Permitting Solar PV in Massachusetts

A Guide for Municipalities

This series of case studies was developed for municipalities in Massachusetts to be used as a guide to improve permitting processes for residential and commercial solar photovoltaic (PV) systems.

The case studies highlight how various municipalities in Massachusetts have improved permitting processes for solar PV, thereby saving time and money for government officials, solar installers, and residents.

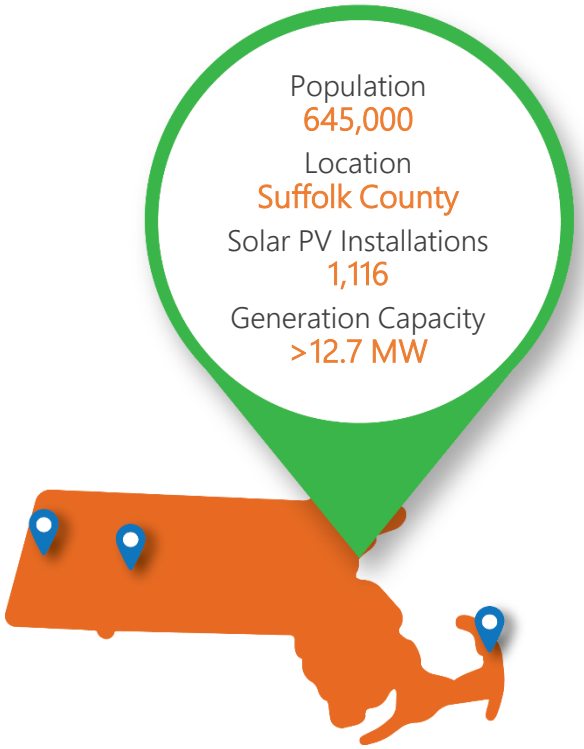
These resources have been developed by the Massachusetts Department of Energy Resources, with support from the Clean Energy States Alliance.

Municipalities covered in this series:

- Boston
- Northampton
- Pittsfield
- Wellfleet

Figure 1: Renew Boston released an interactive map for residents to gauge the potential of solar on their roofs. Source: http://www.mapdwell.com/en/boston

Boston, MA



Fast Tracking Solar

The City of Boston was selected as a case study for its great strides in streamlining its permitting process for solar PV. In 2013, the Inspectional Services Department switched to a short-form application for residential installations and created an expedited process for qualifying larger systems. Residential permits have a one-day turnaround, while expedited commercial permits are issued within one week.

Boston, MA

Solar Photovoltaics (PV) Permitting: Fast Tracking Solar

THE CITY OF BOSTON

Boston, the capital of Massachusetts, has a population of almost 645,000 people. Since 2010, the city has installed 1,116 solar projects, 552 of which are commercial or utility-scale systems. All together, these systems have a generation capacity of over 12.7 MW.[1] The city is a designee in the Massachusetts Green Communities Program and participated in Solarize Mass in 2012 (see box). Through the Renew Boston initiative, the city, with help from its partners, has streamlined its permitting process, improved financial incentives, and worked with an MIT team to developed an online interactive map[2] for homeowners to understand their roof's solar potential.

Solarize Mass & Green Communities

Solarize Mass is a community based campaign that aims to increase the adoption of small-scale solar. Tiered pricing structures save participants more money as more people sign contracts.

The **Green Communities** designation and grant program seeks to cut energy costs and strengthen economies in all 351 Massachusetts municipalities. Communities must meet specific criteria after which the state will provide grants to finance energy efficiency and renewable energy projects.

THE PROBLEM

In 2012, Boston experienced a 7.5-fold increase in the number of solar installations. At that time, the city had a permitting process that was not equipped to handle such a significant growth in solar PV permit applications. The Inspectional Services Department quickly adapted its policies in response to this increase in demand for solar.

"In general, you're seeing a lot of change everywhere. We do what we can for customers without giving the farm away."

– Conversations with Supervisor of Permitting and Building Administration, City of Boston

Boston developed a standardized short-form application for residential solar and created the Solar Fast Track Program for larger arrays. Traditionally, Boston's standard permitting process takes an average of 30 days. If a project meets the standards of the Solar Fast Track Program, however, that process only takes seven days. Short-form permit applications are issued the very same day. The City of Boston also integrated online submission software, simplifying the management, status tracking, and issuing of all permit applications for both the Inspectional Services Department and the customer.

THE PERMIT PROCESS

Boston has a standardized permitting process for solar PV. Residential buildings with three or less units submit a short-form building permit application. All other projects must complete the long-form application. System size (kW) is not taken into account for either process. A separate electrical permit is required for all applications. All permits can be submitted online, in person, by mail, or via fax. The long-form building permit can be initiated online, but certain portions must be submitted in person. Larger roof-mounted residential and commercial projects that meet certain requirements are eligible for the Solar Fast Track Program. These systems avoid the full long-form application process. Figures one and two depict the processes for the short-form and long-form applications and the associated electrical and building permit fees are in table one.

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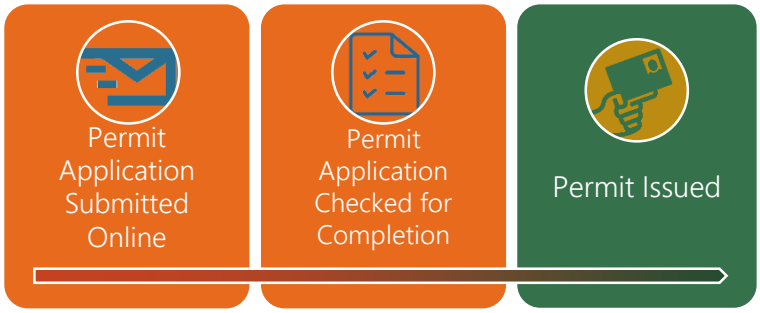
The Short Form

The short-form application process applies to minor alterations to small residential structures. Short-form applicants are required to submit a stamped survey showing where the system is located on the roof, drawings of the mounting system, and installers are required to have workers' compensation insurance. Once submitted, the building department reviews the documents to verify that all required fields have been properly completed and that the necessary attachments have been filed. If all information has been submitted correctly, installers receive a decision on their application within one business day. The short-form application is only reviewed for completion and not for compliance with city and state codes. A compliance review is viewed as redundant as the plans have already been approved and stamped by an accredited professional engineer.

*Figure 1: The three-step solar PV **short-form** building permit*



The Long Form

The long-form building permit application process, for major alterations to all other structures, requires additional documentation. Applicants are required to submit a letter from a professional engineer indicating that the roof is able to support the system. A long-form application also requires a cost and control affidavit completed by the licensed construction professional who will oversee system construction. Once the installer submits the application and associated documents, the permit application is entered into a queue to be reviewed by the plans and zoning department. The review can take up to 30 business days and includes an analysis of the plans to determine compliance with city and state codes and standards. Projects that meet the requirements for the Solar Fast Track Program are moved to the front of the queue.

*Figure 2: The four-step **long-form** building permit process*

Electrical Permit

All solar PV installations require an electrical permit. These applications can be accessed and submitted online, in person, through the mail, or via fax. Only electricians with a valid electrician's license and identification in Massachusetts may apply for electrical permits. In addition to the application, electricians must submit proof of workers compensation insurance and liability insurance. Once submitted, the Electrical Department will verify that all required fields have been properly completed. If all information is submitted correctly, electricians can expect to receive a decision on their electrical permit application in one business day.

Table 1: Permit fees in Boston

Fee Details	Building Permit	Electrical Permit
Fee	US$ 10 /1000	US$ 10 / 1000
Application Fee	US$ 20	US$ 20

Boston, MA

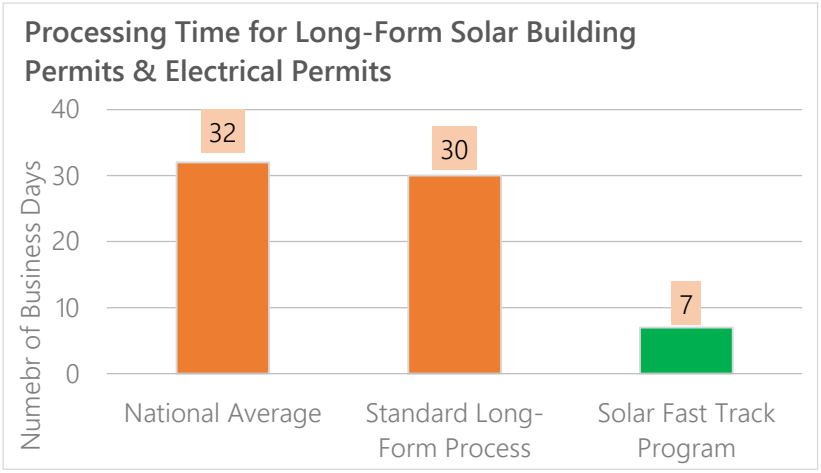
BOSTON'S KEY INITIATIVES

Solar Fast Track Program

The Solar Fast Track Program is an expedited process for long-form building permit applications. Projects must meet the following requirements to be eligible:

- Uses solar PV technology
- Is an accessory use
- Is a roof mounted system
- Is not part of a larger construction or renovation project
- Adheres to the underlying zoning code, including height requirements
- Must be on an underlying structure that conforms to the code

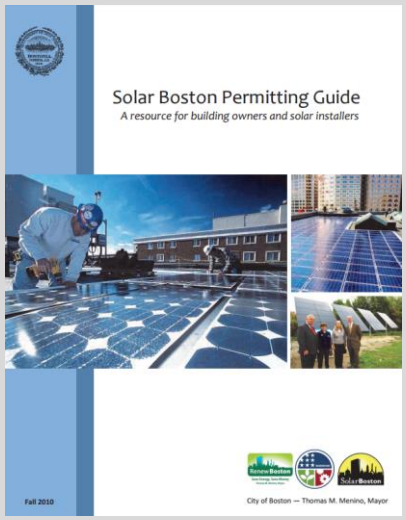
Graph 1: Long-form permit process time with and with out the solar fast track program



The Solar Fast Track applications are moved to the front of the queue ahead of all permitting projects that may require more in-depth analysis. The review time for this program is seven business days, 77% faster than if the project were to go through the standard procedure and 78% faster than the national average.[1] Currently, the U.S. Department of Energy awards prizes to jurisdictions that complete seven-day solar projects from project approval to interconnection. Boston's process aligns with national best practices and is on track to meet this high-level goal.

Outreach and Education

Boston's Inspectional Services Department designed and implemented the Solar Fast Track program, updated existing resources, and created new outreach materials to educate installers, businesses, and residents on the details of permit applications for rooftop solar installations in the City of Boston. This work included updating the Boston Solar Permitting Guide to reflect the changes made to the process with the new Solar Fast Track Program, creating a dedicated solar page on the ISD website, and designing handout materials that ISD provides to contractors interested in learning more. These guides and handouts provide installers with the necessary knowledge to improve application quality and limit excessive back-and-forth communication. Additionally, the educational materials aid residents and businesses in understanding when to install a solar PV system.



[1] Tong, James. (2012, December). Nationwide Analysis of Solar Permitting and the Implications for Soft Costs. Clean Power Finance. Retrieved from https://solarpermit.org/media/CPFDOE_Permitting_Study_Dec2012_Final.pdf

Boston, MA

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A PERMITTING SUCCESS STORY

Thanks to proactive efforts by the Office of Energy and Environmental Services, the Inspectional Services Department, and other related city departments, the City of Boston has made significant progress in creating a friendly environment for residents and businesses interested in taking advantage of solar PV. Through the Rooftop Solar Challenge grant programs, city departments are continuing efforts to streamline processes and implement smart regulations for solar projects. The short-form permit application and the Solar Fast Track Program have significantly cut the processing time required for building permits for larger solar projects, lowering installation costs for installers as well as the city's administrative costs. The Boston Redevelopment Authority is proposing to develop a zoning article, which will set clear rules for solar PV development in the City of Boston, similar to the existing Article 88 rules for wind projects. Additionally, the Boston Fire Department is interested in fire safety standards for solar PV development and is working with the Massachusetts Board of Building Regulations and Services to evaluate model codes as potential candidates for adoption.

BOSTON | Checklist for Permitting Best Practices			
	Permitting Checklist	✓	Eliminate Excessive Inspections
	Permitting Templates	✓	Implement Expedited Process
	Limited Inspection Time Windows	✓	Do Not Require Community-Specific Licenses
✓	Permitting Websites		Simplified Permit Fees
✓	Online Permitting	✓	Train Permitting Staff in Solar

DOER Massachusetts Department of Energy Resources
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CleanEnergy States Alliance
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[2] Based on data tracked by the Massachusetts Department of Energy Resources for qualified units under the Solar Carve-Out I and II programs. For more information, visit www.mass.gov/eea/energy-utilities-clean-tech/renewable-energy/solar/

[3] http://www.mapdwell.com/en/boston