfall hazards, negatively affects property values, decreases livability of the community, reduces air quality, and increases urban heat island effects.

From the development perspective, tree removal increases the number of developable lots, provides flexibility in subdivision layout, and reduces liabilities. Since the number of replacement trees is based on the number of trees at the time of development application, cutting the trees prior to subdivision application reduces the number of replacement trees and thereby saves costs for the developer and may increase the number of developable lots.

The District currently has one bylaw, the Tree Management Bylaw 3872-2006 (Tree Bylaw) and one policy, the Tree Retention/Replanting Policy LAN.32 (LAN.32), both of which have shortcomings in the ability to adequately protect trees in the District of Mission.

Shortcomings of Tree Management Bylaw 3872-2006
The primary shortcomings of the current Tree Bylaw are:

Limited area of application - The bylaw only applies to a limited area of the District, southwest Mission (Silverdale). This has resulted in lots being clear-cut in other areas of Mission prior to submission of a development application.

Excessive allowances for significant tree cutting without permit - The current Tree Bylaw allows for 5 trees per acre (0.4 ha), up to a maximum of 50 trees, to be cut per calendar year without a permit. This makes monitoring and enforcement very difficult as the trees are often cut and removed by the time the activity is reported to the District.

Lack of ticketable offences and enforcement barriers - The Bylaw Notice Enforcement Bylaw 5700-2018 does not include any reference to the Tree Bylaw. Although the Tree Bylaw does have a minimum $1,000 fine and maximum $10,000 fine for each occurrence, enforcement requires going to court, which is costly and time-consuming, and requires a higher level of proof. Therefore, the bylaw is effectively unenforceable, and accordingly, there is no record of it ever having been enforced.

No permit fees – There is no cost recovery for permits which would also help pay for administration of the bylaw.

Shortcomings of the Tree Retention/Replanting Policy LAN.32
LAN.32 applies to rezoning and subdivision applications only. It designates significant trees as trees “having a caliper of 20 centimetres or greater, as measured at a height of 1.5 metres above ground level”, and requires certain trees removed as part of the development process to be replaced. It also requires two new trees to be planted per lot created by subdivision and includes schedules for acceptable replacement species and tree planting and protection details. LAN.32 also includes a tree protection covenant template, as well as a requirement for a security deposit of $250 per replacement tree, which is to be returned, once staff have inspected and approved the Tree Retention and Replanting Plan.

LAN.32 is contradictory, in that it purports to only apply to tree replacement and re-planting in connection with rezoning and subdivision applications; however, it does include a penalty clause for tree removal prior to submission of a development application, which requires replanting of significant trees at a 3:1 ratio. However, besides the fact that counting stumps may not be an option after the fact (similar to the bylaw), as a policy, it is also not enforceable and carries no monetary fines.
Official Community Plan (2018)
The updated Official Community Plan (OCP) adopted in January 2018, included the following terms related to tree protection and canopy:

- Prepare an Urban Forest Management Strategy that includes measurement of the urban tree canopy, recommendations for protecting existing trees and planting new trees on development sites, and monitoring the canopy over time.
- Establish tree canopy targets for the urban portion of the community and for new developments.
- Prepare a tree protection policy or bylaw.
- Conserve trees in stands (groups of trees along with their associated understory) to preserve long-term health and stability of each tree within the stand.
- Conserve trees by protecting their root systems from disturbance.
- Encourage all residential development and redevelopment projects to minimize disturbance of existing trees.
- Establish policies and guidelines, potentially including incentives, for protecting heritage trees and other heritage resources.
- Design the site layout and building locations to retain and protect important trees.
- Emphasis throughout OCP for developments to include minimum street trees and landscaping trees of particular density and designation.

Cedar Valley Local Area Plan (2019)
The Cedar Valley Local Area Plan (CVLAP) was adopted by Council in November 2018. The CVLAP includes the following terms related to tree protection and canopy:

- Policies and strategies are recommended in this plan for protecting trees on private properties and within protected natural areas.
- Developers must prepare a bio-inventory of the entire proposed development site before land-clearing or soil movement takes place, and include an assessment of trees on development sites.
- Site plans shall be designed with the principal of protecting environmental assets, including trees in Cedar Valley’s urban forest.
- Retaining trees on development sites also improves air quality, stabilizes soils and slopes, absorbs rainwater and reduces erosion, thus reducing the need for engineering and constructing systems to achieve the same effects.
- Trees also contribute to more liveable, natural streetscapes: in South Surrey a significant number of mature trees were protected in the planning and construction stages in addition to incorporating boulevard trees, producing a community within a natural setting.
- While there is general recognition that streams and riparian areas must be protected during development, other than the Streamside Protection and Enhancement Area (SPEA) required under Riparian Area Regulation (RAR), there is currently no general mechanism in Mission’s bylaws to protect existing stands of trees to preserve and maximize their natural and green infrastructure function.
- Trees and urban forests are significant elements of green infrastructure, which is defined by the International Water Association as “a strategically planned and managed network of natural landscape such as forests and wetlands, working landscapes and other open spaces that conserves or enhances ecosystem values and functions and provides associated benefits to human populations. (Benedict and McMahon 2006).”
- Root systems and tree foliage stabilize soil on slopes, reducing potential for slope failure while contributing to storm water management. Trees reduce urban heat island effects, improve air quality, and reduce energy consumption. Trees cool urban areas indirectly through evapotranspiration and air movement under shaded tree crowns. Shade provided by trees, cools homes and buildings directly during summer and can shield buildings from winter storms, providing energy savings. The role trees play in improving a community’s air quality reduces health care costs and enhances residents’ quality of life.

- There is considerable economic, environmental, and social value in retaining and enhancing Cedar Valley’s urban forest canopy. Protecting this valuable natural resource is a key consideration in developing a sustainable and resilient community in a cost-effective manner.

- Preservation of the urban forest canopy is achievable for developments of all types and densities, if conducted with appropriate zoning, planning policies, tree protection regulations, design guidelines, and public information.

- The following Urban Forest policy shall apply to Cedar Valley: A tree canopy target of 40% should be considered for the long-term protection and renewal of the urban forest canopy in this community.

- Retain trees and incorporate them within landscaping and servicing plans based upon the ‘Low Impact Development (LID)” model.

Environmental Charter (2008)

The District of Mission Environmental Charter was completed in 2008 and has guided the District of Mission’s decisions in ensuring its decisions are environmentally-sensitive and sustainable. The Environmental Charter was developed with widespread community input. The Charter will be reviewed and updated in a similar community process in 2020. The Environmental Charter includes the following short-term action:

- Consider developing a revised Tree Retention Bylaw district wide that protects significant trees, retains a minimum number of trees and requires a carbon sequestration assessment with a replacement plan.

DISCUSSION AND ANALYSIS:

As noted above, the 2018 OCP, 2019 CVLAP and 2008 Environmental Charter all state the need for a tree protection program with emphasis on a bylaw. To address Council’s direction to provide tree management bylaw options, a review of tree bylaws in other municipalities was conducted, including reviewing a summary of 17 local governments’ tree management bylaws prepared by the Real Estate Board of Greater Vancouver (REBGV) in May of 2017 (Attachment A). District staff also reviewed bylaws and policies from additional municipalities, i.e. Abbotsford, Maple Ridge, Chilliwack, Surrey, New Westminster and the Township of Langley. Most other local governments similar to or larger in size than Mission, have more comprehensive and more enforceable tree management bylaws. As demonstrated by the REBGV summary, tree bylaws have similar concepts and requirements. Relevant key concepts are listed below and presented in terms of how they might apply to the District of Mission.

Conceptual Bylaw Components

- Definition of tree categories
  - Protected Trees
    - Significant trees: >20 cm in diameter at breast height (DBH) (or at stump height), i.e., 1.5 m or if already cut below 1.5 m, then diameter at stump height.
    - Heritage trees: >60 cm DBH (or at stump height) within the Urban Development Growth Boundary, or >70 cm DBH (or at stump height) outside of the Urban Development
Growth Boundary.

- Specimen trees: means a tree of any size which is deemed by Council, the Director of Parks, Recreation and Culture, Director of Engineering and Public Works, or the Director of Development Services, to be of exceptional value because of its species, condition, form, age, size, or cultural value.

- Replacement trees: trees required to be planted to replace trees topped, limbed, removed or damaged without a permit, and those that have been required to be planted as replacement trees under a tree cutting permit or development permit.

- Wildlife trees: trees that have evidence of nesting by a bird, as defined in the provincial *Wildlife Act*, R.S.B.C. 1996, c. 488.

- Hazard Trees
  - Trees deemed hazardous by a certified arborist with dangerous tree assessor certification.
  - Trees of the black cottonwood variety located within 30 metres of a residence, and not on a steep slope, and not within an environmentally sensitive area.

- Permit requirements
  - Permit requirement for crown reduction, limbing or removal of Protected Trees.
  - Permit applications to be accompanied by a site plan, reason for tree removal, and where applicable, necessary reports prepared by qualified professionals which may include: arborist report, geotechnical report, and fire interface report. Where trees are being proposed for removal, the arborist report may be required to be include a wind firm boundary assessment to ensure tree removal does not impact the viability of the remaining trees.
  - Notification within 24 hours is required for emergency removal of Hazard Trees with application of provincial Best Management Practices during crown reduction, limbing or removal, and tree replacement
  - Cutting permit application for Wildlife Tree must be supported by a report from registered professional biologist which confirms removal is in compliance with the BC Wildlife Act.

- Permit fees and additional cutting limitations
  - The primary source of the tree management program including administration of the bylaw, is proposed to be from permit fees with additional revenue from penalties.
  - For properties less than 0.25 acres, the permit fee is proposed to be $0 for cutting of one Protected Tree over each 12 month period, and $50 for each additional tree over each 12 month period.
  - For properties greater than 0.25 acres, the permit fee is proposed to be $0 for cutting one Protected Tree per 0.25 acre over each 12 month period and $50 for each additional tree over each 12 month period.

- Cutting limitations
  - For properties less than 0.25 acres, unless the tree is a Hazard Tree, a tree cutting permit will only be issued as long as 2 Significant Trees or more remain on the property.
  - For properties greater than 0.25 acres, unless the tree is a Hazard Tree, a tree cutting permit will only be issued as long as 4 Significant Trees for each 0.25 acres remain on average over the property.
• Cutting permit for a Wildlife Tree, Heritage Tree or Specimen Tree, will only be issued if supported by a report from a certified arborist with dangerous tree assessor certification that deems the tree is a Hazard Tree.

• Permit exemptions for tree removal
  o Agricultural Land Reserve.
  o Land outside the Agricultural Land Reserve that is permitted for agricultural use where the owner enters into a restrictive covenant confirming no rezoning application for 10 years.
  o Utilities as per the Hydro and Power Authority Act and the Pipeline Act.
  o Trees on property owned by the District or in Mission Municipal Forest.
  o Trees on property owned by the Province or by the Government of Canada or under the jurisdiction of the Government Canada, including First Nations reserve land.
  o Trees within 2 metres of an existing building foundation.
  o Under a District-approved tree management plan, which forms part of a development application, where trees to be retained have been protected by a covenant registered on title.
  o Under a valid building permit issued by the District, where tree removal is necessary to accommodate the building(s), a driveway, septic system, water supply and utility lines.

• Prohibitions
  o No tree removal within Streamside Protection and Enhancement Areas (SPEAs), as identified by a Qualified Environmental Professional, or Environmentally Sensitive Areas (ESAs) or Protected Natural Areas (PNAs), as designated in the OCP, or restoration area, unless the tree is a Hazard Tree and crown reduction, limbing or removal complies with provincial legislation and best management practices. Trees may also be protected by provincial legislation, such as the Water Sustainability Act, Riparian Areas Protection Act, or the Wildlife Act.
  o No tree removal on lands with a slope greater than 1:3 rise:run (33.3% grade), unless supported by a geotechnical report prepared by a qualified professional.
  o No tree removal on District-owned lands unless authorized by a representative of the District.

• Replacement Trees and Replanting Requirements
  o Replacement ratio (3:1), acceptable tree species, proper planting and tree protection specifications, covenant requirements, security deposits, as currently anchored in LAN.32
  o Tree density for development permits of minimum 16 trees/acre not including environmentally sensitive areas, greenways, or buffers. This is estimated to equate to a 22% tree canopy once trees have matured.

• Securities
  o Trees on development and construction sites to be protected via physical barriers at the perimeter of their root zones.
  o Staff and/or arborist site inspections to confirm compliance with Tree Retention and Replanting Plan and success of replanting efforts before security refund.

• Enforcement, Fines and Penalties
  o Significant, Specimen, Replacement, and Wildlife Trees: $500 to $1,000 per tree removed
or damaged in contravention of this bylaw. Fines and penalties are disincentives to clearing ahead of permits being issued. For example, a one-acre forested property with 10 Significant Trees, that is cut without permits may have total fines ranging from $5,000 to $10,000. The amount of the fine or penalty per tree would be determined in discussion with the Manager of Inspection Services.

- Heritage Trees: $500 to $10,000 per tree removed or damaged in contravention of this bylaw.

**Proposed Tree Management Options**

Based on the review of other municipalities’ bylaws and key bylaw concepts, staff have prepared three options for consideration by Council. A summary of these options is provided in Attachment B. The summary presents the key problems with uncontrolled tree cutting; the mitigation actions that are used by municipal tree bylaws to address the problem; and followed by three options which package the mitigation actions in varying degrees of addressing the key problems. Attachment C provides a more detailed comparison between the options and select bylaws from other municipalities.

**Option 1 – Base Package – Protect trees on steep slopes, wildlife trees, and on municipal land**

This package is the minimum that a tree management program could consist of and have any value in tree protection. It would require tree cutting permits on steep slopes and for wildlife trees, and would include an urban and rural tree canopy assessment to determine a tree canopy baseline and recommendations for further tree management actions in Mission. Unlike Options 2 and 3, Option 1 does not immediately address the prime driver of a District-wide tree bylaw which is preventing pre-application clearing of large development properties. The estimated annual cost for limited implementation based on 0.25 Full-time Equivalent (FTE) staffing needs is $32,500 plus $2,500 for supporting staff and contractors, and an initial cost of $75,000 for a District-wide tree canopy assessment (excluding Mission Municipal Forest) which would also provide recommendations for future program improvement. The annual revenue from permit fees and fines are expected to be limited for this option.

**Option 2 – Intermediate Package - Protect trees on large properties, steep slopes, wildlife trees, heritage trees and on municipal land**

As shown on Attachment B, Option 2 includes requiring tree cutting permits for Protected Trees on larger lots (greater than 0.25 acres). In addition, Option 2 also includes protection of trees on steep slopes, wildlife trees, heritage trees, and on municipal land. Requiring a permit for tree cutting on these larger properties will reduce the incentive to clear-cut prior to a development application being submitted. In some cases, there will remain a risk that a tree cutting permit will be issued that will result in trees being cleared and then a development application is received which may impact the remaining trees. Staff will try to manage this and will consider if future amendments to the bylaw are required.

Unlike Option 3, Option 2 does not apply to urban-sized lots (less than 0.25 acres). Trees on existing, urban-sized private lots would receive no protection beyond those on steep slopes and those which are considered wildlife trees or heritage trees. In addition, trees on municipal lands would also continue to be protected from unauthorized cutting where although no tree cutting permit would be required, authorization from a District representative would be required.

While the main driver for a new and improved tree management bylaw has been the uncontrolled clear cutting of trees from larger lots, even singular trees on smaller, residential lots can provide valuable habitat, such as stop-over shelter for migratory birds, and perform important ecosystem functions. Trees in existing residential areas help to reduce urban heat island effects, are part of the water balance, provide shade, shelter, and nutrients, can function as windbreaks and add aesthetic value to the entire neighbourhood. Tree removal from small lots can also affect and compromise trees on neighbouring properties. Option 2 also includes an urban tree canopy assessment to further assess the need and advantages of extending the tree management program to smaller urban lots.

Option 2 will require more staff resources than Option 1 and could be initially implemented with 0.4 FTE
($39,000), with an additional $10,000 per year for assistance from other staff and contractors, for an annual cost of $49,000. The cost of the one-time urban tree canopy assessment is estimated at $50,000. The urban tree canopy assessment would be assumed to be implemented within the first year or two of the program. The annual revenue from fees and penalties under Option 2 is uncertain but based on discussions with other municipalities, the revenue is projected to be approximately $7,500.

Option 3 – Comprehensive Package – includes both smaller lots and larger lots

As shown on Attachment B, Option 3 addresses all the identified key problems with uncontrolled tree cutting. The primary addition for Option 3 relative to Option 2, is inclusion of requiring tree cutting permits for trees on smaller lots (less than 0.25 acres). Mission’s OCP supports this approach, as it designates all of Mission as a “Natural Environment Development Permit Area” (DP Area E, Section 9.7), the intent of which is to “guide development to minimize negative effects on environmentally sensitive and significant areas, habitat, water quality, biodiversity, air quality, greenhouse gas emissions, watercourse maintenance and dredging costs, outdoor recreation opportunities, food production and many other tangible and intangible benefits of natural areas.” OCP Section 9.7 also contains guidelines speaking directly to tree preservation, however, since they are guidelines, they are not enforceable on their own.

It is expected that the full implementation of Option 3, including application review, inspections and enforcement, would require one new Environmental Services FTE to receive, process, administer and enforce. The estimated cost for the position is approximately $105,000 per year plus an estimated $25,000 per year for assistance from Parks, Recreation, and Culture Department certified arborists, Bylaw Enforcement staff, and certified arborist contractors. A more limited initial implementation of Option 3 is recommended based on focusing on applications with potential for greater impact. This is estimated to reduce the FTE commitment from 1 FTE ($105,000) down to 0.6 FTE ($65,500) and the additional staff and contractor costs from $25,000 down to $15,500, for a total annual cost of $81,000 per year. The annual revenue from fees and penalties under Option 3 is uncertain but based on discussions with other municipalities, the revenue is projected to be approximately $15,000. An urban tree canopy assessment may also be of benefit to further guide improvements in the tree management program but the need can be determined two or three years after implementing Option 3.

Online Permit Application and GIS Interface

An online permit application system and GIS interface, similar to the Township of Langley, will be implemented to reduce the administrative burden and cost associated with permit application processing and complaints. In addition, the elimination of difficult-to-track/enforce bylaw exemptions should help to limit investigation time by staff.

Impact and Review of Other Bylaws, Policies and Permits

Several other bylaws and other municipal policies have significant impacts on tree retention and removal. The Zoning Bylaw 5050-2009 can require buildings to be located within specific areas of the property, which in some cases necessitates removal of trees. In the case of the Development and Subdivision Control Bylaw 5650-2017, available wider road design options can allow for street trees, whereas narrower road design options do not. The District’s Lot Grading Policy and Fire Interface Development Permit may also affect where trees can be protected, retained or planted. A review of these bylaws and policies will be undertaken by staff with respect to how to further retain trees with consideration given to the direction already provided in the OCP and the CVLAP.

A recent Metro Vancouver tree canopy study found that due to single-family lots having larger house and pavement coverage than in the past, only street trees within the road right of way, and local government-owned natural areas, can provide any significant tree canopy coverage in many newer single-family and multi-family development neighbourhoods. An urban tree canopy assessment would help the District set an urban tree canopy target and is considered under each of the tree management options provided.
FINANCIAL IMPLICATIONS:

The table below summarizes the annual costs provided earlier for each option.

<table>
<thead>
<tr>
<th>Tree Management Package Options</th>
<th>Area of Application for Permit Requirement</th>
<th>Staffing Resource</th>
<th>Estimated Staffing Cost</th>
<th>Additional Staffing Costs</th>
<th>Total Initial Annual Cost</th>
<th>One Time Tree Canopy Study Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Base Package (Option 1)</td>
<td>Steep slopes, wildlife trees</td>
<td>0.25 FTE</td>
<td>$32,500</td>
<td>$2,500</td>
<td>$35,000</td>
<td>$75,000 (district-wide)</td>
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<tr>
<td>Intermediate Package (Option 2)</td>
<td>Option 1 plus large properties and heritage trees</td>
<td>0.4 FTE</td>
<td>$39,000</td>
<td>$10,000</td>
<td>$49,000</td>
<td>$50,000 (urban area)</td>
</tr>
<tr>
<td>Comprehensive Package (Option 3)</td>
<td>Option 2 plus small properties and specimen trees</td>
<td>0.6 FTE</td>
<td>$65,500</td>
<td>$15,500</td>
<td>$81,000</td>
<td>To be assessed after two years</td>
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</table>

The funding in the first year is proposed to be primarily from tree cutting permit fees and from the carbon tax rebate reserve account. As noted earlier, the revenue from permit fees and penalties is not certain but is not expected to be significant and therefore funding in the first year of the program is proposed to be primarily from the carbon tax reserve account. After the first year, the costs and revenue will be analyzed and discussed with the Finance Department regarding any appropriate changes that should be made to the funding model and a report to Council will be provided at that time.

COMMUNICATION:

The following steps and schedule are proposed for proceeding with public consultation and reporting back to Council.

<table>
<thead>
<tr>
<th>Key Implementation/Consultation Steps</th>
<th>Date</th>
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<tbody>
<tr>
<td>Council direction on tree management option</td>
<td>March 9, 2020</td>
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<tr>
<td>Finalization of draft tree bylaw based on option</td>
<td>March 23, 2020</td>
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<tr>
<td>First reading of bylaw</td>
<td>April 6, 2020</td>
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<td>Advertising public info sessions in local newspaper and social media</td>
<td>Mid-April, 2020</td>
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<tr>
<td>Meeting with Development Liaison Committee</td>
<td>April 16, 2020</td>
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<td>Public input meeting(s)</td>
<td>Early May, 2020</td>
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<tr>
<td>Presentation of staff report to Council with consultation results and second and third readings of bylaw</td>
<td>Early June, 2020</td>
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<tr>
<td>Adoption of bylaw</td>
<td>Mid-June, 2020</td>
</tr>
</tbody>
</table>

The consultation plan will be developed in further detail with the District civic engagement team once staff receive direction from Council on March 9, 2020.
SIGN-OFFS:

Barry Azevedo, Manager of Environmental Services

Reviewed by:
Tracy Kyle, Director of Engineering & Public Works

Comment from Chief Administrative Officer:
Reviewed.
Tree protection bylaws and policies for private property
(Updated: May 2017)

In the Real Estate Board of Greater Vancouver’s area, 17 local governments have a bylaw or policy addressing tree removal, retention, pruning and damage on private property. This matrix is an overview. Please refer to the specific bylaw or policy for more information. Note: property owners should always check if a Tree Protection Covenant is registered on their property title.

Note: Bowen Island, Gibsons, North Vancouver City, Pemberton, Pitt Meadows, Squamish-Lillooet Regional District and the Gulf Islands do not have a tree bylaw or policy for private land. However, if there are trees within stream corridors or near waterways, trees may be protected under the provincial Streamside Protection Regulation and the federal Fisheries Act. Trees on agricultural land in the Agricultural Land Reserve (ALR) may be exempt from municipal tree bylaws. Trees on municipal (city) property are typically under the Parks Department. Questions? Contact Harriet Permut, Manager, Government Relations at hpermut@rebgv.org

<table>
<thead>
<tr>
<th>Bylaw or policy</th>
<th>Anmore, Village of</th>
<th>Belcarra, Village of</th>
<th>Burnaby, City of</th>
<th>Coquitlam, City of</th>
<th>Delta, Corporation of</th>
<th>Lions Bay, Village of</th>
<th>Maple Ridge, City of</th>
<th>New Westminster, City of</th>
<th>North Vancouver, District of</th>
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<tr>
<td><strong>Tree defined</strong></td>
<td>10 cm (3.9 in)+ in diameter measuring 1.4 m (4.5 ft) above ground. Doesn’t include hedge, an alder or cottonwood.</td>
<td>5 m (16.4 ft)+ in height</td>
<td>20.3 cm (8 in)+ in diameter; conifer tree with diameter 30.5 cm (12 in)+; broad leaf tree diameter of 45.7 cm (18 in)+</td>
<td>20 cm+ in diameter, 1.4 m from base, or on a steep slope 5 m+ in height</td>
<td>Any woody plant, any species 20 cm (8&quot;)+ in diameter 1.4 metres above its base, or if &lt; 1.4 m has diameter of 30.5 cm (12&quot;) at base; any replacement tree</td>
<td>20 cm+ 1.4 m from base. Arbutus, dogwood and yew are 10 cm at 1.4 m above ground.</td>
<td>20 cm+ diameter at breast height (130 cm above the ground)</td>
<td>20 cm+ diameter or has combined diameter of its two largest trunks or stems 20 cm+</td>
<td>10 cm+ measured at 1.3 m above ground</td>
</tr>
<tr>
<td>Significant or protected trees defined</td>
<td>No</td>
<td>No</td>
<td>Covenanted tree</td>
<td>20 cm+ in diameter, 1.4m from the base, 5m on steep slope</td>
<td>Replacement trees regardless of size</td>
<td>Significant trees due to size, age, landmark, cultural, environmental or social, planted by village on boulevards and wildlife habitat</td>
<td>Trees 50 cm diameter+ at breast height in urban/suburban area; 70 cm diameter for trees in rural areas not including cottonwood or alder</td>
<td>Large, mature deciduous or coniferous tree with diameter 60 cm+</td>
<td>Any tree on sloping terrain; replacement trees, retained, heritage and wildlife trees; trees on wetlands or waterfront; Arbutus, Garry Oak, Oregon Ash, Pacific Yew, Western White Pine, Yellow Cedar</td>
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<td>Area covered by bylaw</td>
<td>Private property</td>
<td>Private property or development permit area</td>
<td>All lands under Burnaby's jurisdiction</td>
<td>Private property under Coquitlam's jurisdiction</td>
<td>All lands under Delta's jurisdiction</td>
<td>All lands under Lions Bay jurisdiction</td>
<td>All lands under Maple Ridge's jurisdiction</td>
<td>All lands under New Westminster's jurisdiction</td>
<td>All lands under District of North Vancouver jurisdiction</td>
</tr>
</tbody>
</table>
| Cutting permit required             | Yes. However in any 12-month period, no more than 2 trees are cut down on a lot of 0.4 ha or less, plus 1 additional tree for every additional 0.4 ha. | Yes, except for dead, diseased or damaged trees. bylaw | Yes. Some exemptions. See bylaw | Yes. Some exemptions. See bylaw | Yes. Some exemptions. See bylaw | Yes. Some exemptions. See bylaw | Yes. Some exemptions. See bylaw | Yes, may be required. See s. 5(1) | Yes | Environmental Protection Officer, Community Forester or Manager may impose conditions.
<table>
<thead>
<tr>
<th>Permit fee</th>
<th>$500</th>
<th>$50 (see link)</th>
</tr>
</thead>
<tbody>
<tr>
<td>With no development application (residential lot): $76 per tree to a max of $539; development application pending (residential lot): $162-$1,079; commercial $647.00 base fee plus $162.00 per tree up to $10,785.00</td>
<td>No charge for 2 protected trees per lot with &lt; 40 trees. 5% protected trees per lot with &gt; 40 trees. Permit fee = $53.50; $267 if supplemental documentation is required</td>
<td>First application no charge. Subsequent within 24 months: $50 application fee + $25 per tree to be cut. Single tree replacement tree: $100</td>
</tr>
<tr>
<td>Urban area and urban reserve parcels &lt; 0.5 ha = $50 for first tree + $25 for additional trees Development and large scale clearing: $200 base fee + $25 per tree Tree replacement = $425 per tree (see link)</td>
<td>$75 per tree for first 10 trees to be removed; $150 per tree for each additional tree to be removed</td>
<td>In Fees and Charges Bylaw, $76 for pruning per tree; $359 for removal of 5+ trees; $1,860 for removal of 10+ trees. Additional review of tree plans $515</td>
</tr>
</tbody>
</table>

| Development, site or tree plan required (written plan and/or report to accompany permit application) | Yes | May be required | Yes | Tree cutting, retention and replacement plan may be required | Yes, application must include a development plan for land where cutting is proposed, and a tree replacement plan | Yes. Application must include a tree cutting and replacement plan | Tree management plan to include initial tree assessment, tree risk assessment; replacement planting plan may be required. | Arborist report, tree protection plan, tree replacement plan |
| Site plan, replanting plan, for protected certified arborist report |

<p>| Security deposit required for permit | May be required | May be required | $863 | A $300 per tree security deposit may be required | $500 | $500 | If replacement trees are required, a deposit of $425 per replacement tree to max of $17,000 per hectare and $100,000 per application | $500 per replacement tree; $500 when replacing hazardous specimen tree; $10,000 when replacing non-hazardous specimen tree |
| 125% of estimated cost of work to be performed to a maximum of $10,000 |</p>
<table>
<thead>
<tr>
<th>Tree replacement ratio - the number of replacement trees required to replace trees cut down</th>
<th>3:1 when coniferous &gt; 4 m; 3:1 when deciduous tree &gt; 7 m</th>
<th>Not specified</th>
<th>1:1 when diameter of tree cut is up to 30.5 cm; 2:1 when diameter is 30.5 cm+ to 61 cm; 3:1 when diameter is 61 cm+</th>
<th>Replacement may be required.</th>
<th>At least 1:1 replacement tree unless qualified person demonstrates not feasible.</th>
<th>Not specified</th>
<th>2:1 where tree cutting contravenes bylaw</th>
<th>If lot &lt;420 sq m ratio is 1:1; if lot is &gt;420 sq m ration is 3:1</th>
<th>1:1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tracking of replacement trees</td>
<td>Yes - replacement trees must remain in good health for 3+ years</td>
<td>Not specified</td>
<td>Yes</td>
<td>Yes, as per tree replacement plan</td>
<td>Yes</td>
<td>Not specified</td>
<td>Yes (see Bylaw Schedule B)</td>
<td>Yes</td>
<td>Yes - inspection procedure</td>
</tr>
<tr>
<td>Hazardous trees addressed</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Report by certified arborist required</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Canopy considerations</td>
<td>Not specified</td>
<td>Not specified</td>
<td>Not specified</td>
<td>Coquitlam's Tree Inventory</td>
<td>Delta Trees for tomorrow</td>
<td>Not specified</td>
<td>Not specified</td>
<td>Urban Forest Management Strategy</td>
<td>Yes. Efforts to maintain 20% tree canopy cover.</td>
</tr>
<tr>
<td>Penalties</td>
<td>$1,000 for each healthy tree cut down.</td>
<td>Not more than $1,000</td>
<td>Not less than $2,000 and not more than $10,000</td>
<td>Up to $500 (see link)</td>
<td>Up to $10,000</td>
<td>Minimum penalty for each tree (not Significant Trees): $1,000 for first tree cut without permit; $3,000 for subsequent trees cut without permit to a maximum of $10,000</td>
<td>Not more than $10,000 per tree</td>
<td>Up to $10,000</td>
<td>Up to $10,000</td>
</tr>
<tr>
<td>Civic Tree Reserve Fund</td>
<td>$539 per tree</td>
<td></td>
<td></td>
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<tr>
<td><strong>Notes</strong></td>
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<tr>
<td>Building Information</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Burnaby Tree Bylaw information; Application for tree cutting permit</td>
<td>Tree Management Bylaw information Coquitlam Tree Resource Guide</td>
<td></td>
<td></td>
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<tr>
<td>Delta's Trees for tomorrow</td>
<td>Tree cutting permit application</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Permit requirements, Tree cutting permit application</td>
<td>Tree permit information</td>
<td></td>
<td></td>
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<tr>
<td>Tree Permit Application Form; FAQs; Learn more</td>
<td></td>
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</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Bylaw or policy</th>
<th>Port Coquitlam, City of</th>
<th>Port Moody, City of</th>
<th>Richmond, City of</th>
<th>Sechelt, District of</th>
<th>Sunshine Coast, Regional District</th>
<th>Vancouver, City of</th>
<th>West Vancouver, District of</th>
<th>Resort Municipality of Whistler</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Tree defined</strong></td>
<td>Diameter of at least 20 cm measured 1.4 m above natural grade</td>
<td>Diameter of at least 10 cm measured 1.4 m above natural grade</td>
<td>Has/could reach height of 4.5 m and diameter of20 cm measured at 1.4 m above natural grade</td>
<td>Diameter 60 cm+</td>
<td>3 m+ in height, incl. any tree reduced to &lt; 3 m because of topping</td>
<td>Self-supporting, perennial, woody plant that has a trunk or stem and a root system</td>
<td>Diameter 10 cm+ measured 1.4 m above the highest adjacent natural ground level</td>
<td>Any living, erect, woody plant that is 15 cm or more in diameter measured 1.4 m from the base of the stem</td>
</tr>
</tbody>
</table>

- **Port Coquitlam Tree Bylaw, 2005, No. 3474**
- **City of Port Moody Tree Protection Bylaw, 2015, No. 2961**
- **City of Richmond Tree Protection Bylaw, 2015, No. 8057, 2006**
- **District of Sechelt Environment and Protection Bylaw 2009, No. 484**
- **Sunshine Coast Regional District Tree Cutting Permit Bylaw, No. 350, 1991**
- **City of Vancouver Protection of Trees Bylaw No. 9958, 2015**
- **District of West Vancouver Interim Tree Bylaw, No. 4892, 2016**
- **Resort Municipality of Whistler Area tree protection Bylaw No. 1038, 1994**
<p>| Significant or protected trees defined | Wildlife trees, heritage trees, specimen trees, trees important to community, native trees - see Schedule C. | Tree identified by Council as significant - important to community, including for heritage or landmark values or as wildlife habitat | Trees within the designated environmental sensitive areas - see Schedule D for map | Trees with diameter 60 cm+; trees designated to be retained on a plan attached to a development, variance, building or subdivision permit | No | No | Arbutus, Garry Oak | No |
| Area covered by bylaw | All lands under Port Coquitlam’s jurisdiction | All lands under Port Moody’s jurisdiction | All lands under Richmond’s jurisdiction | Properties 1 ha+, trees within 30 m of Chapman Creek or Gray Creek, within 15 m of any watercourse and natural boundary of the ocean | Areas subject to flooding, erosion, avalanche or land slip and are designated as Tree Cutting Permit Area A and Area B | All lands under Vancouver’s jurisdiction except lands under the jurisdiction of the Park Board | All lands under West Vancouver’s jurisdiction | All lands under Whistler’s jurisdiction |
| Cutting permit required | Yes, may be required. No permit required when cutting in a calendar year 5% of trees on a lot, if trees aren’t removed within 5 ms from the perimeter of the lot and within 10 m of a highway. Significant trees cannot be removed. One tree per lot excluding significant trees. | Yes | Yes | Yes, may be required. No permit required for cutting 1-3 trees per parcel per year. Where parcel is 1 ha+ no permit for cutting 1-3 trees per ha per year within Tree Cutting Permit Area B | Yes | Yes for cutting trees with a DBH of 75 cm+ | Yes |</p>
<table>
<thead>
<tr>
<th>Permit fee</th>
<th>Single family lot: $50 permit fee and $20 per tree. Multi-family, commercial or industrial lot: $75 permit fee and $25 per tree</th>
<th>For single family, residential: $205 Other: $550 (see link)</th>
<th>Permit required but no charge for cutting 1 tree per parcel during a 12-month period. $56.75 application fee for 2 or more trees.</th>
<th>$50 for first 3 trees, $10 for each additional tree; protected trees</th>
<th>$100 processing fee</th>
<th>$67 for first tree in 12-month period; $194 per subsequent trees during same 12-month period</th>
<th>Low or moderate impact: $125</th>
<th>High impact minimum $1,000</th>
<th>Private property near streams or covenanted areas = $125</th>
<th>$125</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canopy considerations</td>
<td>Not specified</td>
<td>No</td>
<td>Cannot alter canopy except if tree forms part of a hedge</td>
<td>Yes - with regards to topping</td>
<td>Not specified</td>
<td>Yes. Urban Forest Strategy.</td>
<td>Not specified</td>
<td>Not specified</td>
<td>Not specified</td>
<td>Not specified</td>
</tr>
<tr>
<td>Development, site or tree plan required (written plan and/or report to accompany permit application)</td>
<td>Tree cutting and replacement plan may be required</td>
<td>Tree removal plan; tree retention plan required</td>
<td>Yes</td>
<td>Tree cutting and replacement plan may be required; Engineer's report may be required</td>
<td>May be required</td>
<td>Arborist report; tree plan that complies with sec 4.1.4 of the Zoning and Development Bylaw</td>
<td>Not specified</td>
<td>Not specified</td>
<td>Not specified</td>
<td>Not specified</td>
</tr>
<tr>
<td>Security deposit required for permit</td>
<td>Yes. Deposit equal to 100% of the value of all replacement trees and site restoration measures</td>
<td>Security deposit is required for replacement trees</td>
<td>No</td>
<td>$200 per replacement tree</td>
<td>Yes. See Schedule B. Amount to be determined.</td>
<td>No</td>
<td>Security of $5,000 per replacement tree</td>
<td>Security deposit may be required – 135% of the value of replacement trees and site restoration measures</td>
<td>Security deposit may be required – 135% of the value of replacement trees and site restoration measures</td>
<td>Security deposit may be required – 135% of the value of replacement trees and site restoration measures</td>
</tr>
<tr>
<td>Tree replacement ratio - the number of replacement trees required to replace trees cut down</td>
<td>1:1</td>
<td>1:2</td>
<td>1:1 on single family parcels; may be more than 1:1 on other parcels. No replacement required for 1 tree cut per parcel during a 12-month period</td>
<td>1:1 when permit is required</td>
<td>Not specified</td>
<td>1:1; 2:1 or trees acceptable to Director of Planning as per Schedule D</td>
<td>Person who cuts a tree contravening bylaw may be ordered to plant 1 replacement tree for each tree cut</td>
<td>1:1</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Tracking of replacement trees</strong></td>
<td>Municipal staff may inspect replanting site at any time to enforce bylaw.</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>------------------------</td>
<td>------------------------------------------------------------</td>
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<td></td>
<td></td>
</tr>
<tr>
<td><strong>Hazardous trees addressed</strong></td>
<td>Any tree determined by a certified arborist which presents a safety hazard</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Canopy considerations</strong></td>
<td>Not specified</td>
<td>No</td>
<td>Cannot alter canopy except if tree forms part of a hedge</td>
<td>Yes - with regards to topping</td>
<td>Not specified</td>
<td>Yes, Urban Forest Strategy</td>
<td>Not specified</td>
<td>Not specified</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Penalties</strong></td>
<td>Cutting of trees without permit: $200-$300 Significant/heritage trees: $400-$500 Tree damaging activities: $200-$300 See link.</td>
<td>No less than $1,000 and not more than 10,000.</td>
<td>No less than $1,000 and not more than $10,000</td>
<td>Not less than $10,000</td>
<td>Cost of restoring all vegetation</td>
<td>Not less than $500, not more than $10,000</td>
<td>Up to $10,000</td>
<td>Not more than $10,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Notes</strong></td>
<td>Tree Bylaw basics</td>
<td>Tree Bylaw FAQs</td>
<td>Summary of requirements: Tree bylaw information</td>
<td>Protecting trees in Sechelt</td>
<td>Tree cutting permits</td>
<td>City trees</td>
<td>Tree protection and Proposed Interim Tree Bylaw: Protecting West Vancouver’s Trees</td>
<td>Tree cutting permits</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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### Attachment B: Summary of Tree Management Package Options

(pink-shaded cells show actions under tree management bylaw)

<table>
<thead>
<tr>
<th>Key Problems with Uncontrolled Tree Cutting</th>
<th>Available Mitigation Action(s)</th>
<th>Base Package (Option 1)</th>
<th>Intermediate Package (Option 2)</th>
<th>Comprehensive Package (Option 3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>pre-application clearing (large properties)</td>
<td>tree cutting permit</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>clearing of non-ALR land for ag-use</td>
<td>restrictive covenant for 10 year no rezoning</td>
<td></td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>erosion of steep slopes</td>
<td>tree cutting permit</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>loss of wildlife trees</td>
<td>tree cutting permit</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>loss of heritage trees</td>
<td>tree cutting permit</td>
<td></td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>loss of specimen trees</td>
<td>tree cutting permit</td>
<td></td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>loss of tree canopy on larger properties</td>
<td>tree cutting permit</td>
<td></td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>rural area tree canopy assessment</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>loss of tree canopy on smaller properties</td>
<td>tree cutting permit</td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>urban area tree canopy assessment</td>
<td>✓</td>
<td>✓</td>
<td>in future</td>
</tr>
<tr>
<td>unauthorized cutting on municipal property</td>
<td>tree bylaw prohibition &amp; penalties</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>funding source of tree management program</td>
<td>permit fees, fines, &amp; general revenue</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

**PRIMARY LIMITATIONS OF PACKAGE OPTION**

- No disincentive for clearcuts on large properties which was the primary driver for a new tree bylaw.
- No disincentive for tree cutting on smaller properties.
- Addresses all key problems

**ENVIRONMENTAL BENEFITS**

- 20
- 20
- 20

**ANNUAL COST**

- $ $ $
### Attachment C - Comparison of Options and Tree Bylaw Requirements from Select Municipalities

<p>| Community                  | Estimated Population (2018) | Area (sq km) | Bylaw Year | Last Amended | Bylaw Application                                                                 | Permit Exemptions                                                                 | Permit Fees                                                                 | Tree Retention/Replacement Requirements                                                                 | Cash In Lieu Tree Replacement Plan | Penalty for Unauthorized Tree Removal | Replacement Tree Security Deposit | FTEs |
|----------------------------|-----------------------------|--------------|------------|--------------|------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|-------------------------------------------------------------------------------|============================================================================================|----------------------------------|-----------------------------------|-----------------------------------|------|
| <strong>Abbotsford</strong>             | 152,000                     | 360          | 2010       | 2016         | Trees &gt; 20 cm DBH on all private lands; except forestry-designated, ALR            | Hazard trees; building, driveway, septic, utility or municipal services; lands where a development permit expressly deals with tree removal | $65 for 1st tree $97 for 2nd to 5th tree $131 for &gt; 5 trees 0 for &lt; 20 cm DBH 2 for 20 - 30 cm DBH 3 for &gt; 30 cm DBH | Development: see Subdivision and Development Servicing Bylaw Punitive: 2:1 n/a $300/tree $500/tree 100% of replacement trees | $600/tree to a maximum of $24,000/ha | $1000/tree | $600 to a maximum of $24,000/ha and a maximum of $100,000 per application to be held for 1 year after planting | 1.5 |
| <strong>Langley Township</strong>       | 121,000                     | 316          | 2019       | n/a          | Trees &gt; 30 cm DBH on all private lands not subject to development; except tree production lands, ALR, golf courses, development lands (see TOL Subdivision and Development Servicing Bylaw) | Hazard trees; building, driveway, septic, utility or municipal services | $0 for 1 tree per 24-month period $100 for each tree over 1 per 24-month period | Development: see Subdivision and Development Servicing Bylaw Punitive: 2:1 n/a $420/tree $500/tree 120% of replacement tree value | Currently designated: 0; anticipated: 4 | | | | |
| <strong>Langley Township, Subdivision and Development Servicing Bylaw</strong> | | | | | | | | | | | | | | |
| <strong>Maple Ridge</strong>            | 82,000                      | 267          | 2015       | 2017         | Trees &gt; 20 cm DBH on all private lands; except ALR, lots with farm status | Hazard trees; building, driveway, septic, utility or municipal services; within 2 m of existing foundation; rural areas where &lt; 10 trees/year are cut and 40 trees/ha remain, not counting conservation areas | Urban, urban reserve &amp; rural area on lots &lt; 0.5 ha: $50 for 1st, $25 each add’l tree Rural area on lots &gt; 0.5 ha: first 10 trees: $0, $50 for 11th and $25 for each add’l tree Development and large scale clearing: $200 base fee + $25 per tree 20-50 cm DBH Retained: credit for 1 tree. Removed: replace with 2 trees 50-70 cm DBH Retained: credit for 3 trees. Removed: replace with 4 trees &gt;70 cm DBH Retained: 6 trees. Removed: replace with 6 trees | Minimum of 16 trees per acre to either remain or be planted on developable area; all trees in conservation areas require replacement | $600/tree to a maximum of $24,000/ha | | | | |</p>
<table>
<thead>
<tr>
<th>Community</th>
<th>Estimated Population (2018)</th>
<th>Area (sq km)</th>
<th>Bylaw Year</th>
<th>Last Amended</th>
<th>Bylaw Application</th>
<th>Permit Exemptions</th>
<th>Permit Fees</th>
<th>Tree Retention/Replacement Requirements</th>
<th>Cash In Lieu</th>
<th>Penalty for Unauthorized Tree Removal</th>
<th>Replacement Tree Security Deposit</th>
<th>FTEs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mission (current bylaw)</td>
<td>39,000</td>
<td>228</td>
<td>2006</td>
<td>n/a</td>
<td>Trees &gt; 20 cm DBH in Silverdale Comprehensive Planning Area (Formerly Urban/Urban Reserve)</td>
<td>&lt; 5 trees per 0.4 ha (1 ac) portion of a parcel to a maximum of 50 trees per parcel per calendar year; ALR; agricultural use; City lands; driveway, septic, utility or municipal services; within 30 m of a residential dwelling; under an approved tree management plan as part of a development application</td>
<td>$0</td>
<td>During development: Retained credit for 3 trees. Removed: replace at 1:1 ratio, plus 2 trees per lot (in LAN.32 policy document)</td>
<td>Removal prior to development application: replace at a 3:1 ratio (in LAN.32 policy document)</td>
<td>n/a</td>
<td>$250/tree</td>
<td>100% of cash in lieu</td>
</tr>
<tr>
<td>Mission (Option 1 - Base Package)</td>
<td>39,000</td>
<td>228</td>
<td>proposed</td>
<td>n/a</td>
<td>District land, Significant Trees (&gt; 20 cm DBH) on steep slopes, wildlife trees</td>
<td>ALR; agricultural use; City lands; driveway, septic, utility or municipal services; within 2 m of a foundation; under an approved tree management plan as part of a development application</td>
<td>Over 12 month period: $0 for 1st tree, $50 for each add'l tree</td>
<td>20-50 cm DBH: One tree removed: replace with 2 trees</td>
<td>l 0-25 cm DBH: One tree removed: replace with 5 trees</td>
<td>Removal prior to development application: replace at a 5:1 ratio</td>
<td>n/a</td>
<td>$500/tree</td>
</tr>
<tr>
<td>Mission (Option 2 - Intermediate Package)</td>
<td>39,000</td>
<td>228</td>
<td>proposed</td>
<td>n/a</td>
<td>Option 1 plus larger lots (&gt;0.25 acres), heritage trees</td>
<td>ALR; agricultural use; City lands; driveway, septic, utility or municipal services; within 2 m of a foundation; under an approved tree management plan as part of a development application</td>
<td>Lots&gt;0.25 ac on steep slopes: $0 for 1st tree per 12 month period, $50 each add'l tree</td>
<td>20-50 cm DBH: One tree removed: replace with 2 trees</td>
<td>l 0-25 cm DBH: One tree removed: replace with 5 trees</td>
<td>Removal prior to development application: replace at a 5:1 ratio</td>
<td>Minimum of 16 trees/acre. Area calculation not to include environmental areas, greenways or buffers.</td>
<td>$500/tree</td>
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<td>Mission (Option 3 - Comprehensive Package)</td>
<td>39,000</td>
<td>228</td>
<td>proposed</td>
<td>n/a</td>
<td>Option 2 plus smaller lots (&gt;0.25 acres) and specimen trees</td>
<td>ALR; agricultural use with covenant; City lands; driveway, septic, utility or municipal services; within 2 m of a foundation; under an approved tree management plan as part of a development application</td>
<td>Lots&gt;0.25 ac: $0 for 1st tree per 12 month period, $50 each add'l tree</td>
<td>20-50 cm DBH: One tree removed: replace with 2 trees</td>
<td>l 0-25 cm DBH: One tree removed: replace with 5 trees</td>
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<td>Minimum of 16 trees/acre. Area calculation not to include environmental areas, greenways or buffers.</td>
<td>$500/tree</td>
</tr>
</tbody>
</table>
DATE: March 9, 2020
TO: Mayor and Council
FROM: Brent Schmitt, Manager of Engineering Planning, Assets, and Facilities
SUBJECT: Water Meter Program Options
ATTACHMENT: Appendix A - List of Previous Council Reports Regarding Water Metering

RECOMMENDATIONS: Council consider and resolve:
1. That funding in the amount of $50,000 from the Water Utility Accumulated Surplus for the development of a business case analysis for three water metering scenarios (universal, voluntary, and status quo) be approved; and
2. That Council authorize staff to conduct an assessment of the phasing out of the current water and sewer declining-block rate for the ‘Commercial/Industrial/Institutional and Multi-Unit Residential (Metered)’ sector.

EXECUTIVE SUMMARY:
The District has been exploring a water meter program going back to 2007. A major obstacle to moving forward with a program has been the significant capital funding that is required. Grant applications have not been successful. In order to move forward with a water meter program, further analysis is required, not exclusively from a financial perspective, but should also consider non-financial benefits by way of a triple-bottom-line analysis. In the meantime, the District continues to support conservation initiatives and leak detection, while recognizing the significant water savings that were experienced through the water meter pilot project.

Previous reports have helped provide direction for metering in Mission, such as location of meters, billing frequency, and the type of data collection system that is preferred. However, there are a number of options that still need further consideration and assessment, specifically:

- Should the District pursue a universal system, voluntary system, or remain status quo?
- How will the program be funded?
- Will the cost of meter installations be covered by the District, the customer, or both?
- What should be the timeline for implementation of the program?

As answers are developed to the remaining questions on the structure of the water metering program, a meter installation budget will need to be established, staff resources will be re-evaluated, and the water and sewer rates will need to be revised.

In the meantime, staff are pursuing tasks that will provide immediate conservation benefits, such as transitioning metered customers to bi-monthly billing, installing water meters with water main construction projects, and considering the removal of the declining-block rate for the ‘Commercial/Industrial/Institutional and Multi-Unit Residential (Metered)’ sector. A budget of $50,000 is requested for
PRESIDENT OF ANTHONY KANG AT THE BEAT OF THE MEETING

A triple-bottom-line assessment of three metering program options.

PURPOSE:

The purpose of this report is to summarize details and options for a water metering program, provide updates since the workshop in 2019, and seek direction from Council on a water metering strategy.

BACKGROUND:

Going back to 2006, there have been 24 reports, presentations, and memos to Council related to water metering (see list in Appendix A). Reports from 2006 through 2013 discussed various options related to a metering program, while the latest reports have provided analysis of pilot meter data and grant applications for universal metering.

A major obstacle to the implementation of a metering program is the initial capital investment that is required. As such, the District has pursued various grant opportunities to lessen the impact, however, no grant funding has been secured to date. An application in 2009 to the Building Canada Fund was unsuccessful. In 2016, Council endorsed the application for a grant under the Clean Water and Wastewater Fund for the implementation of a universal water metering program, including Advanced Metering Infrastructure (AMI). While this application scored well, it was regarded as too large of a project for the program timeline, and was not accepted. The District’s other application under this program (the sanitary sewer river crossing project) was deemed a higher priority and was granted funding. Most recently, the District has applied for funding under the 2018 Gas Tax Strategic Priorities Fund. Although feedback from previous grant applications was incorporated into the submission, this application was likewise unsuccessful.

Aside from the pilot meter project, grant applications, and metering of new developments, there has been relatively little action towards the development of a universal water metering program.

DISCUSSION AND ANALYSIS:

Current Status of Water Metering and Conservation

Since 2009, all new developments within the District have required water metering. To date, approximately 1,700 of the 10,500 services are currently metered, representing about 16% of customers. Approximately 500 of the metered customers were part of a pilot meter project that commenced in 2015. This project provided details on the typical amount of water usage for flat-rate customers, and offered insight into the scale of leakage that can go undetected without metering. These customers have since been transitioned from a flat-rate fee to a volumetric fee. This process included education, information on water conservation opportunities, and bi-monthly letters outlining details of the transition and scope of fees that a customer could expect based on previous usage.

Although a robust water conservation program would benefit significantly from universal metering, there are a number of conservation initiatives that Mission continues to participate in through the regional water system, including:

- Toilet and washing machine rebates;
- Irrigation and landscape rebates;
- Sale of indoor and outdoor water saving kits;
- Subsidization of rain barrels;
- Workshops for irrigation systems, landscaping, and rainwater harvesting; and
- School/public education (through presentations, brochures, advertisements, etc.).

At a District level, there is currently a budget of $30,000 per year for the leak detection program, which allows for approximately one-third of the system to be tested each year. While the District’s acoustic leak detection device can accurately locate various sizes of leaks, there are a number of variables that can make it difficult to locate all leaks. As for effectiveness, it is estimated that the District’s current

STAFF REPORT TO COUNCIL
system leakage of about 3.2 megalitres per day (MLD) is reduced by about 1% per year through the
leak detection program. Staff will continue to search for new technologies and methods that may be
available to improve the efficiency of the program.

Mission’s annual contribution to the regional water and sewer system operating cost is based on the
usage ratio from the previous year. In 2019, Mission’s usage ratios were as follows:

- Mission’s portion of regional water usage: 23.10%¹
- Mission’s contribution to the regional sewer: 19.71%²

**Reasons for Water Meters**

The decision to move towards a fully metered water system can be motivated by a number of factors,
notably those of a triple bottom line, consisting of social, environmental, and financial elements.

**Social benefits:** From a social perspective, metering provides equity and fairness to users and the fees
that are charged. Under the predominantly flat-rate system currently in place, the low-users are
especially subsidizing the high-users. A volumetric-based fee would charge users based on their
consumption, and would provide customers with the ability/choice to reduce bills by changing their
usage habits. Additionally, volumetric billing would provide uniformity with the billing and rates that are
implemented by our regional partner, Abbotsford.

**Sustainability:** As Mission continues to grow, there is increased awareness and need for sustainable
development. This includes maximizing the efficient use of existing water supply sources before the
development of additional sources. Metering and frequent billing will not only support reductions in
average water usage³, but will effectively help to identify large leaks occurring on private property⁴. A
successful metering and conservation program can effectively take the place of a portion of new supply
needed for future development, thus reducing the overall impact on water sources. Future grant
applications may be supported by, or depend on, the District demonstrating that environmentally
sustainable systems are in place for the wellbeing and longevity of the community. Likewise, the updated
Water Sustainability Act requires that license holders demonstrate a responsible usage of existing water
supply prior to applying for new a new source. A water-metering program, and expanded conservation
program, would certainly demonstrate responsible use of our existing water supplies.

**Resiliency:** Water conservation, predominantly during the summer months, will help to reduce peaking
factors, and will permit an increased drought resiliency for the community.

**Financial benefits:** While the cost of implementing and maintaining a universal water-metering program
will be substantial, there are a number of financial benefits that could be achieved. Water conservation
would result in a reduction in capital costs, reduced annual operating costs, and potentially a decrease
in infrastructure requirements of developers. Decreased water usage will not remove the need for future
source expansion, but will reduce the scale of future source development along with the overall capital
costs over the lifespan of the system.

**Regional costs:** Reduction of Mission’s ratio of regional water usage will also impact the District’s
contribution to the regional operating costs, of which Mission is currently responsible for 23.10% of the
water system costs, and 19.71% of the sanitary sewer costs. A reduction in water usage will not
necessarily correspond to a similar reduction in the sewer system ratio, as it will depend on how much
of the water reduction is attributed to leaks which are not currently entering the sewer system. However,
it is anticipated that an effective conservation program would result in a significant reduction in Missions

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¹ By comparison, Mission’s serviced population is estimated to be approximately 19.6% of the Abbotsford-Mission serviced population based
on analysis by Econics as part of the regional Water Efficiency Plan currently being drafted.
² Mission's 2019 ratio of sewer demand (3,715 ML) versus water usage (5,538 ML) was 67%. There are 84% of the water customers connected
to the municipal sanitary sewer system, which partly explains why Mission's regional sewer demand is lower than its regional water
consumption.
³ As per the Council report of November 7, 2016, the pilot meter project identified the potential for water savings within the study group of 27%
to 38%, based on high-users reducing their usage moderate levels. If this water savings was achieved across the District, this would be
equivalent to an available water supply for over 3,500 homes.
⁴ The pilot meter project identified a leak at one property of approximately 77 m³/day, which is equivalent to the average usage for 77 homes.
share of regional operating and capital cost. It should also be noted that the District’s maximum daily usage has often exceeded its share of the regional water system\(^5\).

**Cost of Development:** Although new development is often expected to pay for any system upgrades or expansions to accommodate the new growth, there are inevitably costs to the District\(^6\). Reduction in demands on the water and sewer systems will allow for additional growth to occur while limiting the amount of expansion or upgrades to existing infrastructure. This will benefit the District and developers by reducing capital costs associated with servicing new sites. The full scale of this impact is not known without further computer modeling, but a sensitivity analysis will be incorporated into the modeling for the upcoming water and sewer master plans to assess the magnitude of the upgrade costs with and without universal water metering.

Any delays in moving to a fully metered system will also mean delays in achieving the social, environmental, and financial objectives of the program.

**Metering Options**

Previous reports to Council have outlined various options for a metering program, including the following items:

- Voluntary program compared to a mandatory metering program;
- Meter installation costs to be covered by the customers, by the District, or a combination of both;
- Timeline for the implementation of a metering program;
- Location of meter installations;
- Billing frequency; and
- Type of data collection system.

**Program type:** While a voluntary program would allow customers to choose when to change over to metered-billing, it is recognized that a universally-metered system would be most effective from a conservation and financial standpoint\(^7\). Council endorsed two grant applications in recent years for funding of a universal metering program, however, both applications were unsuccessful.

**Cost of installation:** Some municipalities have required customers to pay for the installation of a new water meter, and implemented a payment plan to lessen the burden of the one-time cost. This method is perhaps more conducive to a voluntary program, where customers can choose whether to join the program. However, as one of the outcomes of a metering program is availability of water supply for new customers, it may be considered contradictory to have existing users pay for their own meters. Additionally, uptake of a voluntary program could be negatively affected by any barriers put in place, such as a user-pay program. With a universal meter program, it would be most practical and equitable for the District to fund the entire program and recover costs through user fees over the lifespan of the infrastructure\(^8\).

**Timeline/Phasing:** If Council were to approve funding for a universal water-metering program, it is anticipated that the program could be implemented over a 3-year period, but for the sake of funding could be phased in over a longer period, such as 10 years or more\(^9\). Phasing of the program could focus on older areas, secondary suites, voluntary customers, or areas with frequent water restriction infractions.

The timeline for a voluntary metering program would be more uncertain, as it would depend on the

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\(^5\) As noted in the September 2, 2012 report to Council.

\(^6\) The District carries some cost of development within the Development Cost Charge program, through such items as the Assist Factor and Benefit Factor.

\(^7\) The Council report dated September 4, 2012 demonstrated that a universal metering program would provide the lowest net present value compared to the status quo or to a voluntary water meter program.

\(^8\) Report of February 6, 2013 recommended that the program be 100% funded by the District.

\(^9\) Reports of September 4, 2012 and February 6, 2013 recommend that universal metering be phased in over a two to three-year period. The report of June 19, 2013 suggested a timeline of three to four years. Most recently, Metro Vancouver released the ‘Residential Metering in Metro Vancouver – Best Practices Guide for Local Governments (August 2019)’, which suggests that a 10-year approach to universal metering is optimal, while recognizing that shorter or longer timeframes may be preferable to municipalities.
uptake by customers, and setting of a threshold of participation that would trigger the move to a mandatory program.

**Meter location:** Industry best practice suggests that new water meter installations be located at the property line. Other local municipalities have considered in-house installations, but now have policies that require meters to be installed at the property line. While an in-house installation may have a slightly reduced installation cost, there are a number of other challenges, including:

- Increased liability for the District due to leaks and property damage;
- Increased complexity of installation if the building is fully finished;
- Accessibility for regular maintenance, readings, and repairing leaks would need to be coordinated with the home owner;
- Illegal bypassing of the meter would be easier in the house;
- Meters in the house would not capture leakage between the property line and the house, thus owners may not be aware of a leak and would not be held financially accountable (the leakage amount in the service line can be substantial, as demonstrated in the pilot meter project);
- The meter would not capture flow to irrigation systems, which can be a substantial amount of the summer consumption; and
- Customer complaints about the noise of the meter.

Based on this, staff will continue to require that all water meter installations be located at the property line.

**Data collection:** The District currently employs a ‘drive-by’ radio-read system for collecting water meter data. This system allows an operator to collect meter readings via a laptop within a truck. Although billing occurs on an annual basis, data is collected on a monthly basis for analysis purposes. While a drive-by system provides the functionality required for our current annual billing, it lacks the versatility of a full Advanced Metering Infrastructure (AMI) system. Regular interval data, such as hourly readings provided by an AMI system, is essential for a robust leak detection program, conducting customer audits, and helping customers to understand their usage habits. Based on this, staff will include AMI system details in the assessment of meter program scenarios.

**Billing frequency:** Flat-rate and metered-rate customers are currently invoiced on an annual basis. It is recognized that annual billing will not achieve the desired water conservation objectives. Household utilities are generally invoiced on a monthly or bi-monthly basis, and allow for increased awareness of usage and costs. When implementing their AMI system, Abbotsford removed water and sewer utility charges from property taxes and issued bi-monthly invoices. Bi-monthly frequency of billing could provide the appropriate balance of labour and postage costs relative to the water conservation benefits that would be achieved. Staff are currently taking steps to move all metered customers to a bi-monthly billing cycle.

**Observations in Water Usage**

The pilot meter project included the upgrading of approximately 500 water services to radio read meters in 2015. Data was collected on a monthly basis, and compared to usage data from the volumetrically billed customers. Monthly data continues to be collected and analyzed, and the pilot meter customers

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10 As per interviews referenced in the Council report dated February 6, 2013, Surrey and Richmond require water meters to be installed at the property line. Surrey originally allowed in-house installations, but due to many challenges with this, now require meters to be at the property line. Richmond made the decision after extensive research.

11 Currently, the approximately 1800 radio-read water meters are read using a drive-by system. This process takes nearly a full shift to drive the entire network and stop to address any mis-reads. Approximately 95% of the meter readings could be captured by parking in three strategic locations, but there are numerous meters that do not have a direct line-of-sight to these locations, thus a full drive-by is necessary.

12 An AMI system includes water meters, radio transmitters, collection towers, a database, and analytical software tools. This type of system provides automated daily collection of meter interval data, down to 15-minute or hourly readings.

13 Council report of February 22, 2010 recommended that Mission’s meter program collect the same data as Abbotsford’s system. Around the time of that report, Abbotsford was pursuing an AMI system. Abbotsford has had a full AMI system since 2011, and has since developed a web portal that allows customers to view their usage by hourly, daily, or annual totals.

14 As discussed in the Council report dated August 31, 2009.
are being transitioned to the volumetric billing system. A number of interesting observations are noted from the collected data, including:

- Of customers in the pilot meter area, 83% would pay less than the flat rate amount (based on 2016 and 2017 data);
- The top 25% of users account for over 50% of water usage (12 months of data from 2015-2016);
- The average home in the pilot meter area uses about 1 m³ (1000 litres) of water per day;
  - In comparison, the top 14 customers account for 109 m³ per day, or the equivalent of 109 average homes worth of usage (based on January/February 2018 data); and
  - In October 2017, two single-family homes had leakage totaling 108 m³ per day, or the equivalent of 108 average homes worth of usage (note: this leakage would not have been captured by an in-house meter).

**Recent Achievements**

Staff have been carrying out a number of tasks related to water metering, including:

- Reviewing monthly usage data;
- Contacting customers with apparent leaks or high usage;
- Transitioned 500 pilot meter customers from a flat-rate to a metered-rate, including education through letters, brochures, and one-on-one discussions; and
- Initiated steps to transition metered customers to bi-monthly billing.

In conjunction with the regional Water Efficiency Plan being completed for the Abbotsford Mission Water and Sewer Commission, the consultant has also drafted a ‘Water Metering Feasibility Study for the District of Mission’. The draft report highlights that the District could potentially reduce system water usage, conservatively by 17.5%, but reasonably by over 20%, noting that other communities in BC have seen reductions of 30%. Details of cost-benefit analysis will be presented in the forthcoming Water Efficiency Plan.

Metro Vancouver prepared the ‘Residential Water Metering in Metro Vancouver – Best Practices Guide for Local Government (August 2019)’, in support of local governments in the region moving towards universal metering. The guideline looked at four scenarios of varying intensities of metering programs and conducted a triple-bottom-line analysis of each. The finding was that the greatest overall financial and non-financial benefits could be achieved by implementing universal metering on all residential dwellings over a 10-year time period.

**Development of a Metering Strategy**

A metering program strategy is needed, so as to better inform our planning process (such as the master plans which will commence in 2020). Staff recommend that Council consider three potential options for a metering program, in which a business case would then be developed to weigh the costs and benefits of these scenarios. It is proposed that the following scenarios be evaluated and reported back to Council:

1. **Universal metering**: to be achieved over a 10-year timeframe.
2. **Voluntary program**: with no intended timeframe to go to mandatory metering.
3. **Status quo**: Predominantly new meters during development and construction. Consideration could be given to metering requirements for repeated water restriction infractions or changes of ownership.

**Additional Actions Going Forward**

To move the metering program forward, numerous other action items should be considered:

**Secondary Suites**: Development Services, in collaboration with Finance and Engineering, is currently preparing a Secondary Suite Program for Council’s consideration. The Program aims to address a number of issues and challenges with the District’s current approach to regulating secondary suites. One primary objective of the Program is to allow a secondary suite as an outright permitted use on all residential properties provided certain conditions are met, namely those related to the provision of off-
street parking and adherence to life safety standards. As part of developing this Program, careful consideration is being given to requiring all properties seeking to authorize their suites to have a water meter installed as part of applying for a secondary suite permit. Currently, the District’s bylaws when rezoning to allow for a secondary suite require the installation of a water meter. While the burden of cost for a new meter will continue to be borne by the property owner of an authorized suite, this cost will be largely offset with the elimination of rezoning application fees should Council adopt the Program as will be proposed. If the Program does not come to realization and a universal metering program does not come into effect, staff would then evaluate further options for appropriate billing rates for both secondary suites with or without water meters.

**Meter Installation Budget:** Establishment of an annual budget for a metering program upon completion of updated research (for metering, data collection and storage, billing, etc.), life-cycle costs, and assessment of metering program options.

**Water Rates:** Review metered-rates and flat-rates to ensure an equitable recovery of revenue from all customers. Some steps and timelines will be dependent on what type of metering program is decided upon, but could consider the following tasks:

- Remove the declining-block rate structure from the ‘Commercial/Industrial/Institutional and Multi-Unit Residential (Metered)’ sector. Staff recommend that the declining-block rate structure be transitioned to a uniform rate consistent with the residential rate. Details of the rate change will be outlined in a future staff report;
- Rate adjustments should not have the sole purpose of increasing revenue, but must be structured in a way to provide full cost recovery, and thus ensure the long-term sustainability of the water and sewer systems;
- For the metered-rates, assess options for the introduction of fixed-rate and volumetric-rate components; and
- Evaluate the impact on flat rates as increased numbers of low-usage customers transition to a metered rate and conservation habits improve. Some of the impact and rise in flat rate can be buffered by the extra revenue that would result from the removal of the declining-block rate for the ICI sector.

**Water main replacement projects:** During water main replacement projects in recent years, each new service line was installed with a meter setter and box, but not a meter. Moving forward, staff will include with new water main replacement projects the installation of a meter with every service line upgrade. Additionally, any previously installed setters with no meter will be fitted with a meter. Customers in both instances will be transitioned over to volumetric billing.

**COUNCIL GOALS/OBJECTIVES:**

A water metering program would touch on the values in the Strategic Plan of ‘Sustainability’ and being ‘Future Focused’, while relating to the goals of ‘ensuring sound financial management’ and ‘ensuring resources available when needed’.

**FINANCIAL IMPLICATIONS:**

There are potential significant short-term costs and long-term benefits that could be realized through the implementation of a metering program.

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15 In 2016-2018, Delta transitioned their secondary suite customers to a mandatory metered program, at no cost to the property owner, to achieve improved equity in billing.

16 The Council report of April 22, 2009 indicated Mission’s desire to maintain water rates comparable to Abbotsford’s, at which time Abbotsford had a declining-block rate structure for the ICI sector. However, since that time, Abbotsford phased out the declining-block rate structure over a three-year period, replacing it with a uniform rate that is consistent across all land-use sectors, with the exception of the agricultural sector, which receives a 10% discount on the water rate.

17 The Council report of October 21, 2013 recommended a split of 50/50 of the fixed versus volumetric charges for the average residential users. A fixed component will help to stabilize the District’s revenue, to some degree, but will also lessen the conservation influence of a fully variable rate.
A universal metering program would provide a number of financial benefits that would partially offset some of the considerable capital costs. A permanent reduction in average water usage would offset a portion of future source development. It is recognized that reduced water usage will lessen the cost of infrastructure upgrades to allow for future development, but the scale of the impact is not known at this time, as additional modeling would be required. More precise calculations of potential financial benefits will be provided in the assessment of options.

**Ongoing Impacts**

A fully metered water system will place additional demand on staff resources. It is estimated that an additional three permanent FTE’s may be required once the program is fully implemented. Water and sewer rates will need ongoing modifications as more customers transition to a metered-rate. Some factors will tend to push the unit rate upwards, such as new costs for an AMI system, additional staff, and reduced overall system usage (ie. higher rates are needed to collect the same revenue). For ICI customers, removal of the declining block-rate structure would also result in an increased cost of service. There are also a number of factors that will lower the unit rate, or at least offset some of the unit rate increases, including the raising of the flat-rate fee to account for higher-usage customers remaining in that bracket, increased revenue with the removal of the ICI declining block-rate, and decreased regional operations costs.

**Funding Sources**

It is estimated that a universal metering program, including full AMI system, could cost in the order of $16.9 million (including administrative and internal labour costs). Funding for the program could be provided, in whole or in part, from:

- Community Works Gas Tax Fund;
- Water capital reserves;
- Sewer capital reserves;
- Borrowing;
- Development Cost Charges (staff to verify is this option is available);
- Customer-payment (either lump sum or over a set timeframe at a low interest rate); and
- User fees (for any changes to the operations costs).

Prior to deciding on a metering program, staff are proposing to conduct a business case assessment for Council’s review. Based on the recommendations above, the business case would look at three potential scenarios. A budget of $50,000 is recommended for these works. Staff estimate that a report would be provided to Council in Q4 2020.

I have reviewed the financial implications
Doug Stewart, Director of Finance

**COMMUNICATION:**

No communication plan is required at this time.

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18 The Council report of August 29, 2011 suggested that three new staff would be required to administer the metering program: one FTE for meter investigation and maintenance, one FTE for data analysis and monitoring, and one FTE for billing.
SIGN-OFFS:

Brent Schmitt, Manager of Engineering Planning, Assets and Facilities

Reviewed by:
Tracy Kyle, Director of Engineering & Public Works

Comment from Chief Administrative Officer:
Reviewed.
# Appendix A

## List of Previous Council Reports Regarding Water Metering

<table>
<thead>
<tr>
<th>Report Date</th>
<th>Agenda Date</th>
<th>Title of Report</th>
<th>Water Rates</th>
<th>Grants</th>
<th>Objectives &amp; Rationale</th>
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<td>27-Dec-06</td>
<td>10-Jan-07</td>
<td>Review of Water and Sewer Financial Plans</td>
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