



State of Maine
Department of Environmental Protection
Bureau of Remediation and Waste Management

**Applying for Approval to Install Solar Panels on or Within 100 feet of a
Closed Municipal Landfill Guidance**

Any person proposing to install solar photovoltaic (PV) panels or other structures on or within 100 feet of a closed municipal landfill must obtain a license from the Maine Department of Environmental Protection (Department). Pursuant to the *Maine Hazardous Waste, Septage and Solid Management Act*, 38 M.R.S. § 1306(1): “It is unlawful for any person to establish, construct, alter or operate any waste facility without a permit issued by the department.”

In order to issue a license, the Department must grant a variance from its landfill closure rules. This is because 06-096 C.M.R. ch. 401 § 5(B)(5)(a) prohibits the establishment of structures on top of or within 100 feet of the solid waste boundary of the landfill. Applicants seeking approval to vary from this prohibition, must present clear and convincing evidence that the proposed PV installation “is distinctive in some way that allows for compliance with State laws and the purpose and intent of the rules” (06-096 C.M.R. ch. 400 § 13(A)). The Department’s regulations can be found here: <https://www.maine.gov/dep/waste/rules/index.html>.

The Department provides approval through two separate, but very similar, processes based on the licensing history of the landfill. Please note that most older closed municipal landfills are considered non-secure landfills for licensing purposes. If the landfill had a license to operate from the Department, the Department may approve the variance allowing PV installation through a Solid Waste Project Minor Revision. If the landfill operated without a license and instead closed under a Department closure order, the Department may approve the PV installation through a Landfill Closure Modification. Please contact Department Landfill Closure and Remediation Program Staff to determine which procedure is appropriate for your facility. Department staff can forward the appropriate form upon review.

The current application fee and processing times are generally the same for each process and can be found here: <https://www.maine.gov/dep/waste/solidwaste/applicationforms/index.html>. See the “Remediation & Waste Management – Solid Waste” section of the fee schedule (page 9). Reference “WB existing, non-secure msw landfill <15,000 people” for a licensed non-secure landfill, being sure to reference the footnote regarding “the fee for a minor revision at a solid waste facility other than a secure landfill...” which substantially reduces the listed fee. Alternatively, reference “WP application for an approval of a closure modification” for an unlicensed non-secure landfill.

To apply for the required permit and variance, follow the instructions below:

1. Fill out the correct application form:

- A. For a licensed closed landfill:
APPLICATION FOR APPROVAL OF A SOLID WASTE PROJECT MINOR REVISION (<https://www.maine.gov/dep/waste/solidwaste/general.html>)
- B. For a landfill that is closed without a license:
APPLICATION FOR AN APPROVAL OF A LANDFILL CLOSURE MODIFICATION
(<https://www.maine.gov/dep/waste/solidwaste/landfillde.html>).

2. Prepare the following supporting information:

- A. **Project description.** Provide a description of the landfill history including, but not limited to: size in acres, the types of waste disposed, the year it was closed and covered, landfill cover system details, and any operational or remediation issues since closure, etc. Provide details of the proposed PV system.
- B. **Site plan.** Provide a site plan showing the landfill property boundary, solid waste boundary, monitoring wells, buildings, roadways, fence lines and other pertinent features of the project site.
- C. **PV system design.** Provide design plans and reports, stamped by a Maine Licensed Professional Engineer, that clearly:
 - i. Describe, both narratively and with engineered drawing(s), how the PV system will be installed. This must include details on avoiding impacts to the landfill's cover system;
 - ii. A plan detailing the management of any unexpected waste encountered during installation for any portion of the PV system located adjacent (within 100 feet) to the landfill cover system (e.g., during pile driving, excavation, etc.);
 - iii. Detail the utilities and the location of the utilities that will be installed to support connection of the PV system to the electric transmission grid, including, but not limited to, combiner boxes, inverters, transformers and wiring; and,
 - iv. Describe the actions that will be taken to prepare the site for installation and operation of the PV system, including temporary and permanent access roads and construction laydown areas.
- D. **Landfill gas control.** Provide information demonstrating that the project will not create an unreasonable risk of exposure to landfill gas (LFG). The information to be provided should include the following:
 - i. If the landfill has an engineered LFG management system:
 - a) A description of the existing LFG control system and assessment of

its current effectiveness;

- b) An assessment of the potential impacts of the proposed PV system on the LFG control system and a description of the steps that will be taken to preserve the integrity of the system, including minimum setbacks of the solar panels and associated equipment from passive LFG vents and any proposed alterations to the system;
- c) A plan showing the existing LFG gas control features and any proposed changes to the LFG control system; and,
- d) A description of the safeguards that will be taken to prevent LFG buildup in utility conduits or any other structures associated with the PV project.

- ii. If the landfill does not have an engineered LFG management system, or if work is only being conducted adjacent to the landfill (i.e., within 100 feet but not on the landfill cover), provide an evaluation of the potential for LFG migration resulting from the construction and operation of the PV system. Describe the safeguards that will be taken to prevent LFG migration resulting from the construction and operation of the PV system.

E. **Settlement and stability assessment.** Provide information demonstrating that the integrity and performance of the landfill cover system, including drainage and LFG systems, will be maintained under PV system loading and predicted settlement. The settlement and stability assessments required below shall be stamped by a Professional Engineer, licensed in the State of Maine. The information to be provided should include:

- i. A description of the existing waste mass, existing cover system topography and any existing settlement including areas showing evidence of ponding or loss of positive drainage;
- ii. An assessment of the potential for differential settlement induced by the proposed PV system, including consideration of anticipated wind and snow loading;
- iii. An assessment of the stability of all proposed structures on the landfill cover system and description of any reinforcement measures required to install and maintain the structures; and,
- iv. A description of the equipment required to construct the project and any construction equipment limitations necessary to protect the cover system.

F. **Stormwater control.** Provide a plan showing existing stormwater control and outflow features and proposed changes to the landfill stormwater management system. The site plan required in 2(B) above can be referenced if it includes existing stormwater features. Describe the existing stormwater management system and the steps that will be taken to ensure the system has the capacity to handle the predicted increase in runoff from the PV system, including whether the

pre- and post- stormwater assessment for a 24-hour, 25-year storm event would be affected by the installation of the PV system.

- G. **Erosion control plan.** Provide an erosion and sedimentation control plan for construction and operation of the project. The plan must be prepared in accordance with the Department's *Maine Erosion and Sediment Control Best Management Practices (BMPs) Manual for Designers and Engineers*, revised October 2016. The Plan must include how spring thaw and associated mud conditions will be addressed in the event construction is not completed prior to the beginning of winter through the start of spring.

H. **Post-construction inspection and maintenance.**

- i. Provide the most recent inspection report of the existing landfill conditions.
- ii. Provide a monitoring and maintenance plan outlining the steps that will be taken to inspect and maintain the landfill cover system and appurtenant systems after the PV system is installed. The plan must specify who will be responsible for inspection, maintenance and repair of both the PV system and the landfill systems and must provide for the landfill surface to be mowed at least once annually. A sample inspection report should be included.

The Inspection and Maintenance plan also must identify the steps that will be taken to control access to the PV system. The location of existing and proposed fencing must be shown on the project design plans. Fencing that penetrates the landfill cap is generally not acceptable.

- I. **Inspection during construction.** Given the varying slopes and stability associated with construction on a landfill, the importance of protecting the landfill cover system, and the importance of erosion and stormwater controls at a landfill, the applicant must retain the services of a Department-qualified third-party inspector. A list of qualified third-party inspectors can be found on the Department's website: <https://www.maine.gov/dep/land/sitelaw/third-party-inspectors.html>.

Prior to start of construction, the applicant must conduct a pre-construction meeting to discuss the construction schedule and the erosion and sediment control phasing plan with the appropriate parties. This meeting must be attended by the applicant's representative, Department staff, the design engineer, the construction contractor, and the third-party inspector. The third-party inspector requirement is in addition to inspections by the applicant's Maine Licensed Professional Engineer to ensure the PV construction meets the design requirements. Provided they are properly certified, one person can act as both the third-party inspector and Maine Licensed Professional Engineer. The frequency of third-party inspections proposed must be included in the application but is expected to be on a regular basis during construction and after defined weather occurrences (i.e., rain events of a certain magnitude). Regular inspections are required from the time construction starts to

the time when the project is complete and the site stabilized, unless written permission is received from the Department to modify the inspection frequency. Written reports documenting the inspections must be submitted to the Department following each inspection. The Department reserves the right to require more frequent inspections if erosion issues arise and are not promptly addressed.

- J. **Technical ability.** Provide evidence demonstrating that the applicant and its consultants have the technical ability to design and install the PV system. Identify who will be responsible for operation and maintenance of the system and provide information on their prior experience and training in the operation and maintenance of PV systems.
 - K. **Financial ability.** Provide documentation demonstrating that funds are available to install, operate and maintain the panels while preserving the integrity of the landfill cover system and to restore the landfill to its prior condition when the PV system is decommissioned. A cost estimate must be provided which includes costs for engineering; construction; operation and maintenance over the anticipated lifespan of the PV system; and decommissioning.
 - L. **Schedule.** Provide a project schedule that includes a pre-construction conference with the Municipality, PV system developers, contractors, partner(s), and the Department prior to initiation of on-site construction activities.
3. **Submit the application.** Mail the application with all supporting information, including a check for the application fee made payable to "Treasurer, State of Maine", to: DEP-BRWM, 17 SHS, Augusta ME 04333-0017. Additionally, email a complete electronic version of the application to matthew.r.young@maine.gov. As an alternative to submitting a check, payment can be made by credit card through the Department's Credit Card Payment Portal: <https://appengine.egov.com/apps/me/deppayment>. See page 1 of this guidance document for additional information on the appropriate process and applicable fee.
4. **Post public notice of the project.** Although not required by Department rules, the Department recommends that PUBLIC NOTICE of the proposed PV installation be published once in a newspaper circulated in the Municipality where the landfill is located. A form for this notice is attached.
- The notice should appear in the newspaper on or about the date the application is filed with the Department. A copy of the PUBLIC NOTICE should also be sent to the owners of abutting property at the same time the notice is published in the newspaper.
5. **Contact the Department with questions.** Please contact the assigned Department project manager in the Landfill Closure and Remediation Program or Matt Young (207-215-7841, matthew.r.young@maine.gov) if you have questions at any point during the application preparation and review process.

*THIS FORM IS FOR USE IN NOTIFYING ABUTTING PROPERTY OWNERS AND
PUBLISHING NOTICE IN THE LOCAL NEWSPAPER.*

NOTICE OF APPLICATION TO INSTALL SOLAR PANELS

Please take notice that the *(insert Town or City)* of *(insert Town/City name)* has applied to the Maine Department of Environmental Protection (DEP) for approval to install solar photovoltaics on the closed municipal landfill located at *(insert landfill street address)*.

To receive approval, the Municipality must demonstrate that installation of the photovoltaics will be compatible with the landfill cover system, not create a nuisance, nor constitute a hazard to public health or welfare.

The application and supporting documents are available for inspection during normal working hours at the *(insert Town/City's name)* municipal office and at the DEP's office, located at *(insert DEP office address and phone # provided by DEP Project Manager)*.

Interested parties are invited to submit written comments. To ensure consideration, comments must be received in writing within 30 days of publication of this notice. Address correspondence to:

Maine DEP BRWM
Attn: Matthew Young
17 SHS
Augusta, ME 04333-0017

Or by email to matthew.r.young@maine.gov