Risk Management Health and Safety Plan — 200 Lees Avenue

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Bureau de la dirigeante principale de la gestion des risques
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1. Introduction

1.1. Purpose

The purpose of this Risk Management Health and Safety Plan (HASP) is to provide health and safety information to people working or otherwise involved at 200 Lees Avenue. This Risk Management HASP sets out responsibilities, establishes personnel protection standards and mandatory safety practices and procedures, and provides for contingencies that may arise during various site activities, which could involve encountering impacted subsurface soils and groundwater at the site. This Risk Management HASP forms part of the University of Ottawa's policies and provides guidance for developing project-specific HASPs.

1.2. Applicability

The provisions of this plan are applicable to any activity at 200 Lees Avenue that includes, but is not limited to, non-construction-related excavation, landscaping, utility servicing, exterior building maintenance, groundskeeping (gardening, grass-cutting, snow-clearing), riverbank and erosion protection maintenance, soil cover maintenance, intrusive investigations, research, teaching activities and sports activities. Construction activities will require a project-specific risk management HASP.

This Risk Management HASP does not address confined spaces , asbestos management or other hazardous materials / designated substances. They are covered in separate University-wide programs.

This Risk Management HASP for 200 Lees Avenue is supplemental to any existing University of Ottawa risk management and environmental health and safety policies and procedures. Where there is a conflict between this document and any existing policies and procedures, this document will take precedence.

1.3. Target stakeholders

Target stakeholders for this Risk Management HASP include University of Ottawa employees (faculty and support staff), students, maintenance workers (indoors and outdoors), contractors and visitors (including facility and recreational users).

1.4. Organizational structure and responsibilities

The Ontario *Occupational Health and Safety Act* (OHSA) sets specific duties for all workplace parties. Everyone has a general duty to make sure that the act and all its regulations are complied with. They also have the duty to take every precaution reasonable in the circumstances to protect workers. Therefore, they must ensure the safety of everyone

and implement necessary mechanisms to assess, control and monitor hazards or potential hazards.

Complete roles and responsibilities according to Ontario regulatory requirements are addressed in the Ontario OHSA and associated regulations. University policies, including Policy 72 and Procedure 14-1 (made under Policy 77), specify University-specific health, safety and environmental responsibilities.

1.5. Reporting of accidents and unsafe conditions

Any employee or student who is aware of a health or safety problem on University of Ottawa premises has an obligation to report it. A problem that is essentially of a maintenance nature should be reported by the employee, the employee's immediate supervisor or a member of the occupational health and safety committee to Facilities at 613-562-5800 ext. 5000. Serious accidents or incidents and emergencies should be reported to Protection Services at 613-562-5411.

1.5.1. Problems in the area where an employee normally works

In accordance with University policy, problems in an employee's normal working area should be reported to the employee's immediate supervisor. The supervisor will deal with the matter and may, if appropriate, contact Facilities (for problems of a maintenance nature) or report it to the person designated as responsible for the building. If no action appears necessary, the supervisor will inform the employee.

After the problem is corrected, the supervisor shall send the employee a brief written report of the health and safety problem, and the steps taken to correct it.

If the employee is unsatisfied that the problem has been adequately dealt with, that employee should report it to the relevant health and safety committee.

1.5.2. Problems outside the area where an employee normally works

A problem outside of the area where an employee normally works should be reported to the facility manager for the building in question. Problems concerning areas outside of specific buildings should be reported to Facilities at 613-562-5800 ext. 5000. Personnel are required to report any and all health and safety incidents to their immediate supervisor as soon as practically possible. The immediate supervisor may be the project manager or office manager. Regardless of how small the incident is, it must be reported and addressed promptly.

If the employee who reported the health and safety problem is unsatisfied that the problem has been adequately dealt with, that employee should report it to the relevant health and safety committee.

1.5.3. Injury, illness and incident reporting

Actual or potential hazards in the workplace, including workplace accidents, incidents, occupational illnesses or near misses, must be reported using the University of Ottawa accident/incident reporting form.

Refer to the Incident Management Procedure.

2. Employee training assignments

2.1. General

All workers (employees and contractors), supervisors and students working on site who may be exposed to hazardous substances, health hazards or safety hazards require training before they engage in activities that could lead to such exposure. Employees will not be permitted to participate in or supervise field activities until they have been trained to a level required by their job function and responsibility.

In general terms, a variety of courses are offered in compliance with University policies 72 and 77 and Procedure 14-1, which are available on the University of Ottawa website. All employees are required to attend mandatory training sessions related to their work environment.

2.2. Employee, management and supervisor training

It is the responsibility of employees, supervisors, directors and deans to identify training needs within their work areas.

Training with respect to this Risk Management HASP is required for personnel (workers and supervisors) who are expected to work in or near open excavations or perform other activities where disturbance of subsurface soil (>0.15 m in depth) is anticipated. Training should consist of a brief overview of site conditions and the precautions required during planned activities or work.

2.3. Refresher training

All employees and supervisors will receive refresher training as required by material changes in site conditions.

3. Risk management strategy

3.1. Background

This plan is based on the findings of several consultant reports. In particular, a site-specific human health and ecological risk assessment was completed, peer-reviewed and accepted by the Ministry of the Environment, Conservation and Parks (MECP). That assessment found that the site does not pose material, human health or ecological risks. Copies of the reports are available for review at the Office of the Chief Risk Officer.

Issues with the subsurface soil at 200 Lees Avenue originate from historical landfill operations on site and from a former coal gasification plant off site. The site was formerly a City of Ottawa landfill that operated between 1906 and 1947. It received mainly ash, cinder and other burnt waste from the former Lees Avenue incinerator located to the west of the site. It may have received domestic waste as well. The site was developed for use as an educational facility in the early 1960s.

A former coal gasification plant operated by the Ottawa Gas Co. was immediately adjacent to 200 Lees Avenue, at a location currently occupied by the pumping station and associated parking lot for the O-Train Confederation Line light rail transit. Some coal tar residues were reportedly encountered during construction of the former southeast Transitway in the mid-1980s. The pumping station operated by OC Transpo continuously collects and treats impacted groundwater. Residues associated with free-phase coal tar and impacted groundwater have been detected on the campus property at 200 Lees Avenue.

Previous investigations indicated that polycyclic aromatic hydrocarbons (PAHs) and heavy metals were present in campus soil, riverbank soil, nearshore sediments and groundwater. The concentrations were greater than the limits in the MECP Guideline for Use at Contaminated Sites in Ontario, which was applicable at the time of the investigations. The reports indicate that the distribution of these contaminants does not appear to be concentrated in any one area.

The 200 Lees Avenue campus underwent a significant transformation with the construction of the Faculty of Health Sciences (FHS) building, inaugurated in September 2023. Consequently, for the purpose of this HASP, the 200 Lees Avenue campus will be separated into two zones: Zone A and Zone B (see Figure 3-1). Zone A consists of the area surrounding buildings A and E, the open-air stadium and the parking lot. Zone B consists of the area surrounding the FHS building, including the bicycle storage area and the large grassed area northeast of the building.

Figure 3-1: Site plan of the 200 Lees Avenue campus, divided into Zone A and Zone B for the purpose of this HASP. The red dashed line indicates the approximate zone delineation.

3.2. Surface barrier system

A human health and ecological risk assessment (HHERA) was completed for the FHS building redevelopment plan. A risk mitigation measure from the HHERA was to implement a surface barrier system surrounding the new building (Zone B, Figure 3-1). The surface barrier system consists of fill cap barriers and hard cap barriers.

- Fill cap barrier

A 0.5-m layer of fill meeting MECP Table 3 site condition standards (SCS), or the lowest of the human health or ecological effects–based standards, underlain by a suitable demarcation layer (i.e., a non-woven geotextile or similar layer). The fill cap is overlain by topsoil or planting media as required to establish growth of plants/grasses or other landscape ornaments.

- Hard cap barrier

A minimum of 75 mm of asphalt, concrete or equivalent (for example, landscape pavers) placed on top of a minimum of 150 mm of granular base installed over existing soil caps (to establish grade) that are installed over the impacted soils at the site.

- Existing fill cap barrier

The existing fill cap barrier covering the rest of the Lees Avenue campus (Zone A, Figure 3-1) consists of a minimum of 0.15 m of clean imported topsoil.

3.3. Overview of risk management strategy

No significant risks or precautions were identified for site activities such as research, teaching and sporting activities. **Excavating or any other activity that disrupts soil to a**

depth greater than 0.15 m in Zone A or 0.5 m in Zone B must follow the protocols outlined in subsequent sections.

3.3.1. Exterior building maintenance

Exterior building maintenance activities including painting; window repair, replacement and cleaning; brickwork repair; and such do not require additional health and safety precautions.

In the event that repairs to building foundations are required where excavation deeper than 0.15 m in Zone A or 0.5 m in Zone B may need to be done, precautions applicable to maintenance workers should be applied (level C or D in Table 3-1).

3.3.2. Precautions for maintenance workers

To reduce risks to maintenance workers at the site, a number of precautions should be implemented:

- minimize exposed skin area (use of gloves)
- minimize time on site performing subsurface excavation work
- use partial face particulate respirators when dust cannot be controlled or active excavation is being performed
- take dust reduction measures

In general, landscape and maintenance workers should wear a dust mask, wear gloves and minimize hand-to-mouth contact since ingestion rates are partially based on hand-to-mouth contact.

Where excavation to depths greater than 0.15 m in Zone A or 0.5 m in Zone B is expected, a project-specific HASP, which considers the findings of the previous environmental investigations at the site, should be developed.

Groundskeeping

Routine groundskeeping activities such as grass-cutting, snow-clearing and flower-bed maintenance do not require additional precautions beyond the standard University of Ottawa health and safety requirements. However, any landscaping activities involving disturbance of soils at depths greater than 0.15 m in Zone A or 0.5 m in Zone B should follow Level D requirements in Table 3-1. Gardening for the production of consumable produce should be done in raised beds that have been filled with organic soil and compost suitable for the production of vegetable crops. In-ground gardens are not recommended for the production of consumable produce.

Construction activities

Construction activities that are undertaken by the University of Ottawa staff shall have a project-specific risk management HASP developed by the Project Management Office. Construction activities undertaken by contractors shall have a project-specific risk management HASP that they develop and the Office of the Chief Risk Officer endorses, as

is discussed further in Section 5. These project-specific plans will take into consideration the scope of the project and be based on this document as the minimum standards.

3.3.3. Management of excavated soils

During excavation into the subsurface, care should be taken to segregate the clean fill from the underlying cinder and ash fill when excavated soils are stockpiled. Depending on the location, it should be expected that the top 0.15 m of soil in Zone A and the top 0.5 m in Zone B will be clean fill or topsoil, and any soils below this depth could be impacted cinder and ash fill. Unless gross evidence of contamination is observed (e.g., coal, tar, free-product hydrocarbons) or engineered fill (e.g., Granular A) has been deemed necessary to backfill the excavation for geotechnical or other reasons, then excavated soils, including the cinder and ash fill, can be placed back into the excavation. To maintain the original stratification of soils and fill as much as possible during backfilling, excavated soil, including the cinder and ash fill, should be placed back into the excavation in reverse order of how it was removed, i.e., cinder and ash fill first, followed by clean fill or topsoil. To minimize relocation of potentially impacted soils, however, soils and fill should not be excavated from one area of the site and used as backfill in another area. Disposal of any excess soil should be co-ordinated through the Office of the Chief Risk Officer.

3.3.4. Personal protective equipment (PPE)

General

The proper use of PPE will minimize exposed skin and inhalation/ingestion of dust. PPE should be selected to adequately protect employees from the hazards and potential hazards associated with encountering potentially impacted subsurface soil and groundwater during maintenance activities. PPE selection should be based on an evaluation of its performance characteristics relative to the requirements and limitations of the site, the task-specific conditions and duration, and the hazards and potential hazards identified at the work site. The level of protection provided will be increased when site conditions make it necessary to reduce employee exposure to below permissible exposure limits and published exposure levels for hazardous substances.

Levels of protection

All activities involving active excavation into the fill layer will be initiated at Level C, as described in Table 3-1.

Respiratory protection

All employees and contractors who wear, or may have to wear, respiratory protection must be trained, fit-tested and declared medically fit to wear the specific respiratory equipment before they engage in activities that may require respiratory protection. With respect to Level C requirements, when air-purifying respirators are required, full-facepiece or half-mask respirators with high-efficiency dust cartridges should be used. Respirators belong to, and are only used and maintained by, the individual to whom they have been issued.

3.3.4.1. Personal protective equipment program

Details of the PPE program for the 200 Lees Avenue Risk Management HASP are summarized in Table 3-1.

Table 3-1. Protective equipment for on-site maintenance activities

Action level	Level	Protective equipment
When dust cannot be controlled or when active excavation is being performed deeper than 0.15 m in Zone A or 0.5 m in Zone B, or when entering a crawl space[3]	C	1. A minimum of a NIOSH-approved P100 respirator[1] 2. Safety glasses or chemical-splash goggles[2] (as required) 3. Hooded chemical-resistant clothing (overalls, two-piece chemical-splash suit, disposable chemical-resistant overalls) 4. Gloves, outer, chemical-resistant 5. Gloves, inner, chemical-resistant 6. Boots (outer), chemical-resistant, steel toe and shank[1] (as required) 7. Hard hat[1] (as required)
When dust is controlled, and when an excavation deeper than 0.15 m in Zone A or 0.5 m in Zone B is open, but active excavation is not being performed	D	1. Coveralls 2. Work gloves 3. Boots/shoes, chemical-resistant, steel toe and shank (as required) 4. Safety glasses or chemical-splash goggles[1] (as required) 5. Hard hat[1] (as required)
Non-intrusive groundskeeping activities such as gardening, grass-cutting and snow-clearing where fill materials are not disturbed	N/A	No additional precautions beyond standard University of Ottawa health and safety requirements

1. Unless otherwise indicated in the designated substances report for the specific area of the crawl space being entered
2. Optional and as per University of Ottawa general health and safety requirements
3. Only buildings A and E have crawl spaces

3.3.5. Minimizing time on site performing subsurface work

Landscape workers are recommended not to spend more than 3.5 years working in open excavations at the site. This assumes that the same landscape worker is on site 8 hours a day, 32 days a year (or 256 hours a year). This also assumes that the landscape worker is not in contact with soil more than 0.3 m deep.

Utility workers are recommended not to spend more than 10.3 years working in open excavations at the site. This assumes that the same utility worker is on site 8 hours a day, 10 days a year (or 80 hours a year). This also assumes that the utility worker is not in contact with soil more than 2 m deep.

3.4. Maintenance and monitoring of soil cover

To further reduce potential risks to landscapers who may be in contact with shallow soils, the following will be done:

- maintaining at least 0.15 m of imported topsoil in all non-paved areas of Zone A and at least 0.5 m in non-paved areas of Zone B to reduce the potential for seasonal, repeated contact with the impacted fill
- landscaping with low-maintenance features that require little tending, or using landscape features such as paving stones or boulders
- placing additional clean topsoil on grassed areas and re-sodding any observed bare spots promptly to minimize dust generation during grass-cutting

As part of a semi-annual inspection of engineered controls at the site, the following routine monitoring and maintenance activities should be conducted to ensure the integrity of the surface barrier system:

- Garden beds should be assessed for average depth of topsoil or clean fill over the ash and cinder fill layer, and if this depth is found to be less than 0.15 m in Zone A or 0.5 m in Zone B, additional topsoil should be placed as part of comprehensive landscaping services.
- Bare spots in otherwise grassed areas should be re-sodded as described earlier.
- Areas of the site with poorly established grass that is mowed should be identified and reseeded annually, preferably in the early fall (mid-August to mid-September) according to best practices for this area.

3.5. Riverbank maintenance and soil erosion

Care should also be taken not to cut grass along the riverbank too short, as this may cause the roots to wither from exposure. The roots hold the soil in place, and where there is no more vegetation, riverbank soils can quickly be washed into the river.

Another cause of increasing erosion is stormwater catch basins. If not cleared regularly, they fill up with sand, grit and debris, causing rainwater to spill onto the surrounding area. This puts pressure on the shoreline through additional erosion. Any stormwater catch basins and holding tanks near the shoreline should be inspected yearly and cleaned out as required by the site-specific stormwater management plan to ensure they are functioning properly.

3.6. Fence maintenance

A fence has been installed along the tree line adjacent to the Rideau River shoreline to limit access to the river's edge. This fence should be inspected annually and repaired as required.

3.7. Purpose of risk management plan monitoring

Monitoring of risk management measures is anticipated to mirror regular workplace inspections. Inspections of risk management measures will serve to determine if the prescribed risk management practices and procedures are being followed.

4. Communications and other notification requirements

4.1. General

Under Ontario's OHSA, employers are obligated to do the following:

- Provide the appropriate health and safety committee or a health and safety representative with the results of a report in the employer's possession that discusses occupational health and safety and, if that report is in writing, a copy of the portions of the report that concern occupational health and safety.
- Advise workers of the results of any report referred to in the previous bullet. If the report is in writing, make available to them, on request, copies of the portions of the report that concern occupational health and safety.
- Where so prescribed, provide workers with written instructions on the measures and procedures to be taken for their protection.

4.2. Notification of a project

In conformance with the information stated previously, prior to the implementation of a project that may disturb subsurface soils and/or groundwater, the employer and supervisor must provide workers who will be working near or at the work site with written instructions on the measures and procedures to be taken for their protection. This document can be used to meet these requirements.

5. Contractor and third-party health and safety plans

Contractors working on the property can be considered "employers," "supervisors" and "workers" under the Ontario OHSA. Before activities begin, the contractor must develop its own HASP as described in the Vendor Health, Safety and Environmental Requirements document, which is available on the University's website. The University of Ottawa will provide a copy of this site-specific Risk Management HASP, but it is not a substitute for an independent HASP by the contractor, as required by the University of Ottawa for the work to be conducted. The contractor must agree to comply with at least the minimum requirements of this Risk Management HASP, its own site-specific HASP and general University of Ottawa health and safety requirements, as well as being responsible for the health and safety of its own employees. The contractor must also agree that it will take any additional measures it deems necessary to meet the minimum applicable health and safety standards if unforeseen circumstances arise. The contractor will provide the minimum safety equipment as required by the site-specific Risk Management HASP.

The University of Ottawa may require evidence of the following health and safety training/documentation from its contractors:

- Contractor employees must have appropriate training (i.e., either a 40-hour or 24-hour Occupational Safety and Health Administration–required [29 CFR 1910.120] health and safety course for hazardous waste work, or certified equivalent training).
- Personnel must have appropriate PPE with fit test records when applicable, and training for the specific job.
- Equipment and field operations must meet applicable safety standards and satisfy the University of Ottawa's field inspection. Unsafe equipment, procedures or operations will necessitate a shutdown of the job site at a cost to the contractor.