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**PRESENTATION TO EAST YORK COMMUNITY COUNCIL
TE27.14 - Application to Remove a Private Tree - 55 Dixon Avenue
Hearing September 9 2021 at 10:30 am (Ward 19)**

FROM: Erica L. James, Barrister and Solicitor

Black walnut trees have been identified for special consideration.

HISTORY

The Report for Action PE17.2 pertaining to Black Walnut Trees in Toronto (**attached as Exhibit A**) specifically singles out the Black Walnut tree and assigns the decision as to the removal of a healthy black walnut tree to the Community Council.

That it has been necessary to single out this particular specie of tree, the Black Walnut, and invite appeal to the Community Council, is significant. It represents recognition of special considerations arising from the **toxic chemical Juglone**, requiring careful consideration of the specific and individual circumstances of the location, space, proximity to habitation and play areas, and its impact on the immediate environment.

SCIENTIFIC RESEARCH

The dangers of the chemical, Juglone, are recognized in the Director's report **PE17.2** attached as **Exhibit A**. Since that report was completed, the dangers have been further extensively researched. I urge you to review the summary of **scientific literature** in **Exhibit B**. The Director, in his Report for Action submitted for this hearing, suggests that removing all the Black Walnut toxic particles as and when they fall in the garden to avoid toxicity for children and pets, is akin to raking leaves, and other clean-up gardening chores. This is not the case: it trivializes the serious, unceasing impact of living in immediate proximity to a noxious tree.

PRACTICAL CONSIDERATIONS OF URBAN SETTING

The reality is that removal of each nut, leaf and piece of debris before any child can venture into the garden (and the adjoining garden) is an onerous and fearsome responsibility. It requires ongoing diligent monitoring before and during outdoor play. Comparing this unnerving chore to a seasonal garden clean up, or the falling of edible fruits, grossly trivializes the burden on parents anxiously limiting the chemical toxicity in the environment for their children and pets.

BEST PRACTICE

Even since the Report **PE17.2** (Exhibit A), the scientific literature has exploded, and the dangers of the tree have been researched and reported. Some relevant research literature and studies are included in **Exhibit B**. This research supports the fact that while the cultivation of the native black walnut tree is of importance, we must, at the same time, recognize that this tree is properly cultivated in its natural woodland surroundings where it can thrive and propagate, and not in a heavily populated, space-limited, urban garden, where it presents a real and immediate health hazard and absent propagation.

SUMMARY

The Director Urban Forestry, Parks and Forestry and Recreation in his Summary for this hearing, does admit that this tree at 44 Dixon Ave has already suffered “minor root damage” from neighbouring construction. The Director further recognizes that this tree specie does emit the toxic chemical, and that it inhibits growth of surrounding trees and plants. These are issues that increase as the roots and canopy spread in this restricted urban setting. This is not an appropriate environment for this specie of tree and the tree presents a hazard.

The Director’s recommendation for this Application is that if Council permits the removal of this tree, it be replaced with 5 new trees, at least three of which to be on the subject property. This proposal is also strongly supported by the Property owner as well. This important native tree should be nurtured in its proper and natural environment where it is enabled to flourish and propagate in a safe setting.

I submit that this is the proper circumstance to take such action: to replace this tree that is a danger, toxic and inhibiting of surrounding growth. Community safety is also an ongoing concern. We remove trees that are a hazard. This tree is in a confined urban setting in which its characteristics present a real and acknowledged toxicity, it is harmful to people and pets, it cannot propagate, and it threatens surrounding vegetation. Appropriate replacement trees, suited to this urban location will provide long term benefits to the community, the environment, and the tree canopy.

I urge this Council to permit the removal of this black walnut tree, and to order its replacement with trees which will thrive in this environment and enable surrounding plant diversity.

ATTACHMENTS:

- Exhibit A: **The Report for Action PE17.2** (2017) pertaining to Black Walnut Trees in Toronto by General Manager, Parks Forestry and Recreation Division
- Exhibit B: Summary of recent Scientific Research into Black Walnut Tree toxicity

Black Walnut Trees in Toronto

Date: February 7, 2017

To: Parks and Environment Committee

From: General Manager, Parks, Forestry and Recreation Division

Wards: All

SUMMARY

The purpose of this report is to respond to a request from the Parks and Environment Committee that the General Manager, Parks, Forestry and Recreation explain the effects of exempting black walnut trees (*Juglans nigra*) from protection under the City's tree bylaws with a focus on both community safety and canopy impacts.

RECOMMENDATIONS

The General Manager of Parks, Forestry and Recreation recommends that:

1. The Parks and Environment Committee receive this report for information.

FINANCIAL IMPACT

There are no financial implications resulting from the adoption of this report.

DECISION HISTORY

At its meeting of November 17, 2016, the Parks and Environment Committee requested that the General Manager of Parks, Forestry and Recreation report to the February meeting of the Parks and Environment Committee on the effects of exempting black walnut trees from the City's tree bylaws, with a focus on both the effects of community safety and the greater tree canopy.

<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2016.PE15.7>

COMMENTS

Urban Forestry receives requests on a regular basis for providing rationale for the regulation of preserving specific species of trees under *Chapter 813 of the Municipal Code*. The following concerns related to black walnut trees have been raised by property owners and applicants when applications for tree removal are submitted: fear of being struck and injured by falling walnuts, having an allergic reaction to walnuts, and not being able to grow other plants in proximity to black walnut trees.

Information was requested from the City of Toronto Corporate Finance, Insurance and Risk Management group as to whether the City had ever received a claim as a result of a falling walnut. Staff advised that they received one claim for property damage in September 2014. The claim was not paid and the file was subsequently closed. Historical claims experience suggests the risks associated with falling walnuts do not pose a significant exposure for the City.

Parks, Forestry and Recreation has consulted with Toronto Public Health who indicated that:

1. There is no evidence to support the removal of a nut-bearing tree to mitigate risk from an allergic response.
2. Anaphylaxis is highly unlikely to occur except through ingestion of nuts.
3. The allergen is in the nut itself and accidental exposure is not likely since the nut is covered by the shell.
4. Other measures (which are simpler and less expensive than tree removal) can mitigate the risk such as cleaning up tree nuts in play areas or teaching children to avoid tree-nuts.

Black walnut trees produce a chemical called juglone to reduce competition with other plant species and improve their chances of survival. This process is also known as allelopathy which is defined as the chemical inhibition of one plant (or other organism) by another, due to the release of biochemical substances into the environment acting as germination or growth inhibitors. Some plants are sensitive to juglone and will not survive growing in close proximity to black walnut trees. Reducing exposure of juglone to sensitive plants can be achieved by: collecting fallen leaves and fruit thereby reducing accumulation and decomposition into the soil, adding organic matter, aerating the soil and raising garden beds beneath the canopy of black walnut trees.

There are also many native species of trees, shrubs and perennial options that are tolerant of juglone. The Ontario Ministry of Agriculture, Food and Rural Affairs website provides helpful information for gardening under walnut trees.

Many of the tree species that grow in Toronto's urban forest produce fruit that some residents consider a nuisance. If black walnut trees are exempt from protection due to falling walnuts or the production of a natural allelopathic chemical, a case could be made to exempt other tree species based on their falling fruit or other similar characteristics. Every large growing tree has some degree of maintenance associated with it including removal of leaves, flowers, fruit, twigs and small branches. The benefits

that trees afford to a community far outweigh the maintenance inconvenience associated with falling debris.

Currently, an applicant may apply for permission to remove a black walnut tree under the provisions of the City's tree bylaws. If authority within bylaw provisions to issue a permit for tree removal is not possible, the applicant may appeal to the appropriate Community Council. This practice allows the applicant the opportunity to address their specific concerns and provides an opportunity for debate and a reasonable decision as to the merits of a specific application. If there is a perceived danger associated with nuts falling from a specific black walnut tree, or other concerns with the tree, it can be dealt with at Community Council and it is recommended that this process remain in place. There are always exceptions, and the tree bylaws in their current form have provisions to deal with those exceptions.

The intention of the City's various tree protection bylaws is to prevent the unnecessary removal of healthy trees. However, in an urban environment, there are instances where tree removal is required. The bylaws have delegated provisions included to deal with many of these situations, however, there are always exceptions or unforeseen circumstances that are not specifically addressed. These situations are dealt with through the bylaw appeal process in which members of City Council consider the unique circumstances of a particular situation and determine whether or not tree removal is necessary.

The black walnut is a large-growing, long-lived native tree that is resistant to insect pests and disease in Toronto's urban forest. Providing a species specific exemption would have a detrimental effect on the City's ability to preserve, protect and grow the urban forest and tree canopy. The existing bylaw provisions allow for an appeal of a decision by staff denying removal of a healthy tree. This appeal process to Community Council is an effective means of addressing situations where residents express a community safety concern related to a healthy black walnut tree.

CONTACT

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SIGNATURE

Janie Romoff
General Manager, Parks, Forestry and Recreation

Table 1: Details and descriptions highlighting dangers of Black Walnut trees to humans and animals

#	Subject / Title	Description	Source
1	Walnut Toxicity	“Husks of fallen walnuts can become toxic to livestock, and lethal to dogs if ingested due to a mycotoxin called 'Penitrim A', which is produced by Penicillium mould. Therefore, walnut nuts showing symptoms of decomposition, such as a brown or black rotten appearance in the husks, may leak toxin into the kernels and are not fit for human consumption.”	www.omafra.gov.on.ca . Ontario Ministry of Agriculture, food and Rural Affairs
2	Effects of intravenous juglone in the dog	“Histopathologic changes in lungs and liver support the view that juglone is toxic to the cell membrane, increasing capillary permeability.”	Toxicol, Volume 6, Issue 2, October 1968, Pages 99-102. James N. Boelkins, Lloyd K. Everson, Theodore K. Auyong https://www.sciencedirect.com/science/article/abs/pii/0041010168900263
3	Black Walnut Hull Side Effects	“The active compound in black walnut is juglone. While this substance is found in all parts of the tree, according to Purdue University's Department of Horticulture, the fruit, roots and hulls contain the highest concentrations. The antimicrobial properties of this natural chemical that fights parasites and fungi also make it toxic . In fact, juglone is also used as a pesticide . According to the University of Georgia, Warnell School of Forestry & Natural Resources, the effects of juglone on humans are similar to cyanide . The toxicity of juglone is so high that very small amounts can cause illness, sedation or even death for humans and animals. ”	www.livestrong.com “Black Walnut Hull Side Effects” by Karyn Maier, reviewed by Claudia Thompson, PhD, RD. 18 September 2019
4	Your Black Walnut tree is out to get you	“Black walnuts are valuable as shade and timber trees. They produce delectable nuts, too. But if your black walnut overhangs your garden , your tree may be out to get you. The fruit, leaves and roots of black walnut trees contain a chemical, juglone, that can injure other plants. Ingesting even a small amount of pure juglone can cause a serious poisoning effect in humans. Inside the tree, juglone is a clear liquid (called prejuglone) that's nontoxic. If the tree cells that contain this prejuglone are damaged, cut, or injured, it is immediately oxidized into its toxic form.”	www.newswire.caes.uga.edu Kim Coder, College of Agricultural & Environmental Sciences UGA Cooperative Extension. 5 June 1999

#	Subject / Title	Description	Source
5	Guide to poisonous plants: Black Walnut	“Fallen walnuts that are moldy (Penicillium spp.) can contain the mycotoxin Penitrem A that is poisonous to dogs and other animals that eat the moldy walnuts.”	Colorado State University https://csuvth.colostate.edu/poisonous_plants/Plants/Details/69
6	Black Walnut	Toxicity: Toxic to Dogs	American Society for the Prevention of Cruelty to Animals (ASPCA) https://www.asPCA.org/pet-care/animal-poison-control/toxic-and-non-toxic-plants/black-walnut
7	Why Black Walnuts Can Cause Your Hands to Be Stained and Blistered — and How to Find Relief	<p>The black walnut, while offering a bolder flavor many like, also contains a toxin that’s not only deadly to plants, but can also cause skin irritation in humans.</p> <p>Black walnut trees produce a toxic chemical called juglone, a chemical so strong it can damage and even kill off vegetative growth around these trees and is blamed for issues in horses who are exposed to black walnut shavings. And juglone can have an unexpected and unpleasant consequence for humans who come into contact with it when hulling the walnuts or even when gardening nearby.</p> <p>“The juglone causes an irritant reaction,” says Dr. Anthony, “and the juglone does two things. It causes the production of a chemical that binds to the skin and has this dark coloring, almost black.”</p> <p>On top of that, he says, is the irritant action of juglone which can cause pain, itching and severe blistering, and unexpected torment.</p>	Cleveland Clinic - 2 November 2020 https://health.clevelandclinic.org/why-black-walnuts-can-cause-your-hands-to-be-stained-and-blistered-and-how-to-find-relief/
8	10 SERIOUS SIDE EFFECTS OF BLACK WALNUT	<p>9. Skin Rashes:</p> <p>When applied topically, black walnut could result in skin rashes. This again is due to the chemical compounds found in the hull of the nut that irritates the skin, leading to red-colored rashes on the affected area. According to the Allina Health website, the rashes are itchy and cause skin inflammation.</p>	https://skintreatmentz.blogspot.com/2015/05/10-serious-side-effects-of-black-walnut.html?m=1

#	Subject / Title	Description	Source
9	Black Walnut Poisoning in Dogs	<p>Poisoning of canines and horses by the black walnut is well documented. Though it is most commonly thought that the nut, when subjected to mold, is the toxic component of the tree studies have shown that eating wood from the black walnut tree can cause poisoning in dogs as well.</p> <p>Canines who ingest moldy husks and nuts from the black walnut tree are in particular danger because the mold is a <u>potent fungal neurotoxin</u>.</p> <p>Pet owners need to be aware of the dangers of this tree; ingestion of the wood or of the nuts and shells can result in a <u>lethal toxicity to canines</u>.</p> <p>The black walnut tree is thought to be <u>one of the top 5 trees poisonous</u> to large animals.</p> <p>Dogs may show the following symptoms after ingestion of the black walnut wood or nut.</p> <ul style="list-style-type: none"> - Panting - Restlessness - Excess salivation - Vomiting - Incoordination - Tremors in the muscles - Fever - Hyperresponsiveness to stimuli - Seizures - <u>Liver damage</u> (signs could be jaundice, abdominal pain, and fatigue) - <u>Death</u> <p>Toxicity can result from ingestion of the wood, nut, husks, and shells. Typically it is thought that the main source of poison is the mold that develops after a rainy period.</p> <p><u>Buried walnuts can become available for consumption by dogs at any time of year</u> but spring is thought to be the most problematic time.</p> <p><u>Black walnut mold is common in shady, wet areas.</u></p>	<p>www.wagwalking.com/condition/black-walnut-poisoning?page=2</p>