Site Criteria Descriptions

Criteria	Description
Current / Planned Land Use	Evaluating the land use and zoning of the site identifies the readiness of the site and the potential for possible conflicts with established uses, the need for relocation of existing facilities or barriers to the project. Baseball sport fields may need to be relocated to allow building of solar panels as baseballs can damage solar panels. Solar panels have been installed adjacent to football (a.k.a. soccer) fields elsewhere.
Usable Area	Large, continuous, relatively flat and unshaded areas were considered for array installation. The usable area does not evaluate any mitigation measures required to recondition the land for solar panels such as removing isolated vegetation or regrading the land surface.
Adjacent Land Use	Evaluating the land use and zoning of adjacent properties provides an idea of the potential for residential concerns, the need for public community consultation, the need for installation of visual barriers around the site perimeter or permitting requirements with respect to environmentally significant or protected habitats. Accessibility through the adjacent properties to the site also plays a part in solar panel construction.
Landfill Topography	Solar panels require relatively even, flat terrain for installation. Uneven and significantly sloped areas would require expensive alterations such as regrading of the ground surface or complex designs.
Vegetation and Shading	Significant amount of tall vegetation causes shading which makes generation of solar power inefficient or unfeasible. The height of trees on-site and around the perimeter of the site affects the overall usable area.
Unauthorized Access / Vandalism	Signs of unauthorized access and vandalism introduces the risk of damage to solar panels and would require additional security management.
Connection Type	Solar panels require 3-phase power. Existing power availability was visually assessed and confirmed with the Local Distribution Companies (LDC). In situations where there is no power or only single-phase power, there are significant costs associated with upgrades.
Connection Capacity Availability	Connection capacity to the grid is a compulsory requirement. Local Distribution Companies (LDC) provided feeder station information to determine if the estimated solar panel capacity (kW) per site can be accepted at the feeder station. Further connection impact assessments (CIA) are a next step to confirm and reserve connection capacity.

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Existing Infrastructure	Existing infrastructure at each site may include monitoring and/or collection systems for landfill gas, leachate or groundwater, or other underground utilities such as water mains, natural gas pipelines or storm water sewers. Existing infrastructure may need to be accommodated, decommissioned or moved.
Landfill Cap Condition	The type, thickness and quality of the landfill cap is important to be able to accommodate the design and installation of the panel supports and the weight of the panel support structures without penetrating or otherwise damaging the established landfill cap, in place to protect the environment from the underlying waste.
Geotechnical Considerations	The type, suitability and quality of the subsurface material is important to be able to accommodate the design and installation of the panel supports and the weight of the panel support structures.
Storm Water Management (SWM)	Installation of solar panels may increase peak runoff during significant rainfall events. Existing SWM systems may require sufficient excess capacity to accommodate this potential increase. At this stage, existing SWM systems were noted, as well as evidence of runoff damage such as erosion and ponding or flooding potential through observations of standing water or presence of aquatic plants. A more detailed SWM evaluation will need to be conducted as part of detailed design.
Leachate Outbreaks	Leachate discharge from the landfill to ground surface is related to SWM. Any leachate outbreaks may cause ponding and may also be chemically corrosive, which would impact long-term maintenance of a PV system. A leachate collection system may need to be installed to manage any leachate, increasing costs.
Environmental Receptors	Existing environmental compliance approvals (ECAs) would require amendment to accommodate the solar PV installation. Environmentally significant or protected natural areas, wildlife habitat, water bodies and wetlands may prevent the installation of a PV system if directly on-site or within regulatory setbacks where permitting may be needed if such natural systems are adjacent to the site. Solar panel systems may be installed >50 m away from environmental receptors; permits may be required for solar arrays within this 50-m setback.
Species at Risk (SAR)	Using information from the Natural Heritage Information Centre database and background site documents as well as aerial photo interpretation, known and potential occurrences of SAR at each site and around its vicinity were assessed. The on-site presence of SAR may not allow an installation of a solar PV system, whereas nearby occurrences of SAR may require permits. Also, relocation of any disrupted SAR habitat may require relocation of the habitat to another location in the same eco-zone, necessitating the siting and/or purchase of new property elsewhere, adding to cost considerations.