

01035 Environmental Protection**Index**

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01035-1 General**1.1 Description**

This section describes the requirements for protection of the environment, including air, water, land, natural resources, flora, fauna, humans, and their interrelations.

1.2 Definitions**1.2.1 Clean Soil**

Clean Soil means soil that does not contain any deleterious substances.

1.2.2 Contaminated Soil

Contaminated Soil means soil material that has chemical concentrations of regulated substances above applicable regulatory criteria.

1.2.3 Contaminated Water

Contaminated Water means water that has chemical concentrations of regulated substances above applicable regulatory criteria.

1.2.4 Construction Waste

Construction Waste is defined as bulk refuse originating from construction, demolition, renovation and re-development projects not including asbestos, waste dangerous goods or material contaminated with waste dangerous goods.

1.2.5 Deleterious Substances

Deleterious Substances refers to substances that, if added to clean soil, would degrade or alter or form part of a process of degradation or alteration of clean soil quality so that it is rendered or could be rendered deleterious to human or environmental habitat.

1.2.6 Drainage Systems

Drainage Systems in an urbanized environment are the water management systems that are constructed to collect, convey, store, and discharge storm water into the naturally formed rivers, creeks, streams, or other water bodies.

1.2.7 Environmentally Sensitive Lands

Environmentally Sensitive Lands include the following:

- Wetlands;
- Open spaces and utility corridors;
- Watercourses;
- Waterways;
- Underground recharge areas;
- Riverbanks;
- Natural plant habitats;
- Animal habitats;
- Flood plains; and
- Other landforms easily disturbed by development.

1.2.8 Fill

Fill, including Existing on Site Material and Imported Fill Material, is defined by the Park Development Guidelines and Standard Construction Specifications.

1.2.9 Hazardous Waste

Hazardous Waste is a waste with hazardous properties, which may have potential effects to human or environmental health.

1.2.10 Liquid Waste

Liquid Waste includes sludges, solutions, and any other form of waste in liquid or aqueous phase.

1.2.11 Prohibited, noxious, or nuisance weeds

Prohibited, noxious, or nuisance weeds refers to those listed in the Weed Control Act of Saskatchewan.

1.2.12 Waste

Waste means any discarded or abandoned organic or inorganic material, including material or by-products discarded in a manufacturing or producing process; snow; ice;

soil; rocks; rubble; garbage; tree cuttings; grass; leaves; empty or partly empty tins, boxes, cartons, bottles and containers; discarded paper and fabrics, discarded household utensils; household furniture; household appliances of any nature; trees; concrete; or any other refuse, rubble, or matter.

1.2.13 Watercourse

Watercourse means a drain, ditch, drainage ditch, culvert, water channel, or retention pond, whether natural, constructed, or altered.

1.2.14 Waterway

Waterway means a river, stream, creek or canal, whether natural, constructed or altered, and includes the frozen surface and bed of the hydraulic channel.

1.3 Compliance

It is the responsibility of the Contractor to know which laws, regulations, approvals or permits relate to the work being done within the city.

It is the responsibility of the Contractor to comply with all applicable laws and regulations and ensure that all requirements imposed are met for all activities within the scope of work.

1.4 Resource Conservation

Operate and conduct work in a way that incorporates the principles of:

- Water conservation.
- Reduced fuel consumption;
- Energy conservation; and
- Reducing or creating efficiency such that waste production is minimized.

Where reasonable, attempt to document resource consumption and identify opportunities for conservation.

01035-2 Specific Requirements**2.1 Recycling and Reuse**

All opportunities to divert construction waste from landfills will be examined and identified. At a minimum, recycling cardboard, wood, asphalt, concrete, metal and plastics generated on site will be examined.

2.2 Disposal of Wastes

All waste is prohibited from being buried on site. Refer to the Waste Bylaw, 2004, Anti-Dumping Bylaw, Sewer Use Bylaw, 2017 and the Storm Water Management Utility Bylaw, 2011 for municipal requirements.

Provide adequate receptacles for solid municipal waste and recycling on site. All solid municipal waste and recyclables must be removed from the site in a timely manner. No waste, trash, litter, or debris shall be left onsite following demobilization of the work site. Ensure no waste, trash, litter, or debris is blown off site. Any waste that has migrated off site shall be collected and disposed of.

Any waste or material shall not be abandoned in the course of import, export or transit.

All waste shall be disposed of only at approved facilities.

Disposal of waste into drainage systems, watercourses and waterways is prohibited.

Disposal of liquid waste into the sanitary sewer is regulated by the Sewer Use Bylaw, 2017. A Special Discharge Permit from the City is required for all non-domestic wastewater disposal into the sanitary sewer.

Some liquid wastes may require testing and certification that they are non-hazardous prior to disposal. Testing must be completed by a certified laboratory.

Separate potentially hazardous waste from non-hazardous waste. Dispose of hazardous waste in accordance with regulations.

Fires and burning of rubbish on site is not permitted.

2.3 Surface and Groundwater Management

Provide temporary drainage and pumping as necessary to keep excavations and the site free from standing water.

Dispose of water pumped from site in accordance with municipal requirements. A Special Discharge Permit may be required.

2.4 Fill Management

All fill sources must be approved by the Engineer. Provide a Chain of Custody. Confirmatory testing may be required. Testing must be completed by a certified laboratory.

Potentially contaminated fill must be disposed of at an approved facility or reused with Engineer approval.

Backfill must be clean and approved by the Engineer. Provide a Chain of Custody. Confirmatory testing may be required. Testing must be completed by a certified laboratory.

Potentially contaminated fill being stored on site must be segregated and isolated from the public and stored in a manner that prevents any offsite migration, as approved by the Engineer.

Clean soil may be taken to the landfill with proper permitting from the City.

2.5 Dust Management

Apply dust control measures as prescribed by the Engineer.

Maintain erosion and pollution control features if installed under this Contract.

Prevent sandblasting and other extraneous materials from contaminating air beyond the application area by providing temporary enclosures.

Wind erosion control measures should consist of applying water or other dust palliatives to prevent or alleviate dust. Do not apply so much that runoff occurs. Cover stockpiles as an alternative to applying water or dust palliative.

2.6 Noise Control

Noise on site shall be mitigated as to satisfy the Noise Bylaw, 2003 and Occupational Health and Safety requirements.

Consider the surrounding environment and conduct work as to not create excess noise disturbance.

Apply noise control measures as prescribed by the Engineer.

2.7 Erosion and Sedimentation Prevention

Stockpiles should be located in areas with little potential for flooding and at least 15 m (50 ft) from drainage systems and waterways, unless approved by the Engineer.

Consider the following options to manage site runoff impacts:

- Grade stockpile areas;
- Identify downstream storm drains and manholes, and place a cover, fence or barrier around them and/or install a sediment trap; and
- Place berms, dikes or temporary diversion structures around stockpiles;
- Communicate site runoff management measures to the Engineer.

Design and construct temporary crossings so that minimum erosion is caused to waterways.

Ensure adequate erosion and sediment control measures are in place, as defined by the Engineer.

2.8 Spill Management

Spills must be addressed in a manner that will:

1. Stop or eliminate the discharge or release from occurring;
2. Contain the spilled substance so that it does not spread or migrate;
3. Ensure that public, worker and environmental safety is upheld;
4. Clean and remediate the spill impacts; and
5. Fulfill reporting requirements.

Spills must never be hosed down or buried.

Be prepared for spills by locating and clearly labelling spill kits and used absorbent containers.

A substance release must be reported to the Saskatchewan Ministry of Environment if:

The substance may cause or is causing an adverse effect on the environment; or

The substance meets the criteria set out by the provincial Discharge and Discovery Reporting Standard.

All releases requiring reporting to the Saskatchewan Ministry of Environment shall be communicated to the Engineer at the same time.

2.9 Spill Prevention

Prior to the start of construction activities, all spill hazards must be identified and a Spill Protocol must be developed and communicated to the Engineer.

Construction activity must meet all applicable laws and regulations, including Part III of the provincial Environmental Management and Protection Act, 2010.

Construction material transport, delivery and storage shall satisfy federal, provincial and municipal regulatory requirements, including permitting.

Hazardous material transport, delivery and storage shall satisfy federal, provincial and municipal regulatory requirements, including permitting.

Materials associated with construction activities must be delivered and stored using practices that prevent these materials from polluting water, soil and air.

2.9.1 Fueling activities

Fueling activities shall be managed in a way such that:

1. Fueling areas must:
 - a. Be located on level grade;
 - b. Be located at least 100 m away from waterways; and
 - c. Be located at least 50 m away from catch basins; unless a written standard operating procedure is developed, approved by the Engineer and followed;

2. Fueling operations are never left unattended at any time;
3. A drip tray or equivalent localized spill containment is required when fueling;
4. Vehicles and equipment that regularly enter and leave the site are fueled offsite;
5. Fixed bulk fuel tanks require secondary containment and adequate release detection systems that comply with regulation;
6. Spill kits and appropriate absorbent spill clean-up materials are readily available; and
7. All leaks and spills are cleaned up immediately and materials used for cleanup and contaminated soil are disposed of properly

2.9.2 Temporary Sanitary Facilities

Temporary Sanitary Facilities shall be managed such that:

1. Temporary sanitary facilities are not located near drainage systems, watercourses or waterways;
2. Temporary sanitary facilities are located in areas with little potential for flooding; and
3. If the area is deemed to be a high wind area, the facilities shall be secured to prevent overturning; unless approved by the Engineer.

2.9.3 Liquid waste

Liquid waste containment shall be structurally sound, leak-free, and provide sufficient spill containment for the anticipated volume.

Frequently inspect liquid waste containment and spill containment devices for damage or defects and repair as needed.

Locate liquid waste containment such that accidental releases do not discharge to drainage systems, watercourses, or waterways or threaten health or safety.

2.10 Discovery Management

The Engineer may implement additional health and safety procedures for substance discoveries, which could include stopping work in the area of contamination discovery, securing the worksite and taking appropriate measures to protect workers and public safety.

Laboratory testing may be conducted as designated by the Engineer if suspected contaminated water or soil is encountered. Testing must be completed by a certified laboratory.

The discovery of a substance must be reported to the Saskatchewan Ministry of Environment if:

- The substance may cause or is causing an adverse effect;
- The substance discovered is in a quantity or concentration that could pose a serious risk to the environment or public health or safety; or
- The substance meets the criteria set out by the provincial Discharge and Discovery Reporting Standard for the applicable media with respect to that substance.

All discoveries requiring reporting to the Saskatchewan Ministry of Environment shall be communicated to the Engineer at the same time.

2.11 Environmentally Sensitive Lands

Work that occurs within or adjacent to an Environmentally Sensitive Land shall satisfy all applicable regulations.

Work that occurs within or adjacent to a wetland is to be conducted in a way that considers all aspects of the Civic Council Policy C09-041.

Work that occurs within or adjacent to an open space is to meet the requirements of the Park Development Guidelines and Standard Construction Specifications.

Any proposed works on or adjacent to waterways must satisfy all applicable legislation.

Operation of construction equipment in waterways is prohibited, unless the appropriate permitting is acquired.

Using waterway beds for borrow material is prohibited, unless the appropriate permitting is acquired.

Grade all fill on banks to ensure it is compact, contoured to the natural slope of the site and does not affect slope stability as per the approved design.

Dumping of waste material, or debris in waterways is prohibited.

2.12 Historic Artifacts

Items of archeological value are protected by the provincial Heritage Property Act and Civic Council Policy C10-020.

Items suspected of antique and relic value remain the property of the owner and should be assessed by the owner for protection value.

Items identified by the Contractor before work start shall be protected per Civic Council Policy C10-020.

Items discovered on City property during work shall be protected per Civic Council Policy C10-020 and reported to the owner for value assessment before proceeding with removal of items.

2.13 Site Clearing

Communicate the Site Clearing Plan to the Engineer at least 1 week prior to the site clearing start date.

The Site Clearing Plan should incorporate best management practices to protect and conserve existing natural areas, as well as satisfy applicable legislation related to migratory birds and species at risk.

The Site Clearing Plan must be designed in a way as to let wildlife have the opportunity to vacate the site on their own.

Permit conditions provided by the Engineer will be adhered to for the duration that they are applicable.

Restrict stripping of topsoil and vegetation to those areas designated in the Contract Documents or as marked by the Engineer.

Where possible, maintain existing ground cover to maximize runoff filtration.

2.14 Tree Protection

Trees on City property shall be protected according to the requirements of Civic Council Policy C09-011 and the Park Development Guidelines and Standard Construction Specifications.

Protect trees and plants on site and adjacent properties, where indicated by the Engineer, in compliance with municipal requirements.

Restrict tree removal to trees identified by the Engineer, in consultation with Urban Forestry.

2.15 Wildlife Protection

Avoid attracting wildlife to the work space by controlling or eliminating common attractants such as food wastes (garbage), standing water and perceived shelter (stockpiles, bins, boxes, etc.).

Any wildlife encountered during construction activities should first be allowed to exit the site on their own, via safe routes.

If safe routes are unavailable, removal and relocation of wildlife must only be done by qualified wildlife service providers working in accordance with applicable laws.

Be aware of key risk periods for migratory birds as stipulated by Environment Canada.

Avoid engaging in potentially destructive activities during key risk periods.

If activities are unavoidable, communicate with the Engineer to establish an appropriate Risk Management Plan that satisfies all applicable legislation, such as the Migratory Birds Convention Act, 1994 and the Species at Risk Act.

2.16 Invasive Species

Invasive species management should be applied where appropriate and as prescribed by the Engineer, in consultation with Parks.

Prohibited, noxious or nuisance weeds management shall be applied where appropriate and as prescribed by the Engineer, in accordance with The Weed Control Act of Saskatchewan.

01035-3 Measurement and Payment

No separate measurement for payment to be made for work in this section.

End of Specification 01035