

**THE CORPORATION OF THE CITY OF WINDSOR  
OFFICE OF THE CITY ENGINEER- Parks Department**

**MISSION STATEMENT:**

*"Our City is built on relationships – between citizens and their government, businesses and public institutions, city and region – all interconnected, mutually supportive, and focused on the brightest future we can create together."*

<b>LiveLink REPORT #: 18079 SR2015</b>	<b>Report Date: November 27, 2015</b>
<b>Author's Name: Paul Giroux, City Forester</b>	<b>Date to Council: December 21, 2015</b>
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P &amp; R # 15-167

**To: Mayor and Members of City Council**

**Subject: Urban Forestry Plan to Reduce the Backlog in Forestry Services and a Return to a Preventative Maintenance Program**

**1. RECOMMENDATION: City Wide: ☒ Ward(s): \_\_\_\_\_**

THAT City Council **RECEIVE** this report for information, acknowledging the plan of the Parks Forestry Department to reallocate funds in the Forestry Capital budget to an Area and Cyclic Tree Maintenance Program, a City-wide Tree Inventory Project and the development of an Urban Forest Management Plan and to **INITIATE** a Request For Proposals for a City-wide Tree Inventory and a Urban Forest Management Plan to the satisfaction of the Manager of Purchasing and the City Solicitor.

**2. BACKGROUND:**

The City of Windsor Parks Department is responsible for the maintenance and care of approximately 70,000 street trees along the Right of Way and 30,000 trees within our Parks. City owned Natural Areas such as Peche Island and the Ojibway Complex are not included in these statistics. The Forestry Division consists of one Manager, two Supervisors and nine full time unionized staff. They are responsible for carrying out the day to day operations of managing the urban forest including tree trimming, tree removals, storm clean up, service requests inspections and tree planting. Many of these services are also contracted out to local tree care contractors in an effort to deliver the services in a timely manner. Tree removal contractors often get tasked with whole tree removal and support for storm damage clean up. City forestry crews operate at the highest standards in the profession while 7 of our 9 staff have their designation as Certified Arborists. They perform highly specialized work including tree assessments, tree removal and preventative tree health and maintenance trims. While our contractors also maintain high standards their varied work does not necessarily lead to the same certifications and standards in all cases.

In 2014, the Forestry Division received over 4,500 calls for service through Windsor's 311 Customer Service Department. These calls resulted in 3,800 inspections for the two supervisors. In 2014, Forestry staff and its contractors performed 3,900 trims, 600 tree removals as well as over 2,200 maintenance requests for storm damaged trees, broken tree limbs and brush pick up calls. This resulted in an average of 10 to 50 inspections per work day (depending on the season and number of storms) for the supervisors; and 10 to 25 trims, removals and other maintenance requests for the staff per day. This is very physically demanding work and it is demonstrated by the above that this is a very busy division of the city.

In 2015, the available budget for contracts was \$1,331,880; \$372,837 from the Operating Budget and \$959,043 in Capital dollars. The Capital funding was comprised of \$225,000 of 2015 Capital Budget dollars, prior years' unspent capital funds of \$234,043 and \$500,000 one-time, Enhanced Capital Funding. The enhanced funding was awarded in an effort to help reduce the current back log of forestry work.

Presently, the back log of forestry work still remains extensive, aggravated by challenges with tree service contractors unable to match contract performance expectations affecting our ability to guarantee service and reduce the backlog. Contractors are paid per tree however, the base tree numbers for the contract are rarely met and there is little recourse other than extending contracts and contract dollars to other service providers in an attempt to reduce the backlog. Currently, the waiting period for general tree trims is still between 12 to 18 months (approx 400 days).

### **3. DISCUSSION:**

Forestry remains committed to reducing the back log of forestry work and to restore a more timely service window. We also remain committed to protecting and enhancing the Urban Forest, through the continuation of the planting and watering of trees, routine inspections, the trimming of trees, the removal of high risk trees as well as other Arboriculture Best Management Practices.

The Forestry Department is highly tasked with scheduling and the assigned work, generated from a City data base and the Forestry clerk, keeps the crews on task.

The vision for the Forestry Division is to be a leader in the field of Urban Forestry through a renewed commitment in Best Management Practices. The following is list of services, products and action items that have been identified as key elements that will help us achieve this vision.

#### **Area Trims or Cyclical Tree Maintenance**

The industry standard for the care of municipal owned Right of Way trees is to conduct area trims or practice cycle pruning. This refers to the trimming of city owned trees on a routine and rotational schedule. The industry standard is to trim city owned Right of Way trees every 5 to 8 years, depending on the condition, diversity and age of the Urban Forest. For Windsor's Urban Forest, we are targeting a trim cycle of 7 years. To accomplish this, the City will be divided into 7 'Areas' and every year, 1/7<sup>th</sup> of the City owned trees will be trimmed for health, safety and to promote sound structure. By the 8<sup>th</sup> year, the cycle will have repeated itself and trees will be set on a trajectory for optimal health, structure while mitigating risk at the same time.

Regularly maintained trees lead to optimal health and longevity and reduce the amount of damage claims to private property. This preventative maintenance will also result in a significant

reduction of service requests, allowing for our resources to be directed to other pressing concerns. Cyclical Tree Maintenance is also the framework for 'Routine Inspections' which is critical for health and safety concerns and reducing liability risks.

Due to the unforeseen 'natural disaster' of the Emerald Ash Borer and the financial toll that this invasive pest put on the city, Windsor has not awarded an "Area or Cycle Trim Contract" in almost 10 years. This lack of preventative maintenance has had a negative impact on our city owned trees, has increased the number of tree related damage claims and has had a major impact on our current back log of tree work. Returning to area trims over time will reduce the number of requests for general forestry services.

The goal is to catch up and have the back log in check by the end of 2017. Two new Forestry positions were added in the summer of 2015 (following approval in the 2015 budget process) which will help City Crews accomplish more work orders per day. There are also two contractors working on the City 'Trim Contract' simultaneously. We are targeting 2018 as the year we catch up the backlog sufficiently to begin our preventative maintenance schedule and Area Trim.

### **Routine Inspections**

Currently, tree inspections are made through the creation of a service request, when a home owner has a concern regarding the city tree in front of their residence. A Forestry Supervisor will inspect the tree for health, structure and risk and if maintenance is required, a work order is created. This practice is merely reactive and inhibits our staff from conducting preventative maintenance and regular inspections of City owned trees.

Other Municipalities such as the City of Ottawa, use a '7 Year Area Trim Program' as their time or opportunity to inspect all the trees in the area to be trimmed. They use City staff 'Tree Inspectors' to walk the streets every fall and winter inspecting trees for major structural issues and risk while creating their work orders for the 'Area Trim'.

We are proposing a multi-faceted approach to regular and routine tree inspections which will involve surveying 1/7th of the city's Right of Way Trees every year:

- An existing unionized Forestry Assistant position to survey a defined area of the city and to identify high risk trees,
- Forestry Supervisors to survey the upcoming 'Area Trim' zone for high risk trees and, as time allows, work with the Forestry Assistant to assess the city owned trees on a systematic schedule,
- The Parks Operations Division has initiated a parks inspection and risk assessment process utilizing staff on 'Modified Work'. Forestry will utilize this resource to assess Parks and streetscapes for dead trees and trees with obvious structural defects.

As an additional measure to help mitigate risk, Forestry will work with Operations Technical Support to assess the use of the summer students performing right-of-way sidewalk inspections as another set of eyes to help report obvious dead trees on the right-of-way to Forestry staff.

## **Updated Tree Inventory**

Data regarding the City's 70,000 street trees located along the Right of Way is being housed in one of the City's computerized management maintenance programs (CMMP). Currently, the data collected includes the species of the tree, its size, the year it was planted and will provide a history of the trees maintenance record.

There are a number of concerns with the existing inventory. It has been identified the inventory has not been vigorously maintained. As a result, much of the data in the inventory, such as tree size, is out of date. As well, it is also lacking other key data fields such as the health of the tree, the structure ratings of the tree and its GPS coordinates, which is helpful in determining the ownership of the tree (public or privately owned).

A new tree inventory for all Right of Way trees is critically needed. Creating this inventory would be contracted out to an experienced urban forest consulting company that has a proven reputation in providing inventory updates and management plans for other municipalities. Their Certified Tree Risk Inspectors, using high resolution aerial photography on hand held tablets, would survey all city owned trees within the right of way. They will capture all necessary data (ie. tree species, diameter size, GPS coordinates, health and structure ratings) thus providing the Forestry Department with the necessary tool to assign risk and an action plan.

As part of the renewed focus on asset management in both the Parks and Facilities areas, it will be explored to see if the current database or a different database is needed to meet Forestry's needs. Forestry has explored options with the Geomatics Department to include the tree information as part of their geographic information systems (GIS) mapping.

### **An increase in Tree Removal Contract Work (based on dollars already available)**

The data received from the tree inventory, will first be used to identify the City's most problematic trees. The Forestry Department will systematically deliver a program that has these trees removed in a timely fashion in an effort to reduce future risk.

Preliminary plans, outlined in the financial section of this report, are to remove these high risk trees within a 4 year period using both Operating and Capital resources increasing the scope and expectation of contracted services.

### **An Urban Forest Management Plan**

The data received from the tree inventory will also be incorporated into the creation of the City's first 'Urban Forest Management Plan' which is a document that will help define and guide our urban forestry objectives. Urban forest management plans are strategic management documents that help guide a city over a set time period to accomplish short, medium and long term goals for the City's urban forest. They are proactive management plans that enable staff to respond effectively to environmental and regulatory change, complexity and unforeseen events.

These plans outline the description of the urban forest in each community with detailed explanations of the extensive benefits that trees provide urban communities. There would be public consultation so that the vision of the plan includes the community's needs and expectations of our urban forest and so that they can be realized.

These plans will outline the outcomes needed to achieve our urban forest vision along with a comprehensive set of management solutions and a description of the tools and methods required to implement them. The plan would likely describe new technologies using GIS in an effort to create efficient management options. This urban forestry plan is a 'stand alone' document and is not an element of the Parks Master Plan.

#### **4. RISK ANALYSIS:**

There is a significant risk in not conducting preventative maintenance of city owned trees. Preventative maintenance in Arboriculture is best accomplished through the practice of Area Trims and routine tree inspections. Preventative tree maintenance is critical in maintaining the health and longevity of city owned trees, while reducing the risk of property damage, health and safety concerns and the risk of liability.

The mitigating strategy is to 'treat' by reducing the back log of forestry work as quickly as possible and be in a position to return to a preventative maintenance schedule (ie. area trims) by the year 2018. A schedule for routine inspections will also start to occur in 2016 as explained previously in this section above.

The Executive Director of Parks will be responsible for ensuring the delivery of this preventative maintenance plan.

#### **5. FINANCIAL MATTERS:**

The 2015 annual operating budget for Tree Maintenance contracts is \$372,837. In addition, the City has a Tree Planting Reserve Account collected from developers for subdivision tree planting. This reserve account was used to fund the elimination of dead and dying trees as a result of the Emerald Ash Borer. Repayment to the reserve account has been through annual Capital funding, with the final instalment identified in the 2016 Capital Budget, which will bring the 2016 beginning balance to approximately \$960,000. Tree Maintenance Backlog funding continues to be identified in the 5-year Capital Budget.

Forestry has set out a financial plan to accomplish the goals of eliminating the backlog and to establish a 7-year cycle for City Area Trims. This will ensure that the entire City tree inventory will be inspected and maintained on an industry ideal timeline.

The immediate concern for Forestry is getting the tree maintenance backlog caught up, a tree inventory completed by a consultant, an Urban Forest Management Plan to be created and the Cities highest risk trees to be removed. Although these are the priorities of the department, this is expected to take the next five years to accomplish due to the available funding and to the amount of work required.

The following table shows the forestry plan for contract work and the funding source, for the next five years, should Council approve the 2016 Capital Budget and assuming the 2017-2020 identified capital remains as approved in principle in the current 5-year plan.

<b>CAPITAL FUNDING</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>Total</b>
Annual Capital	\$210,000	\$250,000	\$710,000	\$500,000	\$500,000	\$2,170,000
Prior Years' Capital Carry-forward	\$459,043	\$ -	\$ -	\$ -	\$ -	\$459,043
Enhanced Capital Funding	\$500,000	\$ -	\$ -	\$ -	\$ -	\$500,000
	<b>\$1,169,043</b>	<b>\$250,000</b>	<b>\$710,000</b>	<b>\$500,000</b>	<b>\$500,000</b>	<b>\$3,129,043</b>
<b>PLANNED CAPITAL EXPENDITURES</b>						
Tree Inventory Consult/Program	\$200,000					
Tree Trimming Contract	\$150,000					
Urban Forest Management Plan		\$150,000				
*Identified Removals		\$275,000	\$275,000	\$275,000	\$275,000	
City Area Trim			\$500,000	\$500,000	\$500,000	
	<b>\$350,000</b>	<b>\$425,000</b>	<b>\$775,000</b>	<b>\$775,000</b>	<b>\$775,000</b>	<b>\$3,100,000</b>
<b>OPERATING FUNDING</b>						
Annual Operating	\$372,837	\$372,837	\$372,837	\$372,837	\$372,837	
	<b>\$372,837</b>	<b>\$372,837</b>	<b>\$372,837</b>	<b>\$372,837</b>	<b>\$372,837</b>	<b>\$1,864,185</b>
<b>PLANNED OPERATING EXPENDITURES</b>						
Tree Trimming Contract	\$100,000					
Tree & Stump Removals	\$200,000	\$200,000	\$200,000	\$200,000	\$200,000	
Stumping for City Crew Removal	\$45,000	\$45,000	\$45,000	\$45,000	\$45,000	
*Identified Removals		\$100,000	\$100,000	\$100,000	\$100,000	
Misc. Contract Expenditures	\$27,837	\$27,837	\$27,837	\$27,837	\$27,837	
	<b>\$372,837</b>	<b>\$372,837</b>	<b>\$372,837</b>	<b>\$372,837</b>	<b>\$372,837</b>	<b>\$1,864,185</b>

Tree planting is also a large part of the Forestry responsibilities, with an annual cost of \$242,000. This expense has also been included in the financial plan. For budget reasons, the City Tree Planting commitment will be reduced for the next five years, to a budget maximum of \$142,000, which will allow the department to focus their contract dollars on eliminating the tree maintenance backlog and establishing a city-wide, rotating, area trim program.

#### OPERATING FUNDS

	<b>Current Plan</b>	<b>Proposed Reduced Plan First 5 Years</b>
<b>City Regreening Program 600 trees/yr</b>		
Tree Harvesting from Nursery @ \$30/tree	\$ 18,000	\$ 10,000
Larger Tree Purchases @ \$100/tree	\$ 20,000	\$ 12,000
Planting	\$ 68,000	\$ 40,000
Watering	\$ 88,000	\$ 52,000
Replacement trees for Nursery	\$ 18,000	\$ 10,000
Nursery Planting	\$ 15,000	\$ 9,000
Nursery Care & Maintenance	\$ 15,000	\$ 9,000
	<b>\$ 242,000</b>	<b>\$ 142,000</b>

For the next five years, Forestry would like to use the Tree Planting Reserve Account for the reduced, annual tree planting program costs. The table below shows the declining balance of the

Reserve Account with \$142,000 being used each year by the department; however this table does not include the annual development charges that will be deposited to the account which will result in the actual balance of the reserve account to be higher than this projection. Over the past few years, net activity in this account, related to development, has been in the range of approximately \$50,000 annually, however this does fluctuate.

<b>TREE PLANTING RESERVE ACCOUNT FUNDING</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>
Annual Beginning Balance	\$960,000	\$818,000	\$676,000	\$534,000	\$392,000
Annual Tree Replanting Costs	\$142,000	\$142,000	\$142,000	\$142,000	\$142,000
Reserve Balance at Year End	<b>\$818,000</b>	<b>\$676,000</b>	<b>\$534,000</b>	<b>\$392,000</b>	<b>\$250,000</b>

The plan for the next five years will NOT require additional funding. The above assumptions provide sufficient funds for a realistic work plan identified below.

Beginning in 2021, the department will no longer access the reserve account for the annual tree planting program. The carry-forward capital dollars and the enhanced capital funds will now be fully spent. A budget increase of \$115,000 in operating dollars in the year 2021 as well as an ongoing annual capital commitment of \$500,000 in the year 2021 is required to continue with the now established rotating 7-year City tree maintenance schedule and the tree planting program.

The Forestry plans for 2021 and beyond:

	<b>Work</b>	<b>Cost</b>	<b>Funding Source</b>
<b>2021</b>	City Area Trim 4	\$ 500,000	Capital
	Tree & Stump Removals	\$ 200,000	Operating
	Stumping for City Crew Removal	\$ 45,000	Operating
	Replanting 800 trees	\$ 242,000	Operating
<b>2022</b>	City Area Trim 5	\$ 500,000	Capital
	Tree & Stump Removals	\$ 200,000	Operating
	Stumping for City Crew Removal	\$ 45,000	Operating
	Replanting 800 trees	\$ 242,000	Operating
<b>2023</b>	City Area Trim 6	\$ 500,000	Capital
	Tree & Stump Removals	\$ 200,000	Operating
	Stumping for City Crew Removal	\$ 45,000	Operating
	Replanting 800 trees	\$ 242,000	Operating
<b>2024</b>	City Area Trim 7	\$ 500,000	Capital
	Tree & Stump Removals	\$ 200,000	Operating
	Stumping for City Crew Removal	\$ 45,000	Operating
	Replanting 800 trees	\$ 242,000	Operating

It is imperative to continue with the 7 Year Area Trim Cycle, and to keep up with the requirements of the Urban Forest, so that a back log like the one we are currently experiencing, never becomes an issue again.

## **6. CONSULTATIONS:**

Consultations were undertaken with Administration staff of Parks, Facilities, Legal Services, Real Estate & Risk Management, Infrastructure and Geomatics along with the Urban Forestry Sub Committee of the Regional Public Works Commissioners of Ontario.

## 7. CONCLUSION:

The protection of the urban forest has never been more important to our well being. Trees provide us with many social, health and psychological benefits and provide cities with numerous environmental good and services; from storm water retention to the cooling effect that trees have on our neighbourhoods. Like any city owned asset, trees must be protected and maintained regularly, not unlike roads, sewers and light standards.

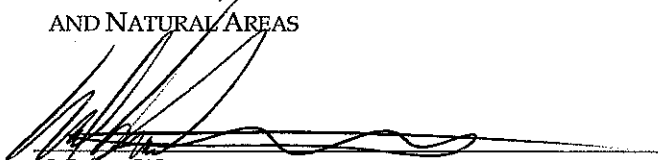
We are committing to a renewed vision of our urban forest and the plan set forth in this report will not only reduce the back log within a reasonable time frame, but will also reduce the likelihood of future tree related damage claims and risk while protecting one of the cities' most valuable asset, our trees.



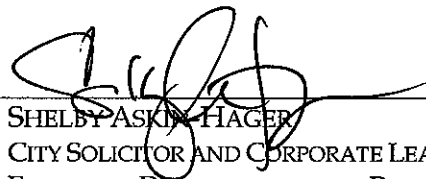
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CITY FORESTER, MANAGER OF FORESTRY  
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PHIL ROBERTS  
EXECUTIVE DIRECTOR PARKS



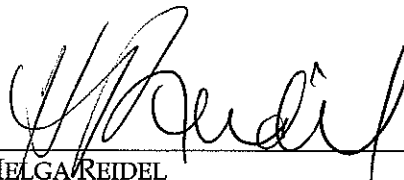
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### APPENDICES:

### DEPARTMENTS/OTHERS CONSULTED:

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<b>NOTIFICATION :</b>				
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