



## **Questions and Answers Springhurst Park – Remediation Project**

### **Q1 – What was the historical use of this site?**

A1 – The City of Ottawa properties located at 24 Brunswick Street and 160 Lees Avenue were formerly used as a waste disposal site known as the former Lees Avenue (Old Armoury) Landfill. The former landfill was identified in Phase I of the City's Old Landfill Management Strategy (OLMS) which was submitted to City Council on November 24, 2004. The Phase I OLMS study indicated that the former Lees Avenue landfill was operational between 1906 and the mid-1930s and that landfill waste included garbage, cinders and ash. A portion of the ash and cinder fill material was likely derived from a City of Ottawa incinerator which operated between 1913 and 1921 on what is now 200 Lees Avenue.

### **Q2 – What environmental investigations have been completed at the site?**

A2 - Numerous environmental investigations were completed on the property at 160 Lees Avenue in the early to mid-1990s at the time it was acquired by the Regional Municipality of Ottawa-Carleton (RMOC) for the future Alta Vista Transportation Corridor link. An Environmental Management Plan (EMP) was prepared for the site and approved by the Ontario Ministry of the Environment (MOE) (now called the Ministry of Environment and Climate Change [MOECC]) in 1996. Subsequent to the approval of the EMP, environmental work completed at the site included remediation of a portion of the property impacted with coal tar, installation of a passive methane venting system, and placement of a clean soil cap over the majority of the property to limit exposure to the ash, cinders and garbage present across the site.

The City-owned property known as Springhurst Park (24 Brunswick Street) was investigated in 2005 as part of the second phase of the OLMS study to determine if there were potential human health risks associated with the former landfill site. The data gap investigation included collection of surface soil samples for metals and polycyclic aromatic hydrocarbons (PAHs); surface water samples from the Rideau River for metals and general water chemistry parameters; analysis of groundwater for metals, volatile organic compounds (VOCs), PAHs and general water chemistry parameters; and evaluation of methane gas. The investigation concluded that there were no immediate human health risks associated with the former landfill and no further studies were recommended at that time.

In recent years, a number of additional investigations have been conducted at Springhurst Park in support of various proposed park upgrades. The most recent investigation completed in September 2015 included advancement of 1 m deep boreholes on a 20 m grid pattern over the entire park site. These recent assessments identified near surface soils (<0.5 m below ground

surface) with PAHs and/or metals in excess of the updated 2011 MOECC site condition standards for parkland land use.

As a result of the recent findings, the City's Environmental Remediation Unit (ERU) is planning to implement risk management measures at the park which will include removal of the upper 0.5 m of soil, and placement of a geotextile to demarcate the bottom of the soil removal. Clean imported soil will be placed above the geotextile. This will ensure that Springhurst Park has a similar clean soil cap to the one already in place on the adjacent City land at 160 Lees Avenue.

### **Q3 – What types of contaminants were found at the site?**

A3 – Recent environmental investigations completed at Springhurst Park have identified concentrations of polycyclic aromatic hydrocarbons (PAHs) and metals at concentrations in excess of the current MOECC standards for parkland use and the Site Specific Target Levels (SSTLs) developed for the site as part of a Human Health Risk Assessment (HHRA).

PAHs are a group of more than 100 chemicals that are produced during the incomplete burning of fuels, garbage or other organic substances such as tobacco, plant material or charbroiled meats. PAHs are also contained in asphalt, crude oil, coal, coal tar pitch, creosote and roofing tar, and are found throughout the environment in the air, water and soil. They can occur in the air, attached to dust particles, or as solids in soil or sediment. Metals found at concentrations in excess of the SSTLs developed for the site include antimony and lead. The main source of the PAHs and metals at Springhurst Park appears to be the historic landfilling activities which occurred on the site.

### **Q4 – Why are PAHs and metals in soil a potential health risk?**

A4 – PAHs and metals can be harmful to human health under some circumstances. Several of the PAH compounds are potential cancer-causing agents and benzo[a]pyrene is a known carcinogen. PAHs can also be skin irritants.

Everyone is exposed to small amounts of PAHs and metals through air, soil, household dust, food, drinking water and various consumer products. In order for PAH and metal contaminated soil to become a hazard, there must be direct contact with or disturbance of the contaminated soil. Appropriate measures to prevent contact are to ensure that adequate groundcover (e.g., grass, patio, etc.) is in place so that the ground surface is not bare soil.

The effects of PAHs and metals will depend on the extent of exposure (length of time, etc.), the amount one is exposed to (or concentration), whether exposure occurs via inhalation, ingestion or skin contact, age, and pre-existing health conditions. Children are more susceptible to PAH and metal exposure as they tend to play on the ground surface and may consume small amounts of soil due to their frequent hand-to-mouth activities.

It should be noted that although PAH and metal contamination has been identified in the soil, direct contact or disturbance of the soil must occur in order for the risks above to occur. If such

exposures have occurred, blood and urine tests can verify whether there is a reason for immediate concern.

#### **Q5 – Does the contamination currently pose a human health risk?**

A5 – A Human Health Risk Assessment (HHRA) has been completed to assess the potential human health risks associated with the elevated PAHs and metals found in the soil. The HHRA identified a risk estimate associated with direct contact to PAHs in soil that was greater than the level used by the MOECC to denote a potential unacceptable risk (i.e., 1 in 1,000,000 or  $1 \times 10^{-6}$ ). However it should be noted that the exposure risk did not exceed the benchmark established by Health Canada of 1 in 100,000 ( $1 \times 10^{-5}$ ). The risk estimate is based on a number of conservative assumptions regarding the duration and intensity of exposure and that actual risks are likely to be lower than those estimated in the HHRA. The remedial program to be implemented at the site will further reduce the level of risk at the site by removing all shallow soil and limiting exposure to the remaining soil below.

Risk has been mitigated around the play structure areas as they were constructed over a geotextile cloth which prevents mixing or contact between the imported sand/wood chips and the underlying soil at the site.

#### **Q6 – What is the City’s remedial action plan for the contaminants at Springhurst Park?**

A6 – Remediation of the site will focus on preventing direct contact with the soils and will involve removal of shallow soil to a depth of 0.5 metres across the site with the exception of those areas previously remediated or that already have appropriate barriers in place. The work area will include all of the park property at 24 Brunswick Street, and the west portion of 160 Lees Avenue where the existing soil cap installed in the late 1990s was tapered to meet the ground surface at 24 Brunswick Street.

Areas of the site that are already covered with an impermeable surface (e.g., basketball court, asphalt pathways, and surrounding roads) will be left in place, as there is no direct exposure of soil in those areas. The existing play structures and surrounding surfaces (sand, wood chips) will also be left in place as we have confirmed that all of these areas were constructed over a geotextile cloth which would prevent mixing or contact between the imported sand/wood chips and the underlying soil. Specific excavation techniques will be used around sensitive trees on the park site in order to minimize root disturbance. Two dead trees within the work zone will be removed.

Following excavation, a geotextile layer will be placed across the site to demarcate the new clean soil cap from the non-disturbed soil below. The geotextile will be abutted to any structure that penetrates it such as light standards or park benches. The geotextile will then be capped with clean soil and finished with grass sod, hydroseed or gravel along the pathways.

By removing all exposed shallow soil across the site, and placing a geotextile layer and new soil cap, these risk management measures will eliminate direct and indirect exposure to PAHs and metals that may remain in the deeper soil.

**Q7 – Will the community be exposed to unacceptable levels of contaminants during the remediation project?**

A7 – The remediation area will be surrounded by construction fencing and only authorized personnel will be able to access the work area. This will eliminate any direct exposure to the impacted soil during the project. To limit potential exposure from inhalation of dust particulate, the contractor will be required to develop and implement a Dust Control Plan as part of the project. The plan will include steps to prevent fugitive dust emissions at the site and adjacent properties as well as to prevent vehicle tracking of soil onto the surrounding municipal roadways. The project specifications also limit the area of impacted soil that can be left exposed at any given point in the project. An environmental consultant retained by the City will be on-site during the duration of the project to ensure that dust mitigation measures and other project specifications are being implemented.

**Q8 – Is the former landfill site generating any methane gas?**

A8 – A passive methane collection and venting system was installed at the site in the late 1990s as part of the Environmental Management Plan developed for 160 Lees Avenue. The methane vents are located along the western perimeter of the park, next to the wood bollards along Brunswick Street. Although detectable levels of methane were not measured during a monitoring event completed in 2015, the methane collection and venting system will remain in place as part of the current remediation project.

**Q9 – How will the site be monitored to ensure that the risk management measures are successful?**

A9 – Following completion of the remediation program, the site will be inspected and maintained on a regular basis to ensure the continued integrity of the clean soil cap. Any required repairs will be made forthwith and a record of all inspections, deficiencies and repairs will be maintained by the City. A summary report documenting the remedial work will be prepared by the City's environmental consultant, and will be available for review by other City departments as needed. If any additional ground disturbance is required at the site (e.g., playground equipment upgrades, utility work, tree planting, etc.), the City's Environmental Remediation Unit will ensure that all work involves replacement of the soil cap at the site.

**Q10 – Is Public Health involved in this project?**

A10 – Public Health was consulted as part of the planning of the remediation project, and a copy of this fact sheet has been provided for their reference.

**Q11 - When is remediation work expected to begin?**

A11 – The estimated start date for the remediation project is September 12, 2016 and it will take approximately 7 weeks to complete. The work at the site will be completed in two stages

beginning with the south portion of the park, so that the play structures can remain open during the first half of the project.

**If you have further questions that have not been addressed, please contact:**

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