SUBJECT: Street Tree Trimming Program Enhancement (2005) – Peer Review Results and Updated Program Cost Estimates (PW05015b) - (City Wide)

RECOMMENDATION:
That due to budget constraints staff do not recommend the Street Tree Trimming Program Enhancement with revised estimates as contained within Report PW05015b for 2006.

Scott Stewart, C.E.T.
General Manager
Public Works

EXECUTIVE SUMMARY:
As per the 2005 budget process - Task List Item #30, staff was directed to review the 2005 budget “Street Tree Trimming Program Enhancement” request in attempts to reduce program costs and budget impacts for reconsideration during the 2006 budget deliberations. A peer review has been conducted confirming support for the approved program service level, the proposed service delivery model, and the enhancement’s implementation plan as originally presented. Concurrently, staff has reviewed the original street tree inventory estimate resulting in a significant reduction of inventory size relative to the expanded service area (i.e. all urban areas). Accordingly, the implementation plan has been revised to reflect the adjusted inventory size, thereby significantly reducing the program’s original operating and capital cost estimates. This report serves to summarize the results of the peer review, and provides updated program cost estimates for further consideration by Council.
BACKGROUND:
The information/recommendation contained within this report has city wide implications.
The 2005 Public Works Department budget included an enhancement request to fund a previously approved Street Tree Trimming Program service level reflecting a five year preventative trimming cycle, and a service area expansion to include all city owned street trees within the urban area. Following consideration of program costs and tax levy impacts, council directed staff to review the 2005 budget “Street Tree Trimming Program Enhancement” request in attempts to reduce program costs and budget impacts for reconsideration during the 2006 budget deliberations. Stantec Consulting Ltd. has been retained by the City of Hamilton to prepare a peer review of the 2005 Program Enhancement submission to address the appropriateness of the following:

- The current STTP service level of a five year trimming cycle;
- The proposed STTP service delivery model, and in particular the in-house / contracted out ratio of service;
- The proposed STTP enhancement implementation plan for the service level and delivery model and;
- STTP improvement opportunities that would enhance the efficiency or effectiveness of the service delivery

Through a review of applicable Policies, Staff Reports, Program Plans, Best Management Practices, Comparative Service Levels, Industry Standards and trends, and an analysis of legal and risk management parameters vis a vis the current state of the city’s urban street tree infrastructure, the following recommendations were provided by the consultant: (consultant’s report available upon request)

- That the urban STTP Service Level shall be re-affirmed reflecting:
  - a five year preventative trimming cycle, and
  - an extended service area including all urban street trees.

- That the urban STTP Service Delivery Model shall be endorsed to reflect:
  - a combined “in house” and “contracted” workforce in an approximate ratio of 65 / 35 respectively, and
  - a coordinated program delivery through a single agency being the City of Hamilton’s Public Works Department with funding support from the local hydro utility commission.

- That a budget implementation strategy to provide the required funding for the approved service level and expanded program service area in phases over a five consecutive year period be endorsed.

- That a street tree inventory be completed as soon as possible to ensure the availability of accurate data for program planning and accountability, asset management and risk management.

Concurrent to the peer review, staff reassessed the original street tree inventory estimates, as outlined in Report PW05015b as Appendix “A”, which resulted in a significant reduction of projected inventory size related to the expanded service area (i.e. all urban areas). Accordingly, the implementation plan has been revised to reflect
the adjusted inventory size, thereby significantly reducing the program’s original operating and capital cost estimates.

**ANALYSIS/RATIONALE:**

The five year service level and extension of the service area is supported based on the following rationale:

- Encourages City/Hydro Provider Partnership
- Approaches “Best Practice” standard
- Addresses extensive Customer Complaint Backlog
- Reduces Liability Risk
- Optimizes Benefits derived from Street Tree Infrastructure
  - Improved Aesthetics
  - Environmental (Air Quality – Dust Suppression, Oxygen production and carbon dioxide reduction),
  - Macro Climate Modification
  - Energy Conservation

The Service delivery model involving a combined workforce is supported as it provides the benefits of inherent competition between “in-house” and “contracted” workforces, and flexibility for program management during the enhancement implementation period (five years) and thereafter as required.

The Service delivery model involving the partnership between the Horizon Utilities Corporation and the City is essential in providing best value from program resources and optimal program effectiveness through a single service provider. The single service provider approach also facilitates effective customer service and the establishment of maintenance history records to assist with risk management and the Urban Forest Health Program.

The enhancement’s implementation time frame over a five year period is considered an appropriate term as it balances the need to establish a five year trimming cycle as quickly as possible (to derive its benefits) versus the desire to minimize annual operating budget pressure. Longer phase in terms are possible, working with minimum budget increments relating to the addition of labour and equipment for a single crew, however, the momentum of the program may be jeopardized by protracted implementation periods placing the expected program outcomes at risk (refer to the financial/staffing/legal implications section and Appendix “B” to Report PW05015b).

**ALTERNATIVES FOR CONSIDERATION:**

An alternative to the recommendation involves the cancellation of the street tree trimming program and adopted service levels, and the redirection of available resources to remaining programs and activities of “Investigation and Complaint Response”, “Storm Damage Response”, “Planting”, “Removals”, and Urban Forest Health”. This alternative is not recommended as it would impart the following impacts:

- Degraded Street Tree Infrastructure Quality
- Diminished Benefits derived from the Street Tree Infrastructure
- Aesthetics
- Environmental
- Macro Climate Modification
- Energy Conservation

- Increased Public Safety and Liability Risks
- Increased demand for Storm Damage, Complaint Response, and Removal services
- Decreased efficiency in resource utilization (reactive vs. proactive mode of operation)

**FINANCIAL/STAFFING/LEGAL IMPLICATIONS:**

**Financial/Staffing Implications**

The original budget implementation plan based phased implementation scheme for a five year cycle over five consecutive years and an assumed inventory of 300,000 trees reflected the following additional program costs (2005 Net $9,305,000.00):

<table>
<thead>
<tr>
<th>Budget</th>
<th>Total</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating:</td>
<td>$ 6,800</td>
<td>$1,966</td>
<td>$1,490</td>
<td>$1,517</td>
<td>$1,073</td>
<td>$ 754</td>
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<tr>
<td>*Revenue:</td>
<td>$ 978</td>
<td>$ 285</td>
<td>$ 206</td>
<td>$ 215</td>
<td>$ 156</td>
<td>$ 116</td>
</tr>
<tr>
<td>Net:</td>
<td>$ 5,882</td>
<td>$1,781</td>
<td>$1,284</td>
<td>$1,302</td>
<td>$ 917</td>
<td>$ 638</td>
</tr>
<tr>
<td>Capital:</td>
<td>$ 3,483</td>
<td>$ 867</td>
<td>$1,257</td>
<td>$ 972</td>
<td>$ 387</td>
<td>N/A</td>
</tr>
<tr>
<td>FTE Incr.</td>
<td>49</td>
<td>11</td>
<td>10</td>
<td>12</td>
<td>9</td>
<td>7</td>
</tr>
</tbody>
</table>

The revised street tree inventory estimate of 175,000 trees yields the following budget implementation plan for additional program costs for a five year cycle over five consecutive years (2005 Net $5,178,000.00):

<table>
<thead>
<tr>
<th>Budget</th>
<th>Total</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating:</td>
<td>$ 3,765</td>
<td>$ 554</td>
<td>$1,131</td>
<td>$ 928</td>
<td>$ 680</td>
<td>$ 472</td>
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<tr>
<td>*Revenue:</td>
<td>$ 512</td>
<td>$ 77</td>
<td>$ 154</td>
<td>$ 128</td>
<td>$ 93</td>
<td>$ 60</td>
</tr>
<tr>
<td>Net:</td>
<td>$ 3,253</td>
<td>$ 477</td>
<td>$ 977</td>
<td>$ 800</td>
<td>$ 587</td>
<td>$ 412</td>
</tr>
<tr>
<td>Capital:</td>
<td>$ 1,925</td>
<td>281</td>
<td>$ 731</td>
<td>$ 527</td>
<td>$ 386</td>
<td>N/A</td>
</tr>
<tr>
<td>FTE Incr.</td>
<td>30</td>
<td>3</td>
<td>9</td>
<td>7</td>
<td>6</td>
<td>5</td>
</tr>
</tbody>
</table>

* Revenue generated is based on potential revenue from Hydro, based on an estimated average of $50.63 per Hydro tree trimmed.

**Legal Implications**

While the City’s ability to successfully defend a claim depends on the particular fact situation, generally speaking, the longer the tree trimming cycle, the greater the risk of legal claims arising and the difficulty for the City to successfully defend such claims.
Program Service Level

The report recommendation implies:

- that the approved service level for the Street Tree Trimming Program will remain at a 5 year preventative trimming cycle within urban areas only and;
- that the available program funding (i.e. without program enhancement approval) supports the program performance at a 20 year trimming cycle within the urban areas of the former City of Hamilton and no preventative trimming works in other urban areas.

POLICIES AFFECTING PROPOSAL:

N/A

RELEVANT CONSULTATION:

All operating budget estimates reflect gross costs and potential program revenues are subject to the establishment of a service agreement with Horizon Utilities Corporation pending Council’s consideration of the revised STTP Enhancement.

CITY STRATEGIC COMMITMENT:

By evaluating the “Triple Bottom Line”, (community, environment, economic implications) we can make choices that create value across all three bottom lines, moving us closer to our vision for a sustainable community, and Provincial interests.

Community Well-Being is enhanced. ☑ Yes ☐ No
Public services and programs are delivered in an equitable manner, coordinated, efficient, effective and easily accessible to all citizens.
Partnerships are promoted.

Environmental Well-Being is enhanced. ☑ Yes ☐ No
Human health and safety are protected.
Consumption of all natural resources is reduced.
Air quality and water quality and quantity are protected.
Climate-related risks are managed; Greenhouse Gas emissions are reduced.
Ecological function and the natural heritage system are protected.
Consumption of energy is reduced; alternative energy and co-generation are supported.

Economic Well-Being is enhanced. ☑ Yes ☐ No
Investment in Hamilton is enhanced and supported.
A skilled, innovative and diverse workforce is attracted and retained.
Hamilton’s high-quality environmental amenities are maintained and enhanced.

Does the option you are recommending create value across all three bottom lines? ☑ Yes ☐ No

Do the options you are recommending make Hamilton a City of choice for high performance public servants? ☑ Yes ☐ No
CITY OF HAMILTON URBAN TREE INVENTORY

<table>
<thead>
<tr>
<th>Area Designation</th>
<th>Population</th>
<th>S.T.T Grids</th>
<th>Estimated Trees</th>
<th>Confirmed Number</th>
<th>Rd. Kilometres Centre Line</th>
<th>Avg. Trees per Lane Km.</th>
<th>% Correction- Based on New Trees Planted &amp; Field Count Survey</th>
<th>Final Extrapolated Calculations Based on all Corrective Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-Amalgamation City</td>
<td>331,121.00</td>
<td>118</td>
<td>68,000</td>
<td>65,715</td>
<td>1,070.10</td>
<td>61.41</td>
<td>14%</td>
<td>74,915</td>
</tr>
<tr>
<td>Amalgamated Suburban</td>
<td>124,194.00</td>
<td>60</td>
<td>232,000</td>
<td>37,945</td>
<td>617.90</td>
<td>61.41</td>
<td>163%</td>
<td>99,976</td>
</tr>
</tbody>
</table>

Total Municipal Trees Within 178 Urbanized Grids 174,711

The Forestry & Horticulture Section is one of the contractors for Horizon Utilities Corporation and we clear 1,100 Km. of Primary Line and 1,553 Km. of Secondary Lines within the 178 Urban Grids of the amalgamated City of Hamilton.

The total number of trees has been determined and confirmed using two methodologies, the first is based on a known number counted through the grid trimming cycle in the former City of Hamilton. The known trees per centre line kilometer of the 118 grids has been extrapolated to include the 60 grids in the urban outlying areas.

The second comparative method was to gather information on the number of known properties located within the 178 urbanized grids. Records indicate that 149,328 properties exist and 13% of these are corner lots which may have more than one tree. This statistic shows us that these properties are capable of supporting at least 168,741 trees.

A corrective percentage has been applied to the confirmed numbers in column "E", this factor is shown in column "H" in the chart above. Several components were considered to arrive at this amendment. The number of new plantings since the Autumn of 2004 and the physical counting of roadway trees in nine test areas was conducted. Sample testing in Ancaster, Glenbrok and Flamborough showed that the number of trees per centre line lane kilometer exceeded the actual known number within the former City of Hamilton. The average number of trees was found to be 87 more per centre line street kilometer.

23-Jan-06
The following chart illustrates the implementation plan for a 5 year cycle over 7 consecutive phases. These figures assume the revised street tree inventory of 175,000 (*2005 Net $5,178,000*)

<table>
<thead>
<tr>
<th>Budget</th>
<th>Total</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating</td>
<td>$3,765,000</td>
<td>$376,000</td>
<td>$1,004,000</td>
<td>$753,000</td>
<td>$753,000</td>
<td>$627,000</td>
<td>$126,000</td>
<td>$126,000</td>
</tr>
<tr>
<td>*Revenue</td>
<td>$512,000</td>
<td>$51,000</td>
<td>$134,000</td>
<td>$102,000</td>
<td>$81,000</td>
<td>$21,000</td>
<td>$21,000</td>
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<tr>
<td>Net</td>
<td>$3,253,000</td>
<td>$325,000</td>
<td>$870,000</td>
<td>$651,000</td>
<td>$546,000</td>
<td>$105,000</td>
<td>$105,000</td>
<td></td>
</tr>
<tr>
<td>Capital</td>
<td>$1,925,000</td>
<td>$193,000</td>
<td>$712,000</td>
<td>$516,000</td>
<td>$329,000</td>
<td>$105,000</td>
<td>$70,000</td>
<td>$0</td>
</tr>
<tr>
<td>Net Total</td>
<td>$5,178,000</td>
<td>$518,000</td>
<td>$1,582,000</td>
<td>$1,167,000</td>
<td>$980,000</td>
<td>$651,000</td>
<td>$175,000</td>
<td>$105,000</td>
</tr>
</tbody>
</table>

F.T.E Incr. 30 3 8 6 6 5 1 1

* Revenue generated is based on potential revenue from Hydro, based on an estimated average of $50.63 per Hydro tree trimmed.

The following chart illustrates the implementation plan for a 5 year cycle over 10 consecutive phases. These figures assume the revised street tree inventory of 175,000 (*2005 Net $5,178,000*)

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating</td>
<td>$3,765,000</td>
<td>$251,000</td>
<td>$501,000</td>
<td>$504,000</td>
<td>$627,000</td>
<td>$502,000</td>
<td>$376,000</td>
<td>$251,000</td>
<td>$251,000</td>
<td>$251,000</td>
<td>$251,000</td>
</tr>
<tr>
<td>*Revenue</td>
<td>$512,000</td>
<td>$36,000</td>
<td>$51,000</td>
<td>$67,000</td>
<td>$97,000</td>
<td>$66,000</td>
<td>$51,000</td>
<td>$36,000</td>
<td>$36,000</td>
<td>$36,000</td>
<td>$36,000</td>
</tr>
<tr>
<td>Net</td>
<td>$3,253,000</td>
<td>$215,000</td>
<td>$450,000</td>
<td>$437,000</td>
<td>$530,000</td>
<td>$436,000</td>
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<td>$215,000</td>
<td>$215,000</td>
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<td>$215,000</td>
</tr>
<tr>
<td>Capital</td>
<td>$1,925,000</td>
<td>$128,000</td>
<td>$193,000</td>
<td>$357,000</td>
<td>$421,000</td>
<td>$340,000</td>
<td>$193,000</td>
<td>$193,000</td>
<td>$100,000</td>
<td>$ -</td>
<td>$ -</td>
</tr>
<tr>
<td>Net Total</td>
<td>$5,178,000</td>
<td>$343,000</td>
<td>$643,000</td>
<td>$794,000</td>
<td>$951,000</td>
<td>$776,000</td>
<td>$518,000</td>
<td>$408,000</td>
<td>$315,000</td>
<td>$215,000</td>
<td>$215,000</td>
</tr>
</tbody>
</table>

F.T.E Incr. 30 2 3 4 5 4 3 3 2 2 2

* Revenue generated is based on potential revenue from Hydro, based on an estimated average of $50.63 per Hydro tree trimmed.