



Commonwealth of Massachusetts
Office of the State Auditor
Suzanne M. Bump

Making government work better

Local Financial Impact Review – Issued December 10, 2020

The Impact of the State-Owned Land PILOT and Solar Taxation Policies on Municipalities





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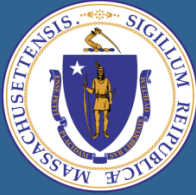
December 10, 2020

His Excellency, Charles D. Baker, Governor
The Honorable Karyn E. Polito, Lieutenant Governor
The Honorable Karen E. Spilka, President of the Senate
The Honorable Robert A. DeLeo, Speaker of the House
Honorable Members of the General Court

Dear Colleagues:

Since the passage of the original state-owned land act in 1910, Massachusetts has set aside lands for civic and conservation purposes and compensated our municipalities for lost tax revenue through a payment in lieu of taxes (PILOT). Today, 297 of our 351 cities and towns receive this compensation as recognition of the state's purchase and control of tax-exempt land. It is my privilege to submit this study of the programs related to state-owned land and water supply protection land—and recommendations to more appropriately offset the cost impacts on our cities and towns.

This report also reviews the taxation of solar power facilities through assessments and PILOT agreements between solar developers and municipalities. A series of Appellate Tax Board decisions, which applied a decades-old statute to a modern technological reality, made this area more complex. This study makes recommendations for how we can equitably treat the developers and producers of solar power while allowing for the taxation of their facilities for our resource-stressed municipalities.



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I would like to offer my sincere appreciation to the dozens of local and state stakeholders who took time from their other professional obligations to assist in the development of this study. I am also grateful to the staff of the Department of Revenue, the Massachusetts Water Resources Authority, and the Department of Conservation and Recreation, as well as the local assessors and financial managers who shared critical insight on these issues.

This report was undertaken pursuant to Section 6B of Chapter 11 of the Massachusetts General Laws, which grants the Office of the State Auditor's Division of Local Mandates (DLM) authority to review any law or regulation that has a significant financial impact on local government. Copies of the report are available on the Office of the State Auditor's website, www.mass.gov/auditor, or by calling DLM at (617) 727-0025.

Please do not hesitate to reach out to my office with any questions or comments. As always, thank you for your continued support of our shared effort to improve the success, accountability, transparency, and efficiency of Massachusetts state government.

Sincerely,

A handwritten signature in black ink, appearing to read "S. M. Bump".

Suzanne M. Bump
Auditor of the Commonwealth

TABLE OF CONTENTS

Contents

TABLE OF CONTENTS.....	I
LIST OF ABBREVIATIONS.....	II
ABOUT THE DIVISION OF LOCAL MANDATES.....	III
EXECUTIVE SUMMARY	1
PURPOSE OF THE STUDY	5
PILOTS: AN INTRODUCTION.....	7
SITUATIONAL ANALYSIS	10
FINDINGS: STATE-OWNED LAND PILOT PROGRAM	27
RECOMMENDATIONS: STATE-OWNED LAND PILOT.....	38
FINDINGS: SOLAR FACILITY PILOT	42
RECOMMENDATIONS: SOLAR FACILITY PILOT	46
REFERENCES.....	49
APPENDIX A - CONTRIBUTORS.....	54
APPENDIX B - METHODOLOGY	56
APPENDIX C – SOLAR PILOT ATB CASES.....	63

LIST OF ABBREVIATIONS

ATB	Appellate Tax Board
DCAMM	Division of Capital Asset Management and Maintenance
DCR	Department of Conservation and Recreation
DFS	Department of Fire Services
DLM	Division of Local Mandates
DLS	Department of Revenue's Division of Local Services
DOC	Department of Correction
DOR	Department of Revenue
DOER	Department of Energy Resources
EEA	Executive Office of Energy and Environmental Affairs
FY	fiscal year
kW	kilowatt
MW	megawatt
MWRA	Massachusetts Water Resources Authority
PILOT	payment in lieu of taxes
PV	photovoltaic
SOL	state-owned land

ABOUT THE DIVISION OF LOCAL MANDATES

The Division of Local Mandates (DLM) was established by Proposition 2½, an initiative to limit property tax increases, in order to determine the financial impacts of proposed or existing state laws, regulations, and rules on cities and towns. Proposition 2½ limits a city or town’s authority to raise real estate and personal property taxes. Under the strict limits on taxing authority set by Proposition 2½, cities and towns could no longer simply raise property taxes to fund state-mandated programs. Thus, DLM was created to respond to municipal petitions to determine whether a state mandate falls within the purview of the Local Mandate Law.

The Local Mandate Law, Section 27C of Chapter 29 of the Massachusetts General Laws, generally provides that post-1980 laws, regulations, or rules that impose service or cost obligations on cities, towns, regional school districts, or educational collaboratives and meet certain thresholds shall be effective only if locally accepted or fully funded by the Commonwealth. Any protected party aggrieved by such a law, regulation, or rule may petition DLM for a determination of whether the law, regulation, or rule constitutes a mandate and to make a cost determination of the state funding necessary to sustain a mandate.

In 1984, the Massachusetts General Court expanded DLM’s powers of review by authorizing DLM to examine any state law or regulation that has a significant local cost impact, regardless of whether it satisfies the more technical standards under the Local Mandate Law. This statute is codified as Section 6B of Chapter 11 of the General Laws. As a result of this law, DLM releases reports known as “municipal impact studies” or “6B reports,” which examine various aspects of state law that may impact municipalities.

Through these functions, DLM works to ensure that state policy is sensitive to local fiscal realities so that cities and towns can maintain autonomy in setting municipal budget priorities.

EXECUTIVE SUMMARY

Programs that make payments in lieu of taxes (PILOTs) have existed in Massachusetts law for over 100 years, with the goal of compensating municipalities for lost revenues from tax-exempt properties. One of these programs, created for state-owned land (SOL), was established in 1910 and remains a significant source of revenue for communities, involving thousands of acres of protected forest, recreational areas, and properties that house public universities and houses of correction. Another program, which focuses on power generation facilities, was established in 1997 and has become increasingly important for municipalities hosting solar farms that generate power for households, businesses, and municipalities themselves.

Although these two programs are codified in state law, there are questions about whether municipalities are adequately compensated for hosting state lands and solar facilities. PILOT reimbursements for SOL are reliant on a legislative appropriation, yet the formula provides larger reimbursements to municipalities with high and fast-growing property values at the expense of other communities. Voices from communities and the Legislature have called for a reexamination of the SOL program in order to alter arrangements that disadvantage rural communities.

Power generation facilities provide another important source of tax revenue for municipalities. Small-scale, residential installations of solar panels have been exempt from taxation for decades. Decisions by the Appellate Tax Board (ATB) interpreting this law have extended tax exemptions for solar equipment to commercial entities. This change has resulted in varied reactions from communities, such as taxing solar facilities, negotiating PILOTs, and granting exemptions for varying rates and terms. Legislative action to clarify the law has advanced in recent years, but has not yet resulted in enacted legislation.

The Division of Local Mandates offers a unique perspective for examining state PILOT programs through DLM's charge to measure the impacts of state law and regulation on municipalities. This report is the result of discussions with a wide range of stakeholders, including legislators, municipal officials, state agencies, environmental groups, the solar industry, and solar power advocates. The report also underscores the urgent need for a fix of the two examined PILOT programs for the benefit of communities across the Commonwealth.

Below is a summary of our findings and recommendations, with links to each page listed.

SOL PILOT Finding 1 Page 27	<p>The SOL PILOT Program has been underfunded for decades.</p> <ol style="list-style-type: none">Appropriations to the SOL PILOT Program have not fully funded the program's statutory obligation to reimburse cities and towns in the last twenty years.At least \$45 million was needed to fully fund the SOL program in fiscal year 2020. The Legislature appropriated \$30 million that year, leaving a \$15 million shortfall.
SOL PILOT Finding 2 Page 29	<p>The current SOL PILOT formula disadvantages communities with slowly increasing or declining property values.</p> <ol style="list-style-type: none">Changes made to the program by the Municipal Modernization Act favor communities who experience faster property value growth than the state average.Affluent urban and suburban communities in eastern Massachusetts are the largest recipients of SOL reimbursements.Rural, less affluent areas in central and western Massachusetts receive lower PILOT reimbursements over time due to slower growth and decline in property values.
SOL PILOT Finding 3 Page 31	<p>Municipalities receive higher reimbursements for lands in the Watershed PILOT Program than their SOL PILOT Program Lands.</p> <ol style="list-style-type: none">The Watershed PILOT Program is able to fully reimburse communities and protect against drops in funding due to hold harmless protections and a dedicated revenue source.All municipalities under the SOL PILOT Program have the same reimbursement rate, whereas the Watershed PILOT Program calculates reimbursements by using communities' commercial tax rates.
SOL PILOT Finding 4 Page 34	<p>Not all state agencies' properties are eligible for SOL PILOT reimbursements, limiting payments available for some municipalities.</p> <ol style="list-style-type: none">The list of state agencies and properties currently eligible for the program has been mostly unchanged in laws governing SOL since 1974.The SOL statute creates artificial limits among state agencies, meaning that land under major government properties, courthouses, and county jails is not eligible for reimbursements.
SOL PILOT Finding 5 Page 35	<p>PILOT reimbursements do not capture additional value that results from significant improvements on land.</p> <ol style="list-style-type: none">Buildings and other improvements to properties are not included in SOL values and therefore not counted towards reimbursements.Municipalities hosting highly-developed state-owned properties face a dual burden because the facilities create an increased demand for municipal services.

SOL PILOT Finding 6 Page <u>36</u>	<p>Dissatisfaction with the SOL PILOT program has led local officials to oppose further acquisitions of land by the state.</p> <ul style="list-style-type: none"> a. SOL represents a large share of property values in small towns in Western Massachusetts, which rely on adequate compensation by the program. b. In these towns, state acquisitions of land may result in lower assessments than when land was in private ownership.
SOL PILOT Recommendation 1 Page <u>38</u>	<p>Strengthen the SOL PILOT Program and increase its appropriation.</p> <ul style="list-style-type: none"> a. Fully fund the SOL PILOT program using the aggregate tax rate method. b. Include a hold harmless provision to protect municipalities with reduced land values and PILOT reimbursements. c. Examine and fix other issues within the SOL PILOT Program through legislative action.
Solar Facility PILOT Finding 1 Page <u>42</u>	<p>The ATB's interpretation of the solar property exemption has created confusion among municipal officials on how to tax solar arrays.</p> <ul style="list-style-type: none"> a. Rulings from the ATB in the 2010s have interpreted the solar exemption to include both residential and commercial solar arrays from property taxes. b. The ATB decisions only apply to the towns involved in the cases, but could be binding on all communities if affirmed in an appeal to the Massachusetts Appeals Court. c. Municipalities lack resources to appeal ATB decisions, which disadvantage them in negotiations with developers.
Solar Facility PILOT Finding 2 Page <u>43</u>	<p>Solar facility PILOT agreements do not always reflect the full tax value of solar equipment.</p> <ul style="list-style-type: none"> a. In negotiations with solar developers, communities may discount some of the taxable value of solar equipment although the equipment must be based on "full and fair cash valuation."
Solar Facility PILOT Finding 3 Page <u>43</u>	<p>State laws and guidelines governing the taxation of solar equipment and PILOT agreements with solar facilities are outdated and lack clarity.</p> <ul style="list-style-type: none"> a. A law allowing PILOT agreements between municipalities and "generation facilities" was enacted in 1997, but legislators likely did not expect that the entities using the law today would be solar developers. b. Formal guidelines for the valuation and taxation of generation facilities by the Division of Local Services (DLS) lack clear examples of standardized PILOT agreements and/or valuation processes for solar facilities.
Solar Facility PILOT Finding 4 Page <u>44</u>	<p>PILOT agreements have increased in importance as solar developers seek tax exemptions for their facilities.</p> <ul style="list-style-type: none"> a. Solar developers can continue to negotiate PILOT agreements with municipalities, even if the developers may be exempt from paying taxes on solar installations. b. Some solar facility PILOT agreements have focused only on personal property taxes as a result of the ATB decisions.

Solar Facility PILOT Finding 5 Page <u>44</u>	<p>The uncertainty of the property tax situation is one of several factors contributing to a slowdown in the development of solar facilities in the Commonwealth.</p> <ul style="list-style-type: none">a. In recent years, cities and towns passed solar moratoriums due to concerns about future tax revenues from solar facilities and the proliferation of solar projects in their communities.b. Solar development in Massachusetts is declining due to completed renewable energy incentives, net metering limits, and land use concerns by municipal officials.
Solar Facility PILOT Recommendation 1 Page <u>46</u>	<p>Clarify the solar property tax exemption through legislative action.</p> <ul style="list-style-type: none">a. Proposed legislation would establish which solar arrays and installations are exempt from taxation and would exclude larger solar companies from seeking an exemption.
Solar Facility PILOT Recommendation 2 Page <u>47</u>	<p>Clarify the tax status of solar facilities that may not be eligible to participate in PILOTs under existing state law.</p> <ul style="list-style-type: none">a. Existing solar facility PILOT law excludes mid-sized solar farms that generate an abundance of energy but do not fit the definition of a “generation company.”b. Proposed legislation allows municipalities to negotiate PILOT agreements with solar facilities that were not covered under existing law and do not qualify for a tax exemption.
Solar Facility PILOT Recommendation 3 Page <u>48</u>	<p>Establish additional guidelines for assisting municipalities in creating and negotiating solar PILOT agreements.</p> <ul style="list-style-type: none">a. Proposed legislation exists that would require the Department of Revenue (DOR) and the Department of Energy Resources (DOER) to develop guidelines such as standardized valuation formulas and sample PILOT contracts.

PURPOSE OF THE STUDY

Payments in lieu of taxes, also known as PILOTs, are a key source of revenue to municipalities across Massachusetts. When municipalities forgo property tax collections from exempt properties, local governments seek alternatives to shifting more of the tax burden to homeowners and businesses. Therefore, PILOT programs provide a valuable source of revenue to cities and towns that they would otherwise not receive. Such programs exist for entities such as forested land, municipal utility companies, renewable energy farms, and nonprofit hospitals and universities.

PILOT programs have existed in Massachusetts for over 100 years, and there are currently several under state law.¹ For this report, DLM will focus on two PILOT programs that represent substantial sources of revenue for municipalities and are codified under Massachusetts law: state-owned land (SOL) and solar-power generation facilities. DLM recognizes and shares the concerns raised by stakeholders about the operation of both programs and whether they meet the current needs of municipalities, particularly those in rural areas with demographic challenges resulting in stagnating or declining property values.

While both programs examined in the report provide revenue to municipalities, economic, demographic, and legal complexities in the two programs result in uncertain funding over time. Millions of dollars in reimbursements for SOL are distributed to communities each year, but payments are not consistent, due to fluctuating state budget appropriations and changes in property values. Concerns come particularly from communities in central and western Massachusetts. As a result of declining reimbursements to communities across the state, legislators and municipal officials are calling for a reexamination of the SOL program's formula.

Solar PILOT agreements allow for more standardized payments between solar developers and municipalities, but issues in property valuations, as well as challenges in negotiating fair contracts, have hindered the ability of municipal officials to effectively administer these programs. Moreover, decisions from the Appellate Tax Board (ATB) over the past six years have created uncertainty and inconsistency regarding the taxation of solar facilities, leading stakeholder groups to call for clarification of state law.

¹ M.G.L. c. 58, § 13-17; St. 1910, c. 607; M.G.L. c. 59 § 5G; M.G.L. c. 59, § 38H(b)

This report will do the following:

1. identify aspects of state law, regulation, and policy that guide PILOT programs for SOL and watershed areas.
2. compare and contrast the components of the SOL PILOT Program with the Watershed PILOT Program managed by the Department of Conservation and Recreation (DCR) and the Massachusetts Water Resources Authority (MWRA);
3. estimate and project cost impacts of relevant state law and policy attributed to the SOL and Watershed PILOT programs;
4. identify aspects of state law, regulation, and policy that guide the practice of taxation of solar installations and solar facility PILOT payments;
5. compare and contrast structural elements of the solar PILOT agreements with those of the State of New York's solar PILOT program; and
6. make recommendations for changes designed to enhance the Commonwealth's efforts to support fair PILOT payments to municipalities.

To prepare this report, DLM conducted interviews with stakeholders from the Department of Revenue (DOR), the Massachusetts Municipal Association, the Massachusetts Association of Assessing Officers, independent advocates, and state and local officials and staff. In addition, we reviewed historical reimbursement data, ATB decisions, and proposed legislation, among other resources. A full breakdown of the methodology used for this report is located in the Appendix. Although other PILOT programs exist between municipalities and educational institutions or medical centers, these arrangements will not be discussed in this report.

PILOTS: AN INTRODUCTION

The property tax is the most important source of revenue for most cities and towns across Massachusetts, “representing 58.3 percent of total municipal revenues in FY[20]19,” according to the Greater Boston Chamber of Commerce.² In fiscal year (FY) 2020, the average property tax bill for detached single-family homes in the Commonwealth reached over \$6,000 for the first time in history.³ While the state has restricted the amount of increase in tax collections each year through Proposition 2½, average tax bills grow at a steady rate.⁴ State aid is the next most significant category of revenues for municipalities,⁵ but if this aid does not increase at the same rate as property taxes (roughly 2.5% each year), then property tax revenues become a larger presence in local budgets. For years, the Massachusetts Municipal Association has advocated for policies that cut municipalities’ dependence on the property tax for their operations and continues to point out the importance of the property tax to fund education and other municipal services.⁶

For various reasons related to public policy, there are categories of exemptions from the property tax, including the following:

- nonprofit land owners, including religious, healthcare, and educational institutions;⁷
- municipally owned electric utility companies;⁸
- renewable energy installations, including solar and wind power systems;⁹
- targeted population groups such as veterans, widows and surviving children, the elderly, and the blind;¹⁰
- Tax Increment Financing and other special tax abatements voted on by the community and approved by the state;¹¹ and

² Department of Revenue, Division of Local Services. (2020). *Revenue by source*.

<https://dls.gateway.dor.state.ma.us/reports/rdPage.aspx?rdReport=RevenueBySource.RBS.RevbySourceMAIN>; Greater Boston Chamber of Commerce. (2020). *How much of your local budget do property taxes fund?* <https://www.bostonchamber.com/public-policy/issues-impact/property-tax-dashboard/>

³ Department of Revenue, Division of Local Services. (2020). *Average single family tax bill*. https://dls.gateway.dor.state.ma.us/reports/rdPage.aspx?rdReport=AverageSingleTaxBill.SingleFamTaxBill_wRange&rdRequestForwarding=Form.

⁴ M.G.L. c. 59, § 21C. Note: An explanation of Proposition 2½ can be found in “About the Division of Local Mandates.”

⁵ Department of Revenue, Division of Local Services. (2020). *Average single family tax bill*.

⁶ Massachusetts Municipal Association. (2007, October 11). *A revenue sharing partnership plan to build a stronger Massachusetts*.

https://www.mma.org/wp-content/uploads/2018/07/mma_rev_shar_part07_0.pdf; Massachusetts Municipal Association. (2020, October 16).

MMA submits comments to DLS and DESE regarding Chapter 70 local contribution calculation. <https://www.mma.org/advocacy/mma-submits-comments-to-dls-and-dese-regarding-chapter-70-local-contribution-calculation/>

⁷ M.G.L. c. 59, § 5, Cl. 3, 11.

⁸ M.G.L. c. 164, § 47C.

⁹ M.G.L. c. 59 §5, Cl. 45.

¹⁰ M.G.L. c. 59, § 5, Cl. 17, 17C, 17C½, 17D, 22, 22A, 22B, 22C, 22D, 22E, 22F, 22H, 37, 37A, 41, 41B, 41C, 41C½.

- land and buildings owned by the state or federal government, including authorities (e.g., the Massachusetts Water Resources Authority [MWRA]).¹²

As communities continue to rely on the property tax and deal with the substantial number of exemptions in the state's tax laws, there are programs commonly known as PILOTs that help replace lost revenues. While some are legally mandated and others are voluntary, PILOTs replace some or all of the lost revenue from tax exemptions. PILOTs help minimize the revenue impact on communities hosting recreational areas, solar and wind farms, nonprofit institutions, and properties held by the Commonwealth.

This report will focus on two broad categories of PILOT payments.

First, there is a longstanding PILOT program related to state-owned land (SOL).¹³ This program, administered by the Department of Revenue (DOR), provides communities with payments in lieu of taxes on lands (but not buildings and other improvements) under state ownership that are used for a variety of purposes, including education, corrections, open space, and recreation. Subject to appropriation, the SOL program distributes local aid to 297 communities throughout the Commonwealth based on each community's share of SOL value. The values are updated every two years. In FY2020, the Legislature appropriated \$30,000,000 to compensate municipalities for \$3.15 billion in SOL holdings.¹⁴

In our analysis of the SOL program, we contrast its operation and funding with that of the Watershed PILOT Program. The watershed program, which is jointly administered by the Department of Conservation and Recreation (DCR) and MWRA, protects the lands in the various watersheds that make up the MWRA system.¹⁵ Over \$8,000,000 is distributed annually to 29 communities under this program.¹⁶

¹¹ M.G.L. c. 40, § 59; M.G.L. c. 40, § 60; 760 CMR 22.00 *et seq.*; Commonwealth of Massachusetts. (2020). *EDIP incentives awarded in 2020*. <https://www.mass.gov/info-details/edip-incentives-awarded-in-2020>

¹² M.G.L. c. 59, Cl. 1, 2. *See also* Department of Revenue, Division of Local Services. (2020, January). "Chapter 7: Property tax exemptions module." From *Course 101, Introduction assessment administration: law, procedures, and valuation*. <https://www.mass.gov/doc/chapter-7-property-tax-exemptions/download>

¹³ M.G.L. c. 58, §§ 13-17.

¹⁴ Massachusetts Budget and Policy Center. (2020). *Budget browser: state owned land (1233-2400)*. https://www.massbudget.org/browser/line_item.php?id=1233240000&inflation=cpi; Department of Revenue, Division of Local Services. (2020). *State-owned land values – FY2020*. <https://dls.gateway.dor.state.ma.us/reports/rdPage.aspx?rdReport=BLA.StateOwnedLand>

¹⁵ Department of Conservation and Recreation, Office of Watershed Management. (2020). *Watershed payments in lieu of taxes (PILOT)*. <https://www.mass.gov/info-details/watershed-payments-in-lieu-of-taxes-pilot>

¹⁶ *Id.*

The second area of focus of the report relates to the taxation of solar power installations in the Commonwealth. Solar power facilities, whether they are small installations to directly power a home or larger installations providing power to the electrical grid, are subject to special consideration for property taxes. Massachusetts law grants a property tax exemption for the installation of solar power equipment,¹⁷ which until recently was understood to apply solely to residential properties.¹⁸ Another provision of state law allowed for the use of PILOT agreements between the larger suppliers of solar power and municipalities in order to calculate future payments, as long as they are based on the full and fair value of land and equipment.¹⁹ A series of Appellate Tax Board (ATB) decisions, starting in 2014 and continuing to May 2020, however, extended the original tax exemption to commercial as well as residential solar facilities, creating uncertainty about the valuation and taxation of solar installations.²⁰

17 M.G.L. c. 59 § 5, cl. 45.

18 Meeting with former Rep. Bosley, 6/3/2020. On file with DLM.

19 M.G.L. c. 59, § 38H(b).

20 *Forrestall Enterprises, Inc. v. Board of Assessors of the Town of Westborough*, No. ATB 2014-1025 (Appellate Tax Bd., Dec. 4, 2014) (on file with DLM); *KTT, LLC v. Board of Assessors of the Town of Swansea*, No. ATB 2016-426 (Mass. Appellate Tax Bd., Oct. 13, 2016) (on file with DLM); *Quabbin Solar, LLC v. Board of Assessors of the Town of Barre*, No. ATB 2017-480 (Mass. Appellate Tax Bd., Nov. 2, 2017) (on file with DLM); *PelleVerde Capital, LLC v. Board of Assessors of the Town of West Bridgewater* (Mass. Appellate Tax Bd., May 29, 2020) (on file with DLM); *United Salvage Corp. of America v. Board of Assessors of the City of Framingham* (Mass. Appellate Tax Bd., May 29, 2020) (on file with DLM).

SITUATIONAL ANALYSIS

1. SOL PILOT (M.G.L. c. 58, § 13-17)

The SOL PILOT Program was established in 1910 and is the longest-running PILOT program in the Commonwealth.²¹ This program was created to provide reimbursements to cities and towns for tax-exempt land under state ownership within their borders, such as forests, beaches, and other public institutions. There is a recognized public value in the use of land for conservation and recreation purposes, so municipalities are reimbursed for their protected land under state control. Cities and towns are also reimbursed for the loss of potential revenue if land is used for other public purposes, such as universities or houses of correction. This program is crucial to rural municipalities that have a significant amount of land owned by the state, cities and towns that benefit from recreational tourism, and other communities that host large state facilities.

PILOT reimbursements to municipalities for SOL are dependent on four factors:²²

1. the value of SOL in each community as determined by the DOR;
2. the change in property values in each community as adjusted every two years;
3. the share of a municipality's SOL value to the total value of SOL in the state; and
4. the annual amount of money appropriated by the Legislature for the program.

The DOR determines the fair cash valuations of eligible SOL for which a community could receive a reimbursement in the program.²³ PILOT reimbursements are then determined, where the shares of municipalities' SOL values relative to the total SOL in the state are multiplied by the PILOT program's legislative appropriation.²⁴ The program's formula is outlined below:

$$(\text{Municipality's SOL Value} / \text{Total Statewide SOL Value}) * \text{Legislative Appropriation}^{25}$$

²¹ M.G.L. c. 58, §§ 13-17; St. 1910, c. 607.

²² Massachusetts Department of Revenue, Division of Local Services. (2020, January 14). *State-owned land program under M.G.L. c. 58, § 13-17: Frequently asked questions*. <https://www.mass.gov/files/documents/2020/01/14/SOLFAQ.pdf>.

²³ Note: Please refer to "SOL Eligibility" on p. 11, which defines what land is eligible for the SOL PILOT Program. *See also* Massachusetts Department of Revenue, Division of Local Services. (2020, January 14). *State-owned land program under M.G.L. c. 58, § 13-17: Frequently asked questions*.

²⁴ *Id.*

²⁵ *Id.*; M.G.L. c. 58, §§ 13-17

Legal and Legislative Analysis

SOL Eligibility

In order for a municipality to receive PILOT reimbursements, the land has to fall into one of the following categories:

*All land owned by the commonwealth as of January 1 and used for the purposes of a fish hatchery, game preserve or wild life sanctuary, a state military camp ground, the Soldiers' Home in Massachusetts, the Soldiers' Home in Holyoke, a state forest, the University of Massachusetts, or a public institution under the department of correction, the department of higher education, the department of mental health, the department of developmental services, the department of public health, the department of transitional assistance, or the department of youth services, land owned by the commonwealth known as the Wachusett Mountain State Reservation and the Mount Greylock State Reservation, Blue Hills Reservation, and the Middlesex Fells Reservation and of all land owned by the commonwealth and under the care and control of the department of conservation and recreation and used for recreational or conservation purposes; . . . and of all land held by the department of environmental protection for use as a solid waste disposal facility; . . . and of any land acquired by the low-level radioactive waste management board.*²⁶

Properties from other state agencies not listed in the statute are not eligible for PILOT reimbursements under the program. State laws governing the PILOT program dictate that buildings and other improvements on the land are not included in a municipality's SOL valuation. For example, buildings belonging to a state hospital would not be eligible for a PILOT reimbursement, but the land on which the hospital is built is eligible. Properties that were already tax-exempt before state acquisition, such as lands that were previously owned by the federal government, are also not eligible for PILOT reimbursements under law.²⁷

Valuing SOL

Before FY2019, SOL was revalued every four years based on information supplied by municipal assessors in each community.²⁸ After changes contained in the Municipal Modernization Act of 2016 were implemented in FY2019, the valuation process shifted to using a base value for land holdings in each municipality that represented values as of January 1, 2017.²⁹ Base values for each municipality were

²⁶ M.G.L. c. 58, § 13.

²⁷ M.G.L. c. 58, § 13; Meeting with Department of Revenue Staff, 2/27/2020. On file with DLM.

²⁸ Note: some municipalities' SOL were revalued every three years instead of four, according to the Department of Revenue. *See also* Massachusetts Department of Revenue, Division of Local Services. (2017, July). *2017 state owned land base year trend analysis*. On file with DLM; Meeting with Department of Revenue Staff, 2/27/2020. On file with DLM.

²⁹ M.G.L. c. 58, §§ 13-14; Massachusetts Department of Revenue, Division of Local Services. (2020, January 14). *State-owned land program under M.G.L. c. 58, § 13-17: Frequently asked questions*.

calculated by standardizing and equalizing their land schedules from FY2015, FY2016, and FY2017.³⁰ Every two years subsequent to FY2017, the base value is adjusted by a ratio reflecting the change in the equalized value of *all property* in the municipality (see text box below). Any land additions or dispositions in a community are calculated as the product of the average value per acre of land in the community multiplied by the size of the land holding.³¹ The valuation of individual properties in the program can no longer be contested, although a community may appeal its equalized valuation of all taxable property to DOR.³²

HOW SOL IS REVALUED – FY2020

- To determine a municipality's Equalized Valuation (EQV) Adjusted Ratio:
 - **([2018 EQV – 2016 EQV] / 2016 EQV) + 1 = 2020 EQV Ratio**
- To determine a municipality's SOL value:
 - **FY2019 SOL Value * 2020 EQV Ratio = FY2020 SOL Value**
- Note: SOL is revalued in even-numbered fiscal years (FY2020, FY2022, etc.).

In FY2020, reimbursable SOL in the Commonwealth was valued at \$3.15 billion, which represented 1.6% of the state's total value of tax-exempt land and properties (\$196 billion) and 0.21% of all property in the state (\$1.5 trillion).³³ As seen in Figure 1, the Commonwealth's total SOL value is climbing back to its FY2010 levels after several years of decline due to the Great Recession and dispositions of land.

³⁰ Massachusetts Department of Revenue, Division of Local Services. (2017, July). *2017 state owned land base year trend analysis*.

³¹ M.G.L. c. 58, § 13; Massachusetts Department of Revenue, Division of Local Services. (2020, January 14). *State-owned land program under M.G.L. c. 58, § 13-17: Frequently asked questions*.

³² Massachusetts Department of Revenue, Division of Local Services. (2020, January 14). *State-owned land program under M.G.L. c. 58, § 13-17: Frequently asked questions*; Meeting with Department of Revenue Staff, 2/27/2020. On file with DLM.

³³ Massachusetts Department of Revenue, Division of Local Services. (2020). *Exempt values as percent of total value – FY2020* [Data set]. <https://dls.gateway.dor.state.ma.us/reports/rdPage.aspx?rdReport=LA4.Totals>; Massachusetts Department of Revenue, Division of Local Services. (2020). *State-owned land values – FY2020* [Data set].

Figure 1—Total SOL Value in Massachusetts³⁴

FY	Total SOL Value	Net % Change
2009	\$3,294,617,486	
2010	\$3,291,454,362	-0.10%
2011	\$2,970,986,607	-9.74%
2012	\$2,981,907,389	0.37%
2013	\$2,980,948,319	-0.03%
2014	\$2,968,818,475	-0.41%
2015	\$2,688,626,816	-9.44%
2016	\$2,601,428,108	-3.24%
2017	\$2,721,004,524	4.60%
2018	\$2,723,593,992	0.10%
2019	\$2,877,592,333	5.65%
2020	\$3,146,119,500	9.33%
2021	\$3,168,553,800	0.71%

Due to their significant state land holdings, some municipalities are so heavily dependent on funds from the SOL PILOT Program that their SOL payments nearly equal their other state aid. Figure 2 shows that in FY2020, SOL represented one-fifth of all property value in Mount Washington and represented nearly one-tenth of all property value in municipalities such as Warwick, Hawley, Savoy, and Wendell. As a result, in FY2020 Warwick received \$98,401 from the SOL program, compared to \$135,051 in Unrestricted General Government Aid.³⁵ Similarly, Wendell received \$109,468 through the SOL program, compared to \$185,063 in Unrestricted General Government Aid.³⁶ The SOL for the remainder of the 297 municipalities that received SOL PILOT funds represents a smaller fraction of their communities' assessed values, but remain an important source of revenue.

³⁴ Note: SOL values for FY2019-FY2021 were retrieved by the DLS Municipal Databank. We calculated values prior to FY2019 by dividing the estimated full reimbursement for that fiscal year by that fiscal year's aggregate tax rate, and then multiplied by 1,000. A further explanation of this methodology is located in Appendix B. See also Massachusetts Department of Revenue, Division of Local Services. (2020). *State-owned land values – FY2019 [Data set]*. <https://dls.gateway.dor.state.ma.us/reports/rdPage.aspx?rdReport=BLA.StateOwnedLand>; Massachusetts Department of Revenue, Division of Local Services. (2020). *State-owned land values – FY2020 [Data set]*.

³⁵ Massachusetts Department of Revenue, Division of Local Services. (2019). *Final municipal cherry sheet estimates - FY2020 [Data set]*.

<https://dls.gateway.dor.state.ma.us/reports/rdPage.aspx?rdReport=CherrySheets.CSbyProgMunis.MuniBudgFinal>

³⁶ *Id.*

Figure 2—Municipalities with Significant SOL Holdings (FY2020)³⁷

Municipality	County	Notable SOL	Total SOL Acreage	SOL % of Total Property Value	PILOT Reimbursement	Share of Total Appropriation (\$30 Million)
Mount Washington	Berkshire	Mount Washington State Forest	8,409	20.00%	\$239,492	0.80%
Warwick	Franklin	Erving State Forest	11,757	10.62%	\$98,401	0.33%
Hawley	Franklin	Kenneth Dubuque Memorial State Forest	8,079	10.23%	\$57,635	0.19%
Savoy	Berkshire	Savoy Mountain State Forest	11,924	9.82%	\$79,254	0.26%
Wendell	Franklin	Wendell State Forest	8,075	9.26%	\$109,468	0.36%
Total:			<u>48,244</u> <u>acres</u>		<u>\$584,250</u>	<u>1.94%</u>

Land Acquisitions and Dispositions

The Division of Capital Asset Management and Maintenance (DCAMM) oversees much of the state's capital facilities, land, and improvements.³⁸ Under state law, the commissioner of DCAMM sets rules and regulations for state acquisition of real property that is held “in the name of the Commonwealth.”³⁹ Land acquisitions can be the result of a “gift, purchase, devise, grant, eminent domain, rental, rental-purchase or otherwise.”⁴⁰ DCAMM is also responsible for disposing of land and property that is no longer needed by the state.⁴¹

In addition, Article 97 of the State Constitution mandates the “protection of the people in their right to the conservation, development and utilization of the agricultural, mineral, forest, water, air and other

³⁷ Commonwealth of Massachusetts, Executive Office of Administration and Finance. (2020, February 14). *Report on the real property owned and leased by the Commonwealth of Massachusetts*. Report prepared by the Division of Capital Asset Management & Maintenance. <https://www.mass.gov/files/documents/2020/02/14/report-on-the-real-property-owned-and-leased-by-comm-of-ma.pdf>; Massachusetts Department of Revenue, Division of Local Services. (2020). *Exempt values as percent of total value – FY2020* [Data set]; Massachusetts Department of Revenue, Division of Local Services. (2020). *State-owned land values – FY2020* [Data set].

³⁸ Commonwealth of Massachusetts, Executive Office of Administration and Finance. (2020, February 14). *Report on the real property owned and leased by the Commonwealth of Massachusetts*; M.G.L. c. 7C, § 40.

³⁹ M.G.L. c. 7C, §§ 33, 40.

⁴⁰ M.G.L. c. 7C, § 1.

⁴¹ M.G.L. c. 7C, § 33.

natural resources.”⁴² The Executive Office of Energy and Environmental Affairs (EEA) oversees SOL that is protected under Article 97. The EEA also conducts “fee simple” land acquisitions, which are purchases or donations of a land parcel from an outside entity, as well as land dispositions upon consultation and approval by DCAMM officials.⁴³ Because Article 97 land has strong protections, land under the EEA’s authority is only removed under “exceptional circumstances.”⁴⁴

Finance

Like other local aid from the Commonwealth, SOL PILOT reimbursements are distributed to municipalities on a monthly basis. The level and extent of funding for the PILOT program changes each year, because the program is subject to legislative appropriation. In FY2020, the appropriation for the SOL PILOT Program was \$30,000,000—the highest amount allocated to the program since FY2009.⁴⁵ The FY2020 appropriation represented less than .07% of the state’s \$43.321 billion budget.⁴⁶ The median PILOT reimbursement for that fiscal year was \$49,989.⁴⁷

As seen in Figure 3, the SOL PILOT appropriation increased by 10%, or \$2.73 million, between FY2010 and FY2020. Over \$297 million in PILOT reimbursements were distributed to municipalities during this period.⁴⁸

⁴² art. 97 of the Amendments to the Massachusetts Constitution.

⁴³ 301 CMR 51.00; Massachusetts Executive Office of Energy and Environmental Affairs. (2020). *How is land protected?* <https://www.mass.gov/service-details/how-is-land-protected>

⁴⁴ Massachusetts Executive Office of Energy and Environmental Affairs. (1998, February 19). *EOEA Article 97 land disposition policy*. <https://www.mass.gov/files/dcsarticle97.pdf>

⁴⁵ Massachusetts Budget and Policy Center. (2020). *Budget browser: State owned land (1233-2400)*.

⁴⁶ Commonwealth of Massachusetts. (2019). *Budget summary –FY2020 enacted*. <https://budget.digital.mass.gov/summary/fy20/enacted/>

⁴⁷ Massachusetts Department of Revenue, Division of Local Services. (2020). *State-owned land values – FY2020* [Data set].

⁴⁸ Massachusetts Budget and Policy Center. (2020). *Budget browser: State owned land (1233-2400)*.

Figure 3—SOL PILOT Appropriation Trends⁴⁹

FY	Appropriation	Dollar Change From Previous Year	Percent Change From Previous Year
2009	\$30,300,000	n/a	n/a
2010	\$27,270,000	(\$3,030,000)	-10.00%
2011	\$25,270,000	(\$2,000,000)	-7.33%
2012	\$26,270,000	\$1,000,000	3.96%
2013	\$26,270,000	\$0	0%
2014	\$26,770,000	\$500,000	1.90%
2015	\$26,770,000	\$0	0%
2016	\$26,770,000	\$0	0%
2017	\$26,770,000	\$0	0%
2018	\$26,770,000	\$0	0%
2019	\$28,478,131	\$1,708,131	6.38%
2020	\$30,000,000	\$1,521,869	5.34%

The municipalities with the largest reimbursements have SOL holdings that are high in value but vary in size, as seen in Figure 4. The reimbursements to these 10 communities represented nearly 26% of the program’s legislative appropriation and, therefore, the state’s total SOL value.⁵⁰

Figure 4—Highest SOL PILOT Reimbursements (FY2020)⁵¹

Municipality	County	Notable SOL	Total SOL Acreage	PILOT Reimbursement	Share of Total Appropriation (\$30 Million)
Edgartown	Dukes	Manuel F. Correllus State Forest	2,848	\$1,465,372	4.88%
Bedford	Middlesex	Hanscom Field	683	\$1,022,863	3.41%

⁴⁹ *Id.* Note: At time of this report’s publishing the FY 2021 budget has not been signed into law. However, the Conference Committee budget (H.5164), the final recommendation of the Legislature to the Governor before possible gubernatorial approval or veto, funded the SOL line item at \$31,000,000. This represents a \$1,000,000 increase over the FY 2020 final budget appropriation.

⁵⁰ Massachusetts Department of Revenue, Division of Local Services. (2020). *State-owned land values – FY2020* [Data set].

⁵¹ Commonwealth of Massachusetts, Executive Office of Administration and Finance. (2020, February 14). *Report on the real property owned and leased by the Commonwealth of Massachusetts*; Massachusetts Department of Revenue, Division of Local Services. (2020). *Exempt values as percent of total value – FY2020* [Data set]; Massachusetts Department of Revenue, Division of Local Services. (2020). *State-owned land values – FY2020* [Data set].

Milton	Norfolk	Blue Hills Reservation	1,661	\$892,080	2.97%
West Tisbury	Dukes	Manuel F. Correllus State Forest	2,475	\$829,714	2.77%
Plymouth	Plymouth	Myles Standish State Forest	11,881	\$698,033	2.33%
Westport	Bristol	Horseneck Beach State Reservation	485	\$671,077	2.24%
Bourne	Barnstable	Camp Edwards	10,812	\$600,691	2.00%
Sandwich	Barnstable	Camp Edwards	9,099	\$579,153	1.93%
Concord	Middlesex	Walden Pond State Reservation	897	\$570,619	1.90%
Framingham	Middlesex	Framingham State University	846	\$465,122	1.55%
Total:			<u>41,687 acres</u>	<u>\$7,794,724</u>	<u>25.98%</u>

Case Study: Land Acquisitions' Impact on PILOTs

In 2020, the Governor signed legislation that will switch ownership of a parcel of land in the Town of Bridgewater from the Department of Correction (DOC) to the Department of Fire Services (DFS).⁵² This change is significant because, while DOC land is eligible for the SOL PILOT Program, DFS is not listed as an eligible agency, meaning that municipalities do not receive PILOT reimbursements for DFS-owned land in their communities.⁵³ As a result, Bridgewater will lose some of its SOL PILOT reimbursements, even though a state agency will still own the parcel.

What happens when the state transfers a town's SOL to another agency that doesn't participate in the SOL PILOT Program? For example, Bridgewater had SOL valued at \$37,847,000 in FY2020 and received a PILOT reimbursement of \$360,892.⁵⁴ If the Commonwealth transferred \$2 million worth of land in Bridgewater to another agency not participating in the program, the town's share of SOL value will go down. Because the SOL PILOT payments are a function of both the legislative appropriation and the community's overall share of SOL, Bridgewater's PILOT reimbursement will go down by 0.6%, or at least \$18,854, as seen in Figure 5. The \$18,854 will be redistributed to other municipalities in the program. The largest monetary redistributions will go to the cities and towns with the largest SOL values listed in Figure 4, such as Edgartown and Bedford.

⁵² St. 2020, c. 177.

⁵³ Please note that Bridgewater, alongside other municipalities that host houses of correction, receive an additional state reimbursement from the Department of Corrections, under line item 8900-0001. See also Commonwealth of Massachusetts. (2019). *Budget summary – FY2020 enacted*. <https://budget.digital.mass.gov/summary/fy20/enacted/>

⁵⁴ Massachusetts Department of Revenue, Division of Local Services. (2020). *State-owned land values – FY2020* [Data set].

Figure 5—Town of Bridgewater: SOL Scenarios in FY2020⁵⁵

	FY2020 SOL Value	If SOL Decreased by \$2 Million	If SOL Increased by \$2 Million
SOL Value	\$37,847,000	\$35,847,000	\$39,847,000
PILOT Reimbursement	\$360,892	\$342,039	\$379,722
Share of PILOT Appropriation	1.20%	1.14%	1.27%
Increase/Decrease from FY2020 PILOT	-	(\$18,854)	\$18,830
PILOT Redistribution to Other Municipalities	-	Over \$18k redistributed to other municipalities' reimbursements; increases from \$1 to \$932	Over \$18k in reduced reimbursements to municipalities; reductions from (\$1) to (\$931)

If the state acquired an additional \$2 million in eligible SOL in Bridgewater, the opposite would occur. Because Bridgewater's share of SOL will increase, its PILOT reimbursement will increase at a similar rate (at least \$18,830). Every other municipality in the program will see a reduction in its reimbursement to cover Bridgewater's increases. In this case, the largest reductions in reimbursements will come from municipalities with the largest SOL values.

Outside of general year-to-year growth of land values, there will be some communities that will gain in value due to a land acquisition. There will also be communities that had some of their SOL sold or transferred to other entities. As a result, this shifting dynamic alters reimbursements to *all municipalities* each year.

Case Study: DCR Watershed PILOT Program (M.G.L. c. 59, § 5G)

The Commonwealth runs a parallel PILOT program for watershed land under the control of the DCR, which was enacted into law in 1984.⁵⁶ This program was established as a result of actions to compensate communities for the protected watersheds within their borders that serve as the MWRA's water

⁵⁵ *Id.*

⁵⁶ St. 1984, c. 372 § 40A; St. 1987 c. 564 § 52.

supply.⁵⁷ The MWRA provides water to 51 communities and has a service area that includes 40% of the population of the Commonwealth.⁵⁸

The Watershed PILOT Program provides reimbursements to 29 communities that share boundaries with the Quabbin, Wachusett, Ware, and Sudbury watersheds. There are also payments to communities with annexed land of the former towns of Dana, Greenwich, Prescott, and Enfield that were flooded to establish the Quabbin Reservoir.⁵⁹ In recent years, reimbursements to municipalities under the Watershed PILOT Program had a small increase, as seen in Figure 6:

Figure 6—Watershed PILOT Funding Trends⁶⁰

FY	Total Reimbursements
2015	\$7,966,612
2016	\$8,128,726
2017	\$8,190,986
2018	\$8,249,177
2019	\$8,255,642
2020	\$8,355,687

The Watershed PILOT shares some other similarities with the SOL PILOT Program. Both programs rely on the DOR to assess and revalue their land, using protocols implemented by the Municipal Modernization Act.⁶¹

The most significant difference between the programs involves what happens to the watershed property values to calculate PILOT reimbursements, as identified in the formulas listed in Figure 7. Under the Watershed PILOT Program, the watershed land value in each community is multiplied by the community's commercial tax rate in order to calculate that year's reimbursement.⁶² In contrast, under the SOL PILOT Program, a community's reimbursement is calculated by multiplying its percentage of

⁵⁷ M.G.L. c. 59 § 5G.

⁵⁸ Massachusetts Water Resources Authority. (2019, August 13). *About MWRA*. <http://www.mwra.com/02org/html/whatis.htm>

⁵⁹ Massachusetts Department of Conservation and Recreation, Office of Watershed Management. (2020). *Watershed payments in lieu of taxes (PILOT)*.

⁶⁰ Massachusetts Department of Conservation and Recreation, Office of Watershed Management. (2020). *Watershed payments in lieu of taxes (PILOT)*.

⁶¹ St. 2016 c. 218 § 108.

⁶² M.G.L. c. 59, § 5G.

total SOL value by the legislative appropriation. Moreover, the Watershed PILOT Program has a hold-harmless provision that prevents reimbursements from dropping year to year based on lower property values, while the SOL PILOT Program does not. As a result, reimbursements under the watershed program do not decrease except for the rare circumstance when land is removed from the program.⁶³ Another difference is that the Watershed PILOT Program is not funded through a legislative appropriation. Instead, funding comes from the watershed management budget of the MWRA, which comes from user fees instead of the state budget.⁶⁴

Figure 7—Reimbursement Formulas—SOL vs. Watershed PILOT

<u>SOL PILOT</u>	<u>Watershed PILOT</u>
(Municipality's SOL Value / Total Statewide SOL Value) * Legislative Appropriation ⁶⁵	(Municipality's DCR Watershed Land Values / 1,000) * Municipality's Commercial Tax Rate ⁶⁶

2. Solar Facility PILOTs (M.G.L. c. 59, § 38H(b))

The second PILOT program that this report will address involves solar facility PILOTs. Solar facilities use solar photovoltaic (PV) arrays, which electronically transform solar energy into electricity through mechanical hardware (semiconductors) to power homes and businesses.⁶⁷ Solar installations vary in generating capacity, panel size, and supporting equipment. Traditionally, there would be personal property tax due on the value of the equipment for a commercial use, as well as real property tax on the underlying land. Under M.G.L. c. 59, § 38H(b), however, a municipality may enter into a PILOT agreement with an electric “generation company” or “wholesale generation company” to replace taxes on the value of the company’s generating facilities in the community.⁶⁸ This statute covers PILOT agreements for conventional power plants as well as facilities using renewable energy, such as solar and

⁶³ Meeting with DCR Division of Water Supply Staff Members, 4/30/20. On file with DLM; Meeting with MWRA Staff Members; 8/7/20. On file with DLM.

⁶⁴ Meeting with DCR Division of Water Supply Staff Members, 4/30/20; Massachusetts Department of Conservation and Recreation, Office of Watershed Management. (2020). *Watershed payments in lieu of taxes (PILOT)*.

⁶⁵ M.G.L. c. 58 § 13-17; Massachusetts Department of Revenue, Division of Local Services. (2020, January 14). *State-owned land program under M.G.L. c. 58, § 13-17: Frequently asked questions*.

⁶⁶ Massachusetts Department of Conservation and Recreation, Office of Watershed Management. (2020). *Watershed payments in lieu of taxes (PILOT)*.

⁶⁷ Solar Energy Industries Association. (2020). *Photovoltaics*. <https://www.seia.org/initiatives/photovoltaics>

⁶⁸ Massachusetts Department of Revenue, Division of Local Services. (2017, August). *Informational guideline release (IGR) No. 17-26 – Valuation and taxation of electric generating facilities*. <https://dls.gateway.dor.state.ma.us/gateway/DLSPublic/IgrMaintenance/714>

wind power.⁶⁹ Under this provision of state law, municipalities are supposed to receive the equivalent of full tax payments from these facilities through the PILOTs.⁷⁰

Solar facility PILOTs provide a stable and predictable source of revenue to the municipalities and offer some measure of security to generation facilities by allowing them to anticipate future tax payments.⁷¹ They also allow municipalities to enjoy the benefits of welcoming renewable energy into their communities without the risk of losing tax revenues. Recent examples of solar installations in Massachusetts that have PILOT agreements with municipalities include projects in Rehoboth and Rochester, which are located on large plots of land such as former landfill sites.⁷²

Figure 8—Selected Solar Installations with PILOT Agreements



Community Solar Array (Rehoboth, MA)⁷³

Size: 1 Megawatt



Little Quittacas Solar Project (Rochester, MA)⁷⁴

Size: 4.5 Megawatt

Legal and Legislative Analysis

Eligibility

Under Massachusetts law, “generation company” is defined as “a company engaged in the business of producing, manufacturing or generating electricity or related services or products, including but not

⁶⁹ M.G.L. c. 59, § 38H(b); Massachusetts Department of Revenue, Division of Local Services. (2017, August). *Informational guideline release (IGR) No. 17-26 – Valuation and taxation of electric generating facilities*.

⁷⁰ *Id.*; Meeting with Concord Town Assessor, 5/6/20. On file with DLM.

⁷¹ Meeting with Concord Town Assessor, 5/6/20. On file with DLM.

⁷² BlueWave. (2020). *Rochester, MA*. <http://bluewave-capital.co.za/projects/rochester-ma/>; Larocque, M. (2014, August 14). *New solar array in Rehoboth unveiled*. The Enterprise. <https://www.wickedlocal.com/article/20140814/NEWS/140818356>

⁷³ Larocque, M. (2014, August 14). *New solar array in Rehoboth unveiled*.

⁷⁴ BlueWave. (2020). *Rochester, MA*.

limited to, renewable energy generation attributes for retail sale to the public.”⁷⁵ Many of the state’s large-scale solar farms and facilities with a capacity of over 1 megawatt (MW) are operated by developers that fit the legal definition of “generation company.” (For reference, a 1 MW solar facility in Massachusetts, which produces 1,000 kilowatts [kW] of electricity, can power over 164 households).⁷⁶

These large solar companies and developers, however, cannot participate in net metering or own net metering facilities, according to regulations promulgated by the Department of Public Utilities.⁷⁷ Net metering allows owners of solar facilities to offset the cost of their electric bills by transferring any excess energy produced by their renewable energy facilities back to their electric companies for a credit.⁷⁸ In decades past, it was not uncommon for residential installations to directly power hot water heaters. Today, the connection goes outside the home to the electric grid. Electric customers are therefore billed for the net difference between their electricity usage and what they produce (or receive net metering credits if their electrical production outpaces their usage). Net metering incentivizes consumers to build their own small solar facilities and also permits customers of community solar projects to sell electricity back to the grid.

Although net metering was initially established for small (under 30 kW) solar installations, an expansion of the program in 2009 allowed privately owned mid-sized solar farms (up to 2 MW) to participate.⁷⁹ However, larger solar installations and generation facilities cannot take advantage of this program.

PILOT Agreement Components

Under a PILOT agreement, the generation company must make payments that are the “equivalent of the property tax obligation based on full and fair cash valuation.”⁸⁰ According to the DOR’s Division of Local Services (DLS), the following are among the components necessary for a solar facility PILOT agreement:

- a mechanism that represents taxes at full and fair cash valuation;

⁷⁵ M.G.L. c.164, § 1

⁷⁶ Billman, G. (2018, February 26). *Massachusetts reaches 2,000 MW of solar installations*. Massachusetts Clean Energy Center. <https://www.masscec.com/blog/2018/02/26/massachusetts-reaches-2000-mw-solar-installations>

⁷⁷ Massachusetts Department of Public Utilities, Electric Power Division. (2020). *Net metering eligibility*. <https://www.mass.gov/service-details/net-metering-eligibility>; 220 CMR 18.06.

⁷⁸ Massachusetts Department of Public Utilities, Electric Power Division. (2020). *Net metering guide*. <https://www.mass.gov/guides/net-metering-guide>

⁷⁹ *Id.*; Massachusetts Department of Public Utilities, Electric Power Division. (2020). *Net metering laws and regulations*. <https://www.mass.gov/info-details/net-metering-laws-and-regulations>

⁸⁰ M.G.L. c. 59 § 38H(b).

- estimated projections by municipal assessors of the initial cash valuation and tax payments of the renewable energy system for each year of the PILOT agreement;⁸¹
- a formula or fixed values to determine values of the solar facility over the life of the agreement;
- a term limit for the PILOT agreement with the generation company;
- approval of the agreement by the municipality's legislative body or authorization of the chief executive officer to negotiate on the municipality's behalf;
- documentation of the agreement provided to the DOR's Bureau of Local Assessment; and
- recordkeeping and reporting of the agreement values.⁸²

The PILOT agreement customarily provides that payments do not decrease as the value of the facility declines over time through depreciation. The PILOT can be structured with consistent payments to avoid larger payments at the start of the agreement. PILOT agreements can last for a "reasonable term," but the DLS recommends they not last longer than the useful life of a solar installation (generally between 20 and 30 years for the average solar PV system).⁸³

If the solar developer owns the land on which the solar equipment is placed, the equipment can be assessed as real property if it is to remain on the site for its useful life, or as personal property if the equipment will be replaced periodically.⁸⁴ Some issues arise, however, when the owner of the land is not the solar developer that provides the equipment. If the solar equipment is treated as real estate, the landowner will be taxed for the increase in the property's value caused by the presence of the equipment. If the equipment is treated as personal property, installations are assessed to the solar developer, not the landowner.⁸⁵

Taxable Status of Solar Arrays (M.G.L. c. 59, § 5, cl. 45)

The provisions of M.G.L. c. 59, § 38H(b) are undercut by a property tax exemption provided under M.G.L. c. 59, § 5, cl. 45 for any

⁸¹ Some PILOT agreements on file with DLM have provisions that result in small increases in payments each year. *See also* Massachusetts Department of Revenue, Division of Local Services, *City & Town* (2017, June 1), at 7. <https://www.mass.gov/doc/17ctown-june1pdf/download>

⁸² Department of Revenue, Division of Local Services, *City & Town* (2017, June 1), at 6-8.

⁸³ *Id.* at 7; Solar Energy Industries Association. (2020). *Recycling & end-of-life considerations for photovoltaics*. <https://www.seia.org/initiatives/recycling-end-life-considerations-photovoltaics>

⁸⁴ Barnes, J., Laurent, C., Uppal, J., Barnes, C., and Heinemann, A. (2013, July). *Property taxes and solar PV systems: Policies, practices, and issues*, at 29-31. Report prepared by U.S. Department of Energy, North Carolina Solar Center, and Meister Consultants Group. <https://solar.gwu.edu/property-taxes-and-solar-pv-systems-policies-practices-and-issues>; Massachusetts Department of Revenue, Division of Local Services, *City & Town* (2012, March), at 3-4. On file with DLM.

⁸⁵ Department of Revenue, Division of Local Services. *City & Town* (2017, June 1), at 6.

*[s]olar or wind powered system or device which is being utilized as a primary or auxiliary power system for the purpose of heating or otherwise supplying the energy needs of property taxable under this chapter; provided, however, that the exemption under this clause shall be allowed only for a period of twenty years from the date of the installation of such system or device.*⁸⁶

The original intent of Clause 45, which was enacted in 1975 and revised in 1978,⁸⁷ was to provide an exemption to owners of residential properties who wanted to use off-grid rooftop panels to supply electricity to their properties.

Clause 45, however, has generated a great deal of controversy in the current age of solar farms. Between 2014 and 2017, the ATB rendered decisions on cases from the towns of Westborough, Swansea, and Barre and interpreted the clause as exempting *both residential and commercial solar arrays* from property taxes.⁸⁸ The ATB held in each of these decisions that a solar operator cannot be taxed if its solar facility is supplying power to a property that pays taxes, regardless of whether the energy generated is used on the property where the facility is located or on another property.⁸⁹

The ATB's interpretation of Clause 45 in these cases has also allowed solar developers that participate in net metering and supply electricity to other properties through the electrical grid to be eligible for the solar exemption.⁹⁰ In 2020, the ATB also rendered decisions on cases from the towns of Framingham and West Bridgewater and held, based on the language of Clause 45, that a solar facility that supplies net metering credits for nontaxable properties such as municipal buildings is *taxable*.⁹¹

The ATB decisions have increased the importance of PILOT agreements as a method to guarantee a steady source of revenue to communities from solar installations.⁹² Municipalities can negotiate a PILOT agreement with a solar developer, regardless of whether the installation qualifies for the exemption. Although some developers recognize the need to pay their fair share of taxes, others have sought to

⁸⁶ M.G.L. c. 59, § 5, Cl. 45; see also *KTT, LLC v. Board of Assessors of Swansea*, Mass. Appellate Tax Bd., No. ATB 2016-426, slip op. (Oct. 13, 2016) On file with DLM.

⁸⁷ St. 1975, c. 734; St. 1978, c. 388.

⁸⁸ *Forrestall Enterprises, Inc. v. Board of Assessors of the Town of Westborough*, No. ATB 2014-1025 (Appellate Tax Bd., Dec. 4, 2014). On file with DLM; *KTT, LLC v. Board of Assessors of the Town of Swansea*, No. ATB 2016-426 (Mass. Appellate Tax Bd., Oct. 13, 2016). On file with DLM; *Quabbin Solar, LLC v. Board of Assessors of the Town of Barre*, No. ATB 2017-480 (Mass. Appellate Tax Bd., Nov. 2, 2017). On file with DLM.

⁸⁹ *Id.*

⁹⁰ Further details on recent ATB decisions can be seen in Appendix C.

⁹¹ See *PelleVerde Capital, LLC v. Board of Assessors of the Town of West Bridgewater* (Mass. Appellate Tax Bd., May 29, 2020). On file with DLM; *United Salvage Corp. of America v. Board of Assessors of the City of Framingham* (Mass. Appellate Tax Bd., May 29, 2020). On file with DLM.

⁹² Massachusetts Department of Revenue, Division of Local Services. (2017, August). *Informational guideline release (IGR) No. 17-26 – Valuation and taxation of electric generating facilities*, at 5.

avoid or minimize property taxes on their solar installations. This effort has led to difficult interactions between municipal officials and solar developers in recent years, such as the following:

- disputes over assessments of equipment;
- solar developers requesting tax abatements on equipment;
- moratoriums on solar installations after multiple agreements with developers; and
- a reluctance in some municipalities to participate in PILOT agreements.⁹³

Case Study: Solar Facility PILOTs in New York

New York provides a different model for dealing with the taxation of solar facilities. New York has a 15-year real property tax exemption (NY RPTL § 487) for renewable energy systems.⁹⁴ An exemption is granted for the “value that a solar electric system adds to the overall value of the property.”⁹⁵ Unlike those in Massachusetts, municipalities in New York have the choice to opt out of the exemption for renewable energy projects in their communities. If a city or town does not opt out, it may participate in PILOT agreements with solar developers overseeing projects larger than 1 MW.⁹⁶

In order to help New York communities that are having trouble assessing solar facilities or developing PILOT agreements, the New York State Energy Research and Development Authority established a Solar PILOT Toolkit for local governments.⁹⁷ The toolkit includes a template for a “Model Solar PILOT Law,” which would allow a municipality to establish the legal authority for a jurisdiction-wide agreement process with developers. There is also a “Model Solar PILOT Agreement” for communities that would rather negotiate terms and conditions on a project-by-project basis, as well as a calculator that helps municipalities calculate PILOT rates with solar developers.

3. Summary

In the sections above, we reviewed significant issues regarding two important programs to replace lost property tax collections by cities and towns. The discussion of the SOL program highlighted the complexity of the reimbursement system in place since the enactment of the Municipal Modernization

⁹³ See Findings and Recommendations section for more information.

⁹⁴ NY Real Property Tax Law § 487.

⁹⁵ New York State Energy Research and Development Authority. (2016, August). *Understanding New York State’s Real Property Tax Law § 487* [Fact sheet]. <http://www.townofcaroline.org/uploads/6/2/7/8/62781479/real-property-tax-law-487.pdf>

⁹⁶ New York State Energy Research and Development Authority. (2020, June). *New York solar guidebook for local governments*. <https://www.nyseda.ny.gov/All%20Programs/Programs/Clean%20Energy%20Siting/Solar%20Guidebook>

⁹⁷ *Id.*

Act of 2016. The fixed level of the state appropriation for the program causes some distortion in PILOT reimbursements, as the appropriation has traditionally underfunded the program and disadvantaged communities with lower-than-average or stagnant growth in land value. In the following section of the report, we discuss findings and recommendations aimed at improving the provision of reimbursements and providing a higher level of appropriation.

We also discussed how property taxation of solar power equipment varies by the size and nature of the installation. While stakeholders broadly agree on the use of tax exemptions for smaller solar projects, such as residential installations to provide the power needs of a home, a series of ATB decisions has created uncertainty among municipal authorities about taxing the larger solar projects. PILOT agreements help adjust for this concern, but are currently negotiated in an unstable legal environment as continuing ATB appeals weaken the hand of communities in negotiation. We present findings and recommendations aimed at improving the treatment of solar installations by the PILOT program. We also highlight potential legislative solutions to address the concerns raised in the report, including the taxable status of solar installations.

FINDINGS: STATE-OWNED LAND PILOT PROGRAM

1. The SOL PILOT Program has been underfunded for decades.

The SOL PILOT Program relies on a legislative appropriation in order to distribute reimbursements to municipalities. However, in the last twenty years, appropriations for the program have not fully funded its statutory obligation to reimburse cities and towns. When DLM last examined the program in 2001, DLM estimated that fully funding the program would cost at least \$30.8 million each year. At the time of DLM’s analysis, however, the program had a \$21 million appropriation.⁹⁸ Nineteen years later, the SOL appropriation for FY2020 was \$30 million—the highest appropriation since FY2009 (\$30.3 million).⁹⁹ While the program’s appropriation remained flat at close to \$30 million between the peaks of FY2009 and FY2020 (see Figure 3), property tax collections across the state increased by 57% during the same time period, further illustrating the disadvantages to communities heavily dependent on SOL PILOT payments.¹⁰⁰ As seen by these financial trends, the SOL PILOT Program’s appropriation does not constitute full funding, as discussed below.

In the past, the DOR determined what would constitute a full reimbursement for the SOL PILOT Program by using a three-year aggregate statewide tax rate.¹⁰¹ The DOR calculated this tax rate by dividing the total tax levy of all properties in the state by their total assessed value.¹⁰²

$$(\text{Total Statewide Tax Levy} / \text{Total Statewide Assessed Value}) * 1000$$

Because the DOR stopped calculating an approximation of full funding in FY2019, DLM used the Department’s formula to estimate a full PILOT reimbursement for SOL for FY2020.¹⁰³ Based on the DOR’s formula, we expect that the Legislature would have needed to distribute at least \$45,650,194 to fully fund the SOL program in FY2020, using the current calculation of land values multiplied by the aggregate

⁹⁸ Massachusetts Office of the State Auditor, Division of Local Mandates. (2001, June). *Payments in lieu of taxes (PILOT) for state owned land: Chapter 58 of the Massachusetts General Laws – a report to the FY 2002 budget conference committee*. <https://www.mass.gov/doc/payment-in-lieu-of-taxes-pilot-june-2001/download>

⁹⁹ Note: At time of this report’s publishing, the FY2021 budget has not been signed into law. However, the Conference Committee budget (H.5164), the final recommendation of the Legislature to the Governor before possible gubernatorial approval or veto, funded the SOL line item at \$31,000,000. This represents a \$1,000,000 increase over the FY2020 final budget appropriation. See Figure 3 for historical appropriation data of the SOL PILOT Program.

¹⁰⁰ Massachusetts Department of Revenue, Division of Local Services. (2020). *Tax levy by class*.

<https://dls.gateway.dor.state.ma.us/reports/rdPage.aspx?rdReport=PropertyTaxInformation.TaxLevies.LeviesByClass>

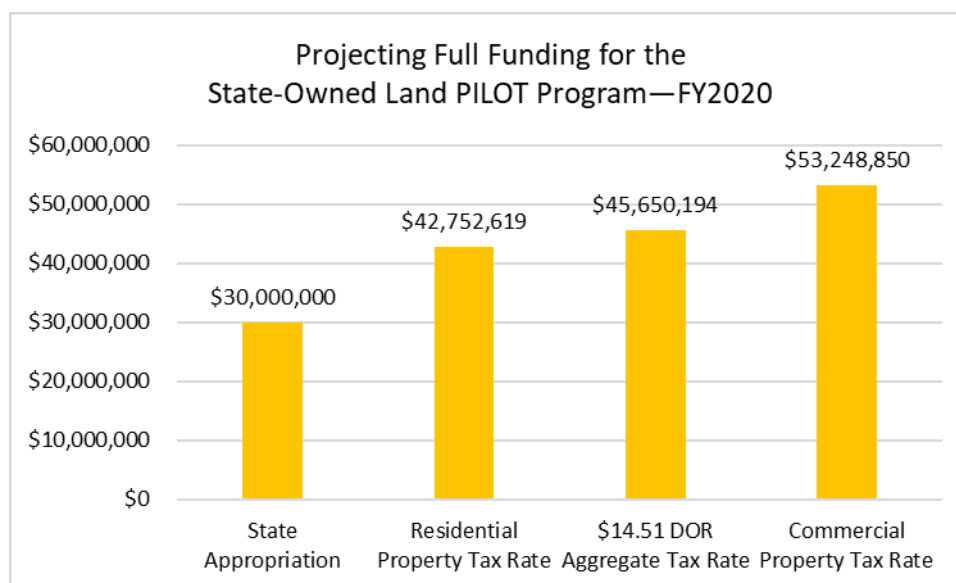
¹⁰¹ Note: DLM, in an earlier analysis from 2001, referred to DOR’s aggregate statewide tax rate as an “equalized statewide property tax rate.” See Massachusetts Office of the State Auditor, Division of Local Mandates. (2001, June). *Payments in lieu of taxes (PILOT) for state owned land: Chapter 58 of the Massachusetts General Laws – a report to the FY 2002 budget conference committee*, at 4.

¹⁰² M.G.L. c. 58 § 17, effective to December 31, 2017; M.G.L. c. 63 § 58.

¹⁰³ Note: For FY2020, DLM retrieved total values and tax levies for FY2016, FY2017, and FY2018 to calculate the three-year aggregate tax rate while using DOR’s methodology. See Appendix B for detailed methodology.

statewide rate. Unfortunately, the appropriation for that fiscal year covered only 65.72% of total funding needed under this approach, or a \$15,650,194 shortfall.

Figure 9—Funding Approaches to the SOL PILOT Program¹⁰⁴



It may be possible to approximate another path to full reimbursement for SOL by looking at the Watershed PILOT Program that is also run by the state. As mentioned earlier, the Watershed PILOT Program calculates reimbursement for a municipality by multiplying the municipality’s watershed land value by its commercial tax rate for that fiscal year.¹⁰⁵ Using this methodology, we estimate the Legislature would have needed to appropriate at least \$53,248,850 for the SOL program in FY2020, using the current calculation of land values and municipalities’ FY2020 commercial tax rates. The existing SOL appropriation, however, would cover only 56.34% of needed funding under this approach, or a \$23,248,850 shortfall.

Using residential property tax rates to estimate full funding of the SOL PILOT Program would be another option. Residential tax rates were previously recommended by regional planning commissions in central

¹⁰⁴ Note: Model was constructed using data from DLS and projecting estimates based on various funding approaches. See methodology in Appendix B for further detail. Data from: Massachusetts Department of Revenue, Division of Local Services. (2020). *State-owned land values – FY2020* [Data set]; Massachusetts Department of Revenue, Division of Local Services. (2020). *DCR water supply protection land values – FY2020* [Data set]; Massachusetts Department of Revenue, Division of Local Services. (2020). *DCR water supply protection annexed land values – FY2020* [Data set]; Massachusetts Department of Revenue, Division of Local Services. (2020). *Average single family tax bill* [Data set].

¹⁰⁵ Note: see “Case Study: DCR Watershed PILOT Program (M.G.L. c. 59 § 5G)” on p. 18 for more information.

and western Massachusetts in the late 1980s as a basis for reimbursement to communities for SOL.¹⁰⁶ If reimbursements were determined by multiplying each community's SOL value by its current residential tax rate, we estimate that this approach would have required the Legislature to appropriate at least \$42,752,619 in FY2020.¹⁰⁷ The existing appropriation would cover 70.17% of needed funding, or a \$12,752,619 shortfall, under this method.

2. The current formula disadvantages communities with slowly increasing or declining property values.

Although the SOL formula relied on land values to calculate reimbursements for years, new methods to value SOL from the Municipal Modernization Act, which went into effect in FY2019, have exacerbated the disadvantage to communities with slowly increasing or declining property values. Under the provisions of the Act, municipalities received an initial base value for their SOL.¹⁰⁸ The base values are revalued every two years and are adjusted by a ratio representing the growth in a community's equalized valuation.¹⁰⁹ SOL values will increase in a municipality if the community's *overall* property growth has increased, yet property growth varies across cities and towns in the Commonwealth.¹¹⁰ The pace of a municipality's property growth (or lack thereof) influences how reimbursements are distributed in the SOL formula.

A PILOT reimbursement is based on a ratio of each community's SOL value to the value of all SOL in the entire state. These changes in reimbursement favor municipalities that experience growth in SOL values that is faster than the statewide average. Municipalities that have stagnant or slowly increasing SOL values receive reductions in funding under the formula. Municipalities that cannot catch up to communities with increasing land values will experience lower reimbursements over time, and the effects will be more profound if the program's appropriation is reduced or remains level.

As a result, urban and suburban areas in the eastern part of the state, especially affluent ones, are the largest recipients of the program's reimbursements. Rural, less affluent areas in central and western

¹⁰⁶ Berkshire County Regional Planning Commission, Central Massachusetts Regional Planning Commission, Franklin County Planning District, & Pioneer Valley Planning Commission. (1987, June). *The impact of state-owned land and facilities on local governments*. Report prepared for the Executive Office of Communities and Development. On file with DLM.

¹⁰⁷ Note: based on using current calculation of land values and municipalities' FY2020 residential tax rate.

¹⁰⁸ Note: FY2019 PILOT reimbursements were determined from the base value of a municipality's SOL on January 1, 2017. See "Valuing SOL", at 8.

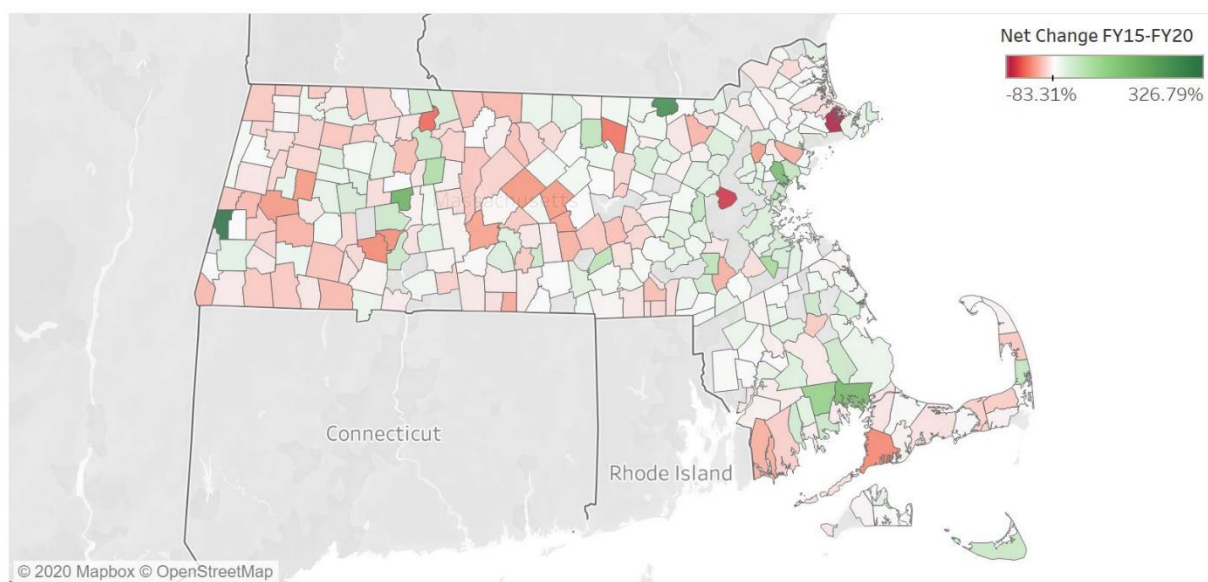
¹⁰⁹ See textbox "How SOL is Revalued", at p. 12.

¹¹⁰ Note: Staff members from the Department of Revenue (email correspondence, 10/2/2020) have indicated that increases to a municipality's SOL value can be attributed to various variables, such as the number and size of prime lots, a difference in the land prices in a particular location, and the acreage of excess and unbuildable land.

Massachusetts receive declining PILOT reimbursements. Figure 10 shows that pockets of central and western Massachusetts, as well as other communities in southeastern and northeastern Massachusetts, received decreased SOL reimbursements over the period between FY2015 and FY2020. At least 56 municipalities in the central and western regions faced lower PILOT payments over the same period, compared to at least 14 communities located in the eastern part of the state.

Figure 10—Net Change in SOL PILOT Reimbursements¹¹¹

Net Change in SOL PILOT Reimbursements FY2015-FY2020



Map based on Longitude (generated) and Latitude (generated). Color shows sum of Net Change FY2015-FY2020. Details are shown for Town. The data is filtered on FY2015 PILOT, which ranges from \$2 to \$1,273,939. The view is filtered on Town, which excludes East Bridgewater.

We continue to see this east-west divide when we compare communities with similar SOL values and PILOT reimbursements. For example, in Figure 11, the towns of Duxbury, Sheffield, and Warwick had similar SOL values in FY2020. A closer look reveals that Duxbury was the only municipality that received a higher PILOT reimbursement in FY2020, while Sheffield and Warwick lost reimbursements. Duxbury experienced the highest rate of property value growth, which is reflected in the 10.63% increase in SOL value in FY2020. Sheffield experienced declining property values (by 5.38%), which resulted in a lower

¹¹¹ Note: East Bridgewater was excluded for this analysis due to the town being an extreme outlier in the map. See Appendix B for further methodology. See also Massachusetts Department of Revenue, Division of Local Services. (2020). *State-owned land values – FY2020 [Data set]*; Massachusetts Department of Revenue, Division of Local Services. (2020). *Municipal cherry sheet, receipts, & charges [Data set]*. https://dls.gateway.dor.state.ma.us/reports/rdPage.aspx?rdReport=CherrySheets.CSbyProgMunis.cs_prog_munis

PILOT reimbursement. Warwick increased its SOL value by 2.93%, but the increase was not large enough to warrant an increased reimbursement under the parameters of the formula.¹¹²

Figure 11—Comparing SOL PILOT Values and Reimbursements¹¹³

	Duxbury (Plymouth County)	Sheffield (Berkshire County)	Warwick (Franklin County)
FY2019 SOL Value	\$9,553,400	\$11,068,700	\$10,025,600
FY2020 Equalized Valuation Ratio	1.1063	0.9462	1.0293
FY2020 SOL Value	\$10,568,900	\$10,473,200	\$10,319,400
FY2019 PILOT	\$89,022	\$103,142	\$111,218
FY2020 PILOT	\$100,779	\$99,867	\$98,400
Net Change from FY2019 to FY2020 PILOT	13.21%	(3.18%)	(11.53%)

In some instances, communities with declining or slow property value growth will increase their SOL values by accumulating more SOL, but it might not protect them from a reduced PILOT reimbursement. In FY2020, 56 cities and towns acquired additional SOL, but at least 15 of these municipalities had a lower PILOT reimbursement than in the previous year.¹¹⁴ At least 12 of the 15 municipalities were located in central or western Massachusetts. For example, Williamstown accumulated over 363 additional acres of SOL, but lost over \$13,863, or 8%, of its PILOT reimbursements between FY2019 and FY2020. In addition, the town of Peru accumulated over 141 additional acres of SOL, yet lost over \$19,867, or 29.16%, of its PILOT reimbursements during the same period.¹¹⁵

3. Municipalities receive higher reimbursements for lands in the Watershed PILOT Program than for their SOL PILOT Program lands.

Although the SOL PILOT Program is constrained by its formula and a fixed appropriation, a similar program —the DCR Watershed PILOT Program—does not have these limitations. As previously

¹¹² Massachusetts Department of Revenue, Division of Local Services. (2020). *State-owned land values – FY2020* [Data set].

¹¹³ *Id.*; Massachusetts Department of Revenue, Division of Local Services. (2020). *Municipal cherry sheet, receipts, & charges* [Data set].

¹¹⁴ Massachusetts Department of Revenue, Division of Local Services. (2020). *State-owned land values – FY2020* [Data set].

¹¹⁵ It may be possible that some of the largest reductions in PILOT reimbursements are attributed to the hold harmless provision that was put in place for the program in FY2019. For more information, see SOL Finding 3.

discussed, the Watershed PILOT Program has reimbursed communities at 100% of the legislative formula each year with a dedicated revenue source (MWRA).¹¹⁶ Officials from DCR and the MWRA have reported no complaints about reimbursement rates under the Watershed PILOT Program, unlike the calls for increased funding under the SOL PILOT Program.¹¹⁷

DLM investigated differences between the SOL and Watershed PILOT programs and identified 26 communities that participate in both programs. Estimates from the communities indicate a range in land values from \$12/acre to \$1,216/acre in the Watershed PILOT Program and a range of values from \$11/acre to \$550/acre in the SOL PILOT Program.¹¹⁸ In FY2020, these cities and towns collectively received over \$8.3 million in PILOT reimbursements from the watershed program, compared to only \$2.2 million in SOL PILOT reimbursements.¹¹⁹

There is also a significant variation in the level of reimbursements communities receive for every \$1,000 of value across the two programs.¹²⁰ Although SOL PILOT reimbursements are distributed by the share of a community's SOL to the state, every city and town is reimbursed at a rate of \$9.54 for every \$1,000 of value due to a fixed appropriation. The Watershed PILOT Program instead relies on individual communities' commercial tax rates. Communities are reimbursed for their watershed lands at rates between \$14.82 per \$1,000 of value and \$81 per \$1,000 of value, as seen in Appendix B. Figure 12 shows an example of this variation in reimbursements.

¹¹⁶ Note: see "Case Study: DCR Watershed PILOT Program (M.G.L. c. 59 § 5G)" and SOL Finding 1 for more information.

¹¹⁷ Meeting with DCR Division of Water Supply Staff Members, 4/30/20. On file with DLM; Meeting with MRWA Staff Members, 8/7/2020. On file with DLM.

¹¹⁸ Massachusetts Department of Revenue, Division of Local Services. (2020). *DCR water supply protection land values – FY2020* [Data set].; Massachusetts Department of Revenue, Division of Local Services. (2020). *DCR water supply protection annexed land values – FY2020* [Data set].

¹¹⁹ *Id.*; Massachusetts Department of Revenue, Division of Local Services. (2020). *State-owned land values – FY2020* [Data set].

¹²⁰ Note: the formula to calculate a community's PILOT reimbursement per \$1,000 of value is as follows: **(FY2020 PILOT Reimbursement/FY2020 SOL or Watershed Land Value) * 1,000**. Further explanation of the formula can be found in Appendix B.

Figure 12—PILOT Reimbursement Comparison Sample—FY2020¹²¹

Municipality	County	FY2020 Watershed and Annexed Land Value	FY2020 SOL Value	FY2020 Watershed PILOT	FY2020 SOL PILOT	FY2020 Watershed PILOT Reimbursement (Per \$1,000)	FY2020 SOL PILOT Reimbursement (Per \$1,000)
Barre	Worcester	\$6,586,200	\$7,197,900	\$186,169	\$68,636	\$28.27	\$9.54
Belchertown	Hampshire	\$14,296,300	\$16,416,600	\$307,699	\$156,541	\$21.52	\$9.54

The towns of Barre and Belchertown had similar land values in both the SOL and the Watershed PILOT program in FY2020. Despite similar values, the towns receive a more generous reimbursement through the Watershed PILOT Program because its rate of reimbursement (over \$20 per \$1,000 of value) is higher than the flat rate set for SOL (\$9.54 per \$1,000 of value). Barre’s SOL is more valuable, but its SOL PILOT reimbursement is much less than what it receives in the watershed program (by \$117,533). The same applies for Belchertown, which receives \$151,158 more in Watershed PILOT reimbursements than SOL reimbursements.

It is worth pointing out that the Watershed PILOT reimbursement rates are slightly different from the commercial tax rates of participating communities because the program contains a “hold harmless” provision that protects reimbursements from decreasing over time. The provision was included in the state laws creating the watershed program, meaning communities have not seen a decline in reimbursements since the program’s inception in 1984.¹²² The SOL PILOT Program does not have this component, although hold-harmless funding was used as a one-time supplement to the program’s appropriation in FY2019. In that fiscal year, the Legislature allocated \$26,770,000 to the program and included an additional \$1,708,131 to prevent any declines in municipalities’ PILOT reimbursements.¹²³ If

¹²¹ A full comparison containing all 29 municipalities in the Watershed PILOT Program can be found in Appendix B. *See also* Massachusetts Department of Revenue, Division of Local Services. (2020). *State-owned land values – FY2020 [Data set]*; Massachusetts Department of Revenue, Division of Local Services. (2020). *DCR water supply protection land values – FY2020 [Data set]*; Massachusetts Department of Revenue, Division of Local Services. (2020). *DCR water supply protection annexed land values – FY2020 [Data set]*.

¹²² Note: An exception is for any land that is removed from the Watershed PILOT Program. Discussions with MWRA and DCR officials indicate that this has rarely happened in recent years. *See* M.G.L. c. 59 § 5G; Meeting with DCR Division of Water Supply Staff Members, 4/30/20. On file with DLM; Meeting with MWRA Staff Members; 8/7/20. On file with DLM.

¹²³ Commonwealth of Massachusetts. (2018). *FY 2019 final budget*. <https://malegislature.gov/Budget/FY2019/FinalBudget>

the hold harmless provision were included in the FY2020 appropriation for the SOL program, we estimate that at least \$971,820 more would be needed to supplement current funding.¹²⁴

4. Not all state agencies' properties are eligible for SOL PILOT reimbursements, limiting payments available for some municipalities.

State law explicitly specifies what agencies are eligible for SOL reimbursements, excluding a number of departments from participating in the program. Staff members from the DOR indicated that program eligibility was based on historical precedent.¹²⁵ State agencies and properties eligible for the program have been mostly unchanged in the law governing SOL since 1974, with the exception of a few amendments and clarifications.¹²⁶

Some of the properties of state agencies that are not included in this list are the following:

- major government properties owned by DCAMM and associated agencies;
- barracks for the Massachusetts State Police;
- National Guard armories under the Commonwealth's Military Division;
- DFS firefighting academies;
- buildings and land for the Massachusetts court system;
- land and property attributed to county sheriffs; and
- other properties from state agencies that were tax-exempt under previous owners.¹²⁷

The SOL statute creates an artificial demarcation among state agencies, so that some land is not included in the program due to the agency in control of the land parcels.¹²⁸ For example, the Camp Curtis Guild and the Camp Edwards Air Force Base are eligible for SOL reimbursements because they qualify as state military campgrounds, but other state military facilities, such as "Readiness Centers" that

¹²⁴ Note: Additional funding based on subtracting municipalities' 2020 SOL PILOT reimbursements from their 2019 reimbursements. At least 75 municipalities would require hold harmless protection under this report.

¹²⁵ Meeting with Department of Revenue Staff Members, 2/27/20. On file with DLM.

¹²⁶ St.1974, c. 492, § 6.

¹²⁷ Commonwealth of Massachusetts, Executive Office of Administration and Finance. (2020, February 14). *Report on the real property owned and leased by the Commonwealth of Massachusetts*. Report prepared by the Division of Capital Asset Management & Maintenance.

¹²⁸ M.G.L. c. 58 § 13.

recruit members for the National Guard, are not eligible. Likewise, correctional facilities belonging to the DOC are eligible for SOL reimbursements. Houses of correction belonging to county sheriffs are not eligible, however, because these facilities and county jails were explicitly excluded in the original iteration of the SOL PILOT Program.¹²⁹

The SOL statute also excludes previously tax-exempt properties from being eligible to receive a PILOT reimbursement. For example, the Wompatuck State Park in Hingham was built on former federal property that once served as a military installation.¹³⁰ Although the land was acquired by the Commonwealth to create the park, the town cannot receive any SOL reimbursements due to the statute's exclusion of land that was previously held by a tax-exempt entity.

5. PILOT reimbursements do not capture additional value that results from significant improvements on land.

The Commonwealth's responsibility to reimburse municipalities for lost tax revenues is limited to land values, which do not capture the value of buildings and other improvements to properties. For example, public colleges and universities, correctional institutions, and former state hospitals are all tax-exempt properties owned by the Commonwealth. While their land values are eligible for PILOT reimbursements, their fixed improvements do not count.¹³¹ Municipalities hosting highly developed state-owned properties thus face a dual burden because the facilities create an increased demand for municipal services.

Including buildings and improvements in SOL valuations could, however, create adverse effects on the SOL program. Reimbursements would be skewed to communities with valuable improvements and would lower payments in communities that have large amounts of protected land that does not allow for improvements. Including improvements to land will also make the SOL program costlier to finance, which exacerbates funding issues that currently exist in the program.

¹²⁹ St. 1910, c. 607.

¹³⁰ Knox, R. (2011, July 17). *Fires down below*. The Boston Globe.

http://archive.boston.com/news/local/articles/2011/07/17/at_wompatuck_park_a_blast_from_the_past/?page=full

¹³¹ M.G.L. c. 58 § 13.

6. Dissatisfaction with the SOL program has led local officials to oppose further acquisitions of land by the state.

Communities across Massachusetts, particularly smaller towns in the western part of the state, have dealt with low SOL reimbursements for years, some of which are related to undervalued land acquisitions.¹³² To some of these towns, SOL represents a large share of their property value and they have raised concerns that the Commonwealth is not adequately compensating them for acquisitions of SOL. A financial administrator for one of these towns stated in correspondence: “Personally, I am not aware of any small towns in Western Massachusetts who would encourage more state acquisitions.”¹³³

One municipality that has expressed opposition to additional state acquisitions in recent years is the Town of Hawley, in which over 40% of the land mass is owned by the state.¹³⁴ In June 2017, the state purchased a plot of 90 acres in the town to add to the Dubuque State Forest.¹³⁵ In 2016, before the sale was finalized, the Hawley Select Board sent a letter to state officials, opposing the purchase by the state of the additional land.¹³⁶ Their concerns focused not just on the drop in revenue from a state land acquisition, but also on the inability of the state to maintain the roads and public infrastructure in the Dubuque State Forest.¹³⁷ The letter points to serious public safety issues caused by the lack of maintenance on forest roads and the closure of roads that has extended over several years.¹³⁸

The purchase was reflected in the SOL program as of FY2020. At the time, the land had an assessed value of \$77,000 and was under private ownership.¹³⁹ The tax payment on the plot of land while in private hands was \$1,248.94, which is based on the town’s single tax rate of \$16.22.¹⁴⁰ Once purchased by the state, the assessed value of the land was changed to reflect the SOL program’s methodology of valuing acquired land, as displayed in Figure 13.

¹³² Schoenberg, S. (2019, May 14). “*There’s not enough of us out here*”: Falling revenue from state-owned land brews tension in rural Massachusetts towns. The Republican. <https://www.masslive.com/news/2019/02/rural-massachusetts-towns-say-government-shirks-payments-for-state-owned-land.html>

¹³³ Email correspondence with Hawley Financial Administrator, 9/22/20. On file with DLM.

¹³⁴ Massachusetts Department of Revenue, Division of Local Services. (2020). *State-owned land values – FY2020* [Data set].

¹³⁵ Email correspondence with Hawley Financial Administrator, 9/22/20. On file with DLM.

¹³⁶ Hawley Select Board. (2016, April 5). *Re: Proposed state purchase of land in Hawley* [letter to the Governor]. On file with DLM; Broncaccio, D. (2016, April 18). *Hawley to state: Stop buying town land*. Greenfield Recorder. <https://www.recorder.com/News/Local/Hawley-to-state-Stop-buying-town-land-1610224>

¹³⁷ *Id.*

¹³⁸ *Id.*

¹³⁹ Email correspondence with Hawley Financial Administrator, 9/22/20. On file with DLM.

¹⁴⁰ Email correspondence with Hawley Financial Administrator, 9/22/20. On file with DLM.

In FY2020, the state valued all land in Hawley in the SOL program at a rate of \$748 per acre and had a reimbursement rate of \$9.54 per \$1,000 of value.¹⁴¹ As a result, the land parcel had a value of \$67,334 in the SOL program and a PILOT of \$642 per year.¹⁴² The tax receipts to the town for this parcel fell by almost half as a result of the state purchase. This is significant because, in FY2020, Hawley’s PILOT reimbursement was \$57,635, which represented 52.8% of its total aid from the state.¹⁴³

Figure 13—Breakdown of Land Acquisitions of Hawley in FY2020: Before and After¹⁴⁴

Town of Hawley		SOL PILOT	
Number of Acres	90	Acquired Acres	90
Assessed Land Value	\$77,000	Acquired Land Value	\$67,334
Town Rate Per Acre	\$855.55	Equalized Valuation Per Acre	\$748.15
Town Single Tax Rate	\$16.22 per \$1,000	Reimbursement Rate	\$9.54 per \$1,000
Tax Payment	\$1,249	PILOT Reimbursement	\$642

The example in Figure 13 illustrates a case where land values in the SOL program fall below those of the assessments done by communities when the land was in private hands. Since the current formula is based on assigning a community’s average value per acre to new acquisitions, there will also be cases where certain SOL parcels may be valued higher than before state acquisition. This is particularly true where the acquired land is primarily “unbuildable” acreage, such as protected salt marshes.¹⁴⁵

¹⁴¹ Massachusetts Department of Revenue, Division of Local Services. (2020). *State-owned land values – FY2020* [Data set].

¹⁴² *Id.*

¹⁴³ Note: Remaining state aid to Hawley includes \$45,954 in Unrestricted General Government Assistance. *See also* Massachusetts Department of Revenue, Division of Local Services. (2020). *Municipal cherry sheet, receipts, & charges* [Data set].

¹⁴⁴ Email correspondence with Hawley Financial Administrator, 9/22/20. On file with DLM.; Massachusetts Department of Revenue, Division of Local Services. (2020). *State-owned land values – FY2020* [Data set].

¹⁴⁵ Email correspondence with staff members from the Department of Revenue, 10/2/2020. On file with DLM.

RECOMMENDATIONS: STATE-OWNED LAND PILOT

1. Strengthen the SOL PILOT program and increase its appropriation.

In order to remedy the municipal revenue inequities attributed to underfunding, the Legislature should increase the appropriation of the SOL PILOT Program to a level of full funding. Because this program does not have a dedicated revenue source (such as a trust fund or state authority like the MWRA), a legislative appropriation is the mechanism to fund the program to a higher level. Moreover, we anticipate that funding would continue to grow over time as SOL values increase. Additional funding will be needed to finance a “hold harmless” provision and address other issues in the SOL program.

Fully fund the SOL PILOT program using the aggregate tax rate method.

In order to reach full funding and resolve the concerning effects of the current formula, the Legislature should determine its appropriation for the SOL PILOT Program by following DOR’s former approach of calculating an aggregate tax rate. This rate is a three-year running average of a ratio representing total property taxes assessed to the total value of property in the state.¹⁴⁶ Since DOR had calculated this estimate until FY2019 and the rate previously existed in SOL PILOT Program statutes, it will be straightforward to implement.¹⁴⁷ Using the aggregate tax rate method would also increase reimbursements for all communities in its first year of implementation. For instance, the FY2020 SOL PILOT reimbursement rate is \$9.54 per \$1,000 of value, whereas the aggregate tax rate for FY2020 would be \$14.51 per \$1,000 of value.¹⁴⁸

$$\text{Recommended SOL Reimbursement} = (\text{Municipality's SOL Value} / 1,000) * \text{Aggregate Tax Rate}$$

Due to the variation in property values and tax levies across communities, using a three-year running average and assigning the same rate to all cities and towns will stabilize reimbursements. For example, the FY2020 aggregate tax rate is based on total values and levies from FY2016, FY2017, and FY2018.¹⁴⁹ Therefore, the aggregate tax rate will cause far less variation in reimbursements than using either

¹⁴⁶ M.G.L. c. 63 § 58

¹⁴⁷ M.G.L. c. 58 § 17, effective to December 31, 2017; M.G.L. c. 63 § 58.

¹⁴⁸ See Appendix B for detailed methodology related to calculating the aggregate tax rate and the FY2020 SOL PILOT reimbursement rate.

¹⁴⁹ See Appendix B for detailed methodology related to calculating the aggregate tax rate.

residential or commercial property tax rates in the formula and will be reflective of changes in tax collection over time. Another benefit of using an aggregate tax rate is that it will help retain needed SOL reimbursements among communities with below-average tax rates.

A potential drawback of using this approach is that the rate may disadvantage municipalities with significantly higher tax rates. SOL reimbursements may not be representative of the revenue communities would otherwise generate if the lands were held privately. Furthermore, funding for the program could decrease if the aggregate tax rate goes down (particularly in non-revalued years), but this can be resolved with a hold harmless provision in the program.

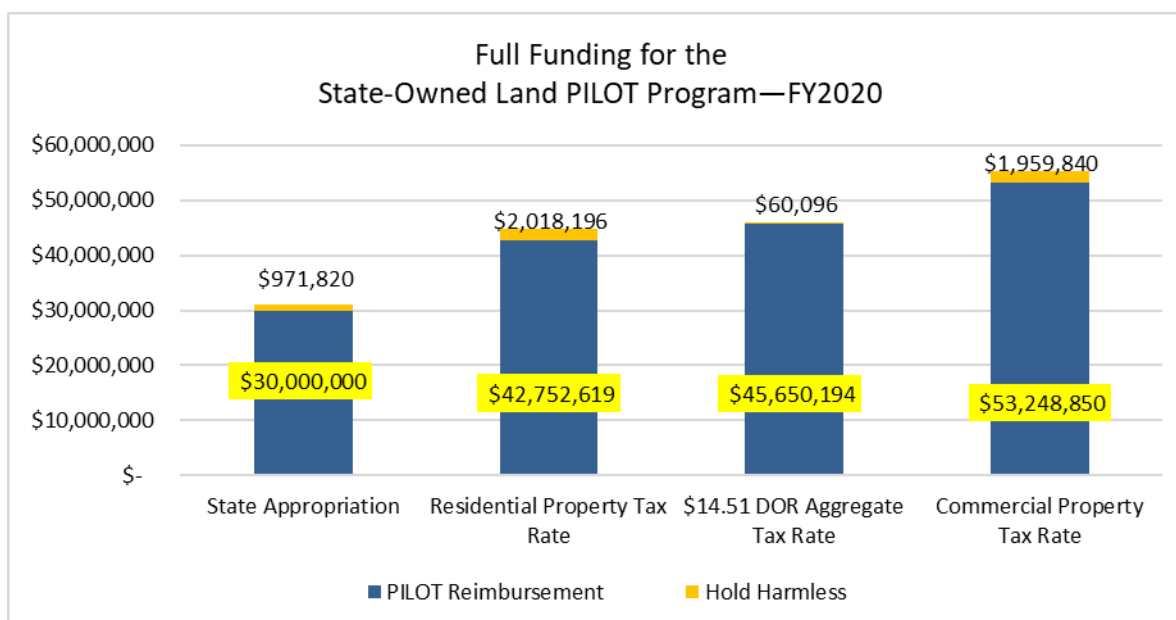
Include a hold harmless provision to protect municipalities with reduced land values and PILOT reimbursements.

When formula changes from the Municipal Modernization Act were introduced to the SOL program in FY2019, legislators employed a one-time hold harmless provision to protect against a drop in PILOT reimbursements.¹⁵⁰ Implementing an ongoing hold harmless provision is important to address declining SOL values as well as below-average growth in values. Protections will be most helpful for communities in central and western Massachusetts that face these issues, as shown in the map highlighting the net changes in PILOT reimbursements in Figure 10.

All three approaches that project full funding for the SOL PILOT program require hold harmless assistance. As seen in Figure 14, calculating reimbursements under the program with an aggregate tax rate will require the lowest investment of this supplemental funding. Moreover, the hold harmless provision will keep reimbursements the same in some communities if SOL values remain level but the aggregate tax rate lowers their reimbursement. Cities and towns should not have lower PILOT reimbursements over time if their land values have increased but not as quickly as other communities. It is important that the implementation of hold harmless protections should not restore payments for communities that lose value as a result of SOL dispositions.

¹⁵⁰ Commonwealth of Massachusetts. (2018). *FY 2019 final budget*.

Figure 14—Hold Harmless Projections and Full Funding Estimates for the SOL PILOT Program¹⁵¹



The Legislature should examine and fix other issues within the SOL PILOT Program.

In addition to fixing how SOL reimbursements are calculated and including a hold harmless provision for reimbursements, the Legislature needs to examine and resolve some of the other issues presented in this report. Although the SOL valuation process was simplified a few years ago, the land characteristics of newly-acquired SOL continue to influence how land is valued through the program.¹⁵² Compared to the current formula, communities will receive higher reimbursements under an aggregate tax rate, but there may be issues of fairness if the ongoing assessment process reduces the value of SOL. The Legislature needs to review SOL assessments to see if there are ways to adjust for the loss of taxable value due to state acquisitions.

The Legislature should also update statutes to include additional state agencies in the SOL program. While there are some properties under state ownership for which it may be costly to allocate reimbursements (such as the land under the State House and the John McCormack building in Boston),

¹⁵¹ Note: Model was constructed using data from DLS and projecting estimates based on various funding approaches. See methodology for further detail. Data from: Department of Revenue, Division of Local Services. (2020). *State-owned land values – FY2020*; Department of Revenue, Division of Local Services. (2020). *DCR Water Supply Protection land values – FY2020*; Department of Revenue, Division of Local Services. (2020). *DCR Water Supply Protection annexed land values – FY2020*; Department of Revenue, Division of Local Services. (2020). *Average single family tax bill*.

¹⁵² Note: See SOL Finding #6.

there are agencies that can easily be included in the list (such as the DFS, courthouses, and county correctional facilities).¹⁵³ Another issue for the Legislature to consider is the state of infrastructure of SOL and the need for maintenance. Communities, such as Hawley, have noted deteriorating condition of roads that cut across SOL and a lack of municipal funds and state assistance to repair them, raising concerns for public safety.¹⁵⁴ The Legislature should set aside some funds in a separate budget to address infrastructure maintenance for SOL.

These issues could be examined in detail and potentially addressed through legislative review. During the 2019–2020 legislative session, Sen. Adam Hinds, Sen. Jo Comerford, Rep. Joseph McKenna, and Rep. Suzannah Whipps, among others, supported legislation and/or budget amendments that would require study of the SOL program.¹⁵⁵

¹⁵³ Note: See SOL Finding #4.

¹⁵⁴ Hawley Select Board. (2016, April 5). *Re: Proposed state purchase of land in Hawley* [letter to the Governor]. On file with DLM.

¹⁵⁵ Mass. Sen. Resolve No. 1861, Mass. Gen. Ct., 191st Sess. (Jan. 18, 2019). <https://malegislature.gov/Bills/191/S1861>; Mass. Sen. Bill No. 3, Mass. Gen. Ct., 191st Sess. (May 23, 2019). <https://malegislature.gov/Bills/191/S3/>; Mass. House. Bill No. 2559, Mass. Gen. Ct., 191st Sess. (Jan. 22, 2019). <https://malegislature.gov/Bills/191/H2559>; Mass. House. Bill No. 5150, Mass. Gen. Ct., 191st Sess. (Nov. 5, 2020). <https://malegislature.gov/Bills/191/H5150/>

FINDINGS: SOLAR FACILITY PILOT

1. The ATB's interpretation of the solar property exemption has created confusion among municipal officials on how to tax solar arrays.

The ATB's decisions, particularly *Forrestall Enterprises, Inc. v. Board of Assessors of the Town of Westborough* in 2014, reversed the way Clause 45 was interpreted for years by municipal officials and the DOR.¹⁵⁶ The ATB's reading of this statutory exemption exposes a loophole that allows commercial solar facilities to avoid paying personal property taxes on their equipment.

Although the ATB decisions apply only to the towns involved in the abatement cases (Westborough, Swansea, Barre, Framingham, and West Bridgewater), the ATB's interpretation of Clause 45 can be binding on all communities if affirmed in an appeal to the Massachusetts Appeals Court.¹⁵⁷ As a result, developers now have leverage in negotiations with municipalities because the ATB has sided with solar developers. If a municipality rejects (or only partially grants) a developer's request for an abatement, the developer can appeal to the ATB, which will most likely issue a decision granting a full abatement of property taxes.

A municipality may challenge the ATB's decision in the Appeals Court, but the financial resources needed by the municipality to prosecute an appeal could exceed the annual tax revenue generated by the facility. For reference, the amount of property tax involved in the three ATB decisions from 2014 to 2017 totaled \$120,698,¹⁵⁸ while legal costs for just one of the decisions exceeded \$100,000 for the developer and \$50,000 for the municipality.¹⁵⁹

¹⁵⁶ *Forrestall Enterprises, Inc. v. Board of Assessors of the Town of Westborough*, No. ATB 2014-1025 (Appellate Tax Bd., Dec. 4, 2014) On file with DLM.

¹⁵⁷ M.G.L. c. 58A, § 7

¹⁵⁸ *Forrestall Enterprises, Inc. v. Board of Assessors of the Town of Westborough*, No. ATB 2014-1025 (Appellate Tax Bd., Dec. 4, 2014) On file with DLM; *KTT, LLC v. Board of Assessors of the Town of Swansea*, No. ATB 2016-426 (Mass. Appellate Tax Bd., Oct. 13, 2016.) On file with DLM; *Quabbin Solar, LLC v. Board of Assessors of the Town of Barre*, No. ATB 2017-480 (Mass. Appellate Tax Bd., Nov. 2, 2017). On file with DLM.

¹⁵⁹ Holtzman, M. (2017, October 12). *16-year PILOT agreement signed for Swansea solar farm*. The Herald News. <https://www.heraldnews.com/news/20171012/16-year-pilot-agreement-signed-for-swanea-solar-farm>

2. Solar facility PILOT agreements do not always reflect the full tax value of solar equipment.

Electric generation facilities that participate in PILOT agreements with municipalities must contribute the “equivalent of the property tax obligation based on full and fair cash valuation.”¹⁶⁰ In order to value solar equipment for the purposes of a PILOT agreement, however, assessors have to make projections of the equipment’s “full cash valuation” for each year of the PILOT agreement, factoring in depreciation. This process is much different from the one traditionally involved in taxing a generation facility, which would use up-to-date information each year.¹⁶¹

As a result of the uncertainty generated by the ATB decisions, communities may discount some of the taxable value of solar equipment to reduce the annual PILOT contribution expected of a solar operator.¹⁶² Moreover, there is at least one current ATB appeal in which a developer is seeking a total exemption from taxes.¹⁶³ Despite these situations, other solar firms and municipalities successfully conclude agreements.¹⁶⁴ Additionally, although the use of a per-megawatt charge in PILOT agreements is quite common, there is significant variation in the charge among communities across the state.¹⁶⁵

3. State laws and guidelines governing the taxation of solar equipment and PILOT agreements with solar facilities are outdated and lack clarity.

Massachusetts law is not adequate to address the taxation of solar facilities in the 21st century. The state law allowing for municipalities and “generation facilities” to negotiate PILOT agreements was enacted in 1997.¹⁶⁶ Legislators likely did not expect at that time that some of the entities using the law today would be solar developers that qualify as “generation facilities.”

Formal guidelines for the valuation and taxation of electric generating facilities were initially released by the DLS in September 1998 and were last updated in August 2017.¹⁶⁷ Prior to the release of the updated

¹⁶⁰ M.G.L. c. 59, § 38H(b).

¹⁶¹ Massachusetts Department of Revenue, Division of Local Services. (1998, September). *Informational guideline release (IGR) No. 98-403 – Valuation and taxation of electric generating property*. On file with DLM; Massachusetts Department of Revenue, Division of Local Services. (2017, August). *Informational guideline release (IGR) No. 17-26 – Valuation and taxation of electric generating facilities*, at 5

¹⁶² Meeting with Concord Town Assessor, 5/5/20. On file with DLM; Meeting with Swansea Principal Assessor, 9/21/20. On file with DLM.

¹⁶³ Meeting with Swansea Principal Assessor, 9/21/20, on file with DLM; email correspondence with Clerk of the Appellate Tax Board, 11/10/20, on file with DLM.

¹⁶⁴ Meeting with Barre Town Administrator, 8/20/20. On file with DLM; Meeting with Barre Administrative Assessor, 8/27/20. On file with DLM.

¹⁶⁵ NY-Sun PV Trainers Network, & Bacher, J. (n.d.) *Planning and zoning for solar* [PowerPoint slides].

<https://www.nysba.org/WorkArea/DownloadAsset.aspx?id=61248>

¹⁶⁶ M.G.L. c. 59, § 38H(b).

¹⁶⁷ Massachusetts Department of Revenue, Division of Local Services. (2017, August). *Informational guideline release (IGR) No. 17-26 – Valuation and taxation of electric generating facilities*.

guidelines, information about these PILOTs was distributed in *City and Town* newsletters by the DLS throughout the 2010s.¹⁶⁸ The guidelines help identify generation facilities and methods to assess property taxes on these properties. The guidelines also include a “checklist” of requirements needed to negotiate a PILOT agreement and outlines the roles municipal officers have in the arrangement.¹⁶⁹ Although the guidelines provide directions for a municipality to value solar facilities and arrange a PILOT contract, they lack clear examples of a standardized agreement or valuation process.

4. PILOT agreements have increased in importance as solar developers seek tax exemptions for their facilities.

Even if solar developers might be exempt from paying taxes on solar installations, they may still be willing to negotiate PILOT agreements with municipalities on the understanding that they have some responsibility to share in the funding of municipal services. The agreements become more significant because they remain a method for municipalities to gain tax revenue that otherwise may be lost. The details of ownership and tax responsibility vary among properties, and some PILOT agreements have therefore focused only on personal property taxes as a result of the ATB decisions.

For the communities involved in the decisions, some of these PILOTs were negotiated as “settlement agreements.” For example, the town involved in the *KTT* (2016) case—Swansea—negotiated a PILOT payment schedule with the solar farm operator at the center of the case.¹⁷⁰

5. The uncertainty of the property tax situation is one of several factors contributing to a slowdown in the development of solar facilities in the Commonwealth.

Cities and towns welcomed the development of solar farms because communities appreciated the benefits of renewable energy and the possibility of additional tax revenues.¹⁷¹ Although Massachusetts has emerged as a leader in the development of solar installations, a variety of factors discussed below, including the uncertain tax status of solar installations, may result in a slower rate of solar development in the future.

¹⁶⁸ Department of Revenue, Division of Local Services, *City & Town* (2012, March); Department of Revenue, Division of Local Services, *City & Town* (2014, August 7); Massachusetts Department of Revenue, Division of Local Services, *City & Town* (2017, June 1). On file with DLM.

¹⁶⁹ Massachusetts Department of Revenue, Division of Local Services. (2017, August). *Informational guideline release (IGR) No. 17-26 – Valuation and taxation of electric generating facilities*, at 4-5.

¹⁷⁰ Holtzman, M. (2017, October 12). *16-year PILOT agreement signed for Swansea solar farm*. The Herald News.

<https://www.heraldnews.com/news/20171012/16-year-pilot-agreement-signed-for-swanea-solar-farm>

¹⁷¹ Meeting with Charlton Town Administrator, 8/24/20. On file with DLM; Meeting with Barre Town Administrator, 8/20/20. On file with DLM.

For example, the town of Granby passed a solar moratorium in May 2019 due to concerns about future tax revenues from solar facilities.¹⁷² Select Board members argued that solar facilities could elect to be tax-exempt under existing loopholes in state law. The moratorium would give residents time to deliberate the issue with officials in public hearings.¹⁷³

In another example, the town of Charlton currently has 25 solar farm projects that are either built or in the application process.¹⁷⁴ In 2018, the town placed a temporary moratorium on solar farm projects, but in 2019 residents voted to change zoning regulations for large solar installations and to cap the number of solar installations at 30.¹⁷⁵ The moratorium and limits on installations were done to address concerns from residents about the growing number of solar installations in the community.¹⁷⁶ Other communities that passed similar solar moratoriums include Athol, Blandford, Haverhill, and Ware.¹⁷⁷

Actions in these municipalities underscore the larger issue of declining overall solar development in the Commonwealth.¹⁷⁸ In 2019, the number of new solar installations was only 50% of what had been installed the previous year, after a period of developers taking advantage of renewable energy incentives in the state.¹⁷⁹ This decline can be attributed, in part, to concerns about land use. Municipal officials have become hesitant about allowing developers to clear agricultural or forest land to provide an energy benefit.¹⁸⁰ Ideally, solar projects would be sited on vacant land (such as landfills and brownfields), but these types of parcels are becoming less available for this purpose.¹⁸¹ Solar farms that are already installed or under development could face other issues, such as an insufficient capacity for interconnectivity to the electric grid and limits on net metering.¹⁸²

¹⁷² Voghel, J. (2019, May 13). *Granby voters approve moratorium on solar farms*. Daily Hampshire Gazette. <https://www.gazettenet.com/GranbyTM-hg050719-25384138>

¹⁷³ *Id.*

¹⁷⁴ Note: as of August 2020. See also LaPlaca, D. (2019, June 13). *Charlton town meeting voters close door to new solar farms*. The Telegram & Gazette. <https://www.telegram.com/news/20190612/charlton-town-meeting-voters-close-door-to-new-solar-farms>; Meeting with Charlton Town Administrator, 8/24/20. On file with DLM.

¹⁷⁵ *Id.*

¹⁷⁶ Meeting with Charlton Town Administrator, 8/24/20. On file with DLM.

¹⁷⁷ *15-month solar moratorium approved by Athol voters, 180-2*. (2019, July 23). Athol Daily News. <https://www.atholdailynews.com/AN-A1-WEDNESDAY-Athol-solar-moratorium-27207421>; Blessing, K. (2019, March 19). *Council rejects solar proposal, enacts moratorium*. The Eagle-Tribune. https://www.eagletribune.com/news/haverhill/council-rejects-solar-proposal-enacts-moratorium/article_ecfd5a91-1f58-5f48-9612-de303210e0b2.html; Porter, A. (2020, February 12). *Solar moratorium giving Blandford time to codify regulations*. The Westfield News. <https://www.thereporter.com/localnews/hilltowns/solar-moratorium-giving-blandford-time-to-codify-r/>; Russell, J. (2019, March 11). *Ware Town Meeting approves 14-month solar farm moratorium*. The Republican. <https://www.masslive.com/news/2019/03/ware-town-meeting-approves-14-month-solar-farm-moratorium.html>

¹⁷⁸ Meeting with Carol Oldham, 6/10/20. On file with DLM.

¹⁷⁹ *Id.*; Morehouse, C. (2020, February 27). *As Massachusetts solar installs plummet, stalled interconnections, land use questions are key hurdles*. Utility Dive. <https://www.utilitydive.com/news/as-massachusetts-solar-installs-plummet-stalled-interconnections-land-use/572925/>

¹⁸⁰ Morehouse, C. (2020, February 27). *As Massachusetts solar installs plummet, stalled interconnections, land use questions are key hurdles*. Utility Dive.

¹⁸¹ *Id.*

¹⁸² *Id.*

RECOMMENDATIONS: SOLAR FACILITY PILOT

1. Clarify the solar property tax exemption through legislative action.

The Legislature should resolve the uncertainty over the taxable status of solar installations. Two proposals introduced during the 2019–2020 legislative session provide comprehensive solutions to this issue and will limit the number of nonresidential solar arrays that are tax-exempt.

The proposal by Sen. Michael Rodrigues (S. 1763) would replace the existing description of solar property exempt from tax with the following language:

*A solar or wind powered system that is capable of producing not more than 125 per cent of the annual electricity needs of the real property upon which it is located; provided, however, that the real property shall include contiguous or non-contiguous real property within the same municipality that is owned or leased by the owner of the real property.*¹⁸³

Sen. Rodrigues’s proposal would allow both commercial and residential solar arrays to seek the exemption. It would limit the exemption, however, to facilities with an energy output not more than “125 per cent of the annual electricity needs of the real property upon which it is located.”¹⁸⁴ The legislation would also codify the decision made by the ATB in the *Forrestall* (2014) case by allowing the exemption to be granted to equipment located on either contiguous or noncontiguous property. For example, this proposal would allow a commercial office building to erect an array on an adjoining lot and not receive a tax bill for the value of the equipment.

The second proposal, introduced by Rep. Jeffrey Roy (H. 2619), would replace the exemption with the following language:

*Any solar or wind powered system that is capable of producing not more than 125 per cent of the annual energy needs of the residential real property upon which it is located.*¹⁸⁵

Rep. Roy’s proposal would allow only residential solar arrays to seek the exemption, but would limit which arrays qualify by their energy output (125% of energy needs or less). Unlike Sen. Rodrigues’s

¹⁸³ Mass. Sen. Bill No. 1763, Mass. Gen. Ct., 191st Sess. (Jan. 18, 2019). <https://malegislature.gov/Bills/191/S1763>; Meeting with Sen. Rodrigues’ staff, 4/27/20. On file with DLM.

¹⁸⁴ *Id.*

¹⁸⁵ Mass. House Bill No. 2619, Mass. Gen. Ct., 191st Sess. (Jan. 15, 2019). <https://malegislature.gov/Bills/191/H2619>; Meeting with Rep. Roy and staff, 5/1/20. On file with DLM.

proposal, it does not specify whether arrays located on noncontiguous property qualify for the exemption.¹⁸⁶

Both proposals would establish which solar arrays and installations are exempt from taxation, resolving the issues that have arisen as a result of the ATB rulings. Although it will be up to the Legislature to determine whether commercial arrays will continue to qualify for the exemption, the two proposals would exclude large-scale solar companies from the exemption and provide the clarity sought by municipal officials, including assessors. Both proposals also keep the length of the exemption at its current level (twenty years).¹⁸⁷

Legislation in this area should also include aspects of existing law such as designation of the officials or bodies who would have authority to approve PILOT agreements for the municipality, inclusion of the value of PILOT payments in the tax rate calculation, and the requirement that PILOTs should represent the equivalent of taxation at full and fair cash value.

Language that mirrors Rep. Roy's proposal is in a large-scale climate action bill that passed the House of Representatives in July 2020.¹⁸⁸ The two branches of the Legislature are currently in a conference committee to review differences between the House and Senate versions of the bill.

2. Clarify the tax status of solar facilities that may not be eligible to participate in PILOTs under existing state law.

Because solar facility PILOTs have gained popularity in recent years, additional state legal requirements will strengthen the usefulness of agreements between municipalities and large-scale solar facilities. If the Legislature clarifies the solar property tax exemption, the exemption should specify what options solar facilities have if they generate more than 125% of annual energy needs. For example, legislative proposals from Sen. Rodrigues and Rep. Roy both include language to allow an installation producing over 125% of the owner's annual electricity needs to negotiate a PILOT agreement.¹⁸⁹

Under existing solar PILOT law, large-scale solar "generation companies" are the only entities eligible to enter a PILOT agreement with a municipality, which is problematic for midsized solar farms that

¹⁸⁶ *Id.*

¹⁸⁷ Mass. Sen. Bill No. 1763, Mass. Gen. Ct., 191st Sess. (Jan. 18, 2019); Mass. House Bill No. 2619, Mass. Gen. Ct., 191st Sess. (Jan. 15, 2019).

¹⁸⁸ Mass. House Amendment H. 4933, Mass. Gen. Ct., 191st Sess. (July 31, 2020). <https://malegislature.gov/Bills/191/H4933>

¹⁸⁹ Mass. Sen. Bill No. 1763, Mass. Gen. Ct., 191st Sess. (Jan. 18, 2019); Mass. House Bill No. 2619, Mass. Gen. Ct., 191st Sess. (Jan. 15, 2019).

generate an abundance of energy but do not fit the definition of a generation company.¹⁹⁰ The proposals by Sen. Rodrigues and Rep. Roy would allow commercial projects that do not fit this definition to use a PILOT agreement if they do not qualify for a tax exemption.¹⁹¹ This extension would allow municipalities to negotiate agreements with more solar projects, giving them greater control over tax revenues.

3. Establish additional guidelines to assist municipalities in creating and negotiating solar PILOT agreements.

Given the complexity of PILOT agreements and the lack of a standardized formula across municipalities to calculate the value of equipment based on energy output, it will be beneficial for municipalities to have access to guidelines to establish agreements. Sen. Rodrigues's proposal includes language that would require DOR and the Department of Energy Resources (DOER) to develop guidelines.¹⁹²

In Sen. Rodrigues's proposal, the guidelines could include the following:

- standardized formulas to calculate property taxes;
- appropriate terms and payment schedules as recommended by state and regional stakeholders; and
- guidelines for a standardized PILOT agreement.¹⁹³

Guidelines that would standardize how solar equipment is valued and taxed for PILOT agreements are consistent with suggestions from solar industry advocates, who believe such guidelines will help both developers and municipalities.¹⁹⁴ The guidelines could also suggest ways to address nonpayment of the PILOT by the solar developer, which would strengthen the hand of communities. DLS already has the legal authority to set guidelines for local tax purposes. Recognizing that, we encourage the use of such guidelines to standardize these agreements and calculations across communities in order to protect all stakeholders in the process. PILOT guidance that exist in states such as New York may serve as an example for Massachusetts officials to follow as they update guidelines.¹⁹⁵

¹⁹⁰ M.G.L. c. 59, § 38H(b); M.G.L. c.164, § 1.

¹⁹¹ Mass. Sen. Bill No. 1763, Mass. Gen. Ct., 191st Sess. (Jan. 18, 2019); Mass. House Bill No. 2619, Mass. Gen. Ct., 191st Sess. (Jan. 15, 2019).

¹⁹² Mass. Sen. Bill No. 1763, Mass. Gen. Ct., 191st Sess. (Jan. 18, 2019).

¹⁹³ *Id.*

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Local Financial Impact Review: The Impact of the State-Owned Land PILOT and Solar Taxation Policies on Municipalities

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APPENDIX A—CONTRIBUTORS

We want to offer our sincere appreciation to the following organizations and individuals who provided information, sat for interviews, and generally shared their views on the challenges and opportunities for statutory PILOT programs in Massachusetts. These stakeholders, along with their staff members and subject matter experts, provided significant context and data that we used in this report, though the findings and recommendations contained herein solely reflect the opinion and are the work of the Office of the State Auditor.

- Adam Hinds, Massachusetts State Senator
- Jo Comerford, Massachusetts State Senator
- Michael Rodrigues, Massachusetts State Senator
- Paul Mark, Massachusetts State Representative
- Maria Robinson, Massachusetts State Representative
- Jeffrey Roy, Massachusetts State Representative
- Daniel Bosley, Former Massachusetts State Representative
- Sean Cronin, Senior Deputy Commissioner of Local Services of the Massachusetts Department of Revenue, Division of Local Services
- Joanne Graziano, Chief of the Massachusetts Department of Revenue, Bureau of Local Assessment
- Daniel Bertrand, Director of Administration of the Massachusetts Department of Revenue, Division of Local Services
- Lisa Krzywicki, Deputy Bureau Chief of the Massachusetts Department of Revenue, Division of Local Services
- Joel Zimmerman, Regional Planner of the Massachusetts Department of Conservation and Recreation, Division of Water Protection
- Frank Hartig, Assistant General Counsel of the Massachusetts Department of Conservation and Recreation, Division of Water Protection
- Sean Navin, Director of Intergovernmental Affairs of the Massachusetts Water Resources Authority

- Stephen Estes-Smargiassi, Director of Policy and Planning of the Massachusetts Water Resources Authority
- Michael Cole, Budget Director of the Massachusetts Water Resources Authority
- John Gregoire, Manager of Reservoir Operations of the Massachusetts Water Resources Authority
- William Doherty, Clerk of the Massachusetts Appellate Tax Board
- Linda Dunlavy, Executive Director of the Franklin Regional Council of Governments
- Bob Dean, Regional Services Director of the Franklin Regional Council of Governments
- Carol Oldham, Executive Director of the Massachusetts Climate Action Network
- Lane Partridge, Assessor of the Town of Concord
- Jessica Sizer, Town Administrator of the Town of Barre
- Eileen White, Administrative Assessor of the Town of Barre
- Andrew Golas, Town Administrator of the Town of Charlton
- Thomas Welch, Principal Assessor of the Town of Swansea
- Virginia Welch, Financial Administrator of the Town of Hawley
- John Robertson, Legislative Director of the Massachusetts Municipal Association
- Charles Stefanini, Legislative Agent of the Massachusetts Association of Assessing Officers
- David Gahl, Northeast Senior Director of State Affairs of the Solar Energy Industry Association

APPENDIX B—METHODOLOGY

The information and analysis contained in the report come from a variety of sources. Among the most important were the following:

- meetings with stakeholders;
- data from a variety of state sources;
- statutory language, official regulations, and legal decisions;
- published policy reports from the Office of the State Auditor and other stakeholders;
- newspaper articles from recent years; and
- current legislative proposals.

Meetings with Stakeholders. To further inform our research, DLM talked to various stakeholders such as the following:

- leadership and staff at the Department of Revenue;
- leadership and staff at the Department of Conservation and Recreation’s Division of Water Supply;
- leadership and staff at the Massachusetts Water Resources Authority;
- executive leadership, assessors, and financial staff from the municipalities of Barre, Charlton, Concord, Hawley, Swansea, and Westborough;
- advocates for municipal finance in the Commonwealth, including nonprofit organizations;
- advocates for the expansion of solar power in the Commonwealth, including nonprofit organizations and industry representatives; and
- members of the Legislature.

Data. DLM used various methods to estimate the financial impact of SOL reimbursements to municipalities. We retrieved the following data from the Department of Revenue (DOR) Division of Local Services (DLS):

- historical appropriations, estimated full reimbursements, and three-year aggregate statewide tax rates for the SOL PILOT Program between FY1996 and FY2020;
- detailed information on SOL holdings in municipalities as of FY2017;
- historical SOL PILOT reimbursements, by municipality, between FY2010 and FY2020;

- detailed SOL data, by municipality, for FY2019 and FY2020, which include SOL values, total acreage, acquired and disposed land acreage, equalized value adjustment ratios, and shares of total land value;
- historical Watershed PILOT reimbursements, by municipality, between FY2015 and FY2020;
- detailed watershed land data, by municipality, for FY2019 and FY2020, which include SOL values, total acreage, acquired and disposed land acreage, equalized value adjustment ratios, and shares of total land value;
- cherry sheet data, by municipality, for FY2020;
- residential and commercial tax rates, by municipality, for FY2020; and
- levy and property value data, by municipality, for FY2016, FY2017, and FY2018.

Other SOL resources we used included the following:

- original statutory language on SOL and Watershed PILOT programs and subsequent amendments;
- statutory language and regulations on land acquisitions and dispositions;
- information on Watershed PILOTs released by DCR and the MWRA;
- a list of all state-owned properties in the Commonwealth, as presented by the Division of Capital Asset Management and Maintenance;
- reports published by DLM on SOL from 1994 and 2001;
- a 2017 report on SOL, released by Rural Commonwealth;
- the 2019 Rural Policy Plan released by the Massachusetts Rural Policy Advisory Commission;
- news articles on issues regarding SOL; and
- legislative proposals from the 2019–20 session.

To identify more information about solar facility PILOTs, DLM retrieved the following:

- original statutory language and regulations on solar facility PILOTs, tax exemptions on solar facilities, and net metering;
- Informational Guideline Releases and *City and Town* newsletters from the Department of Revenue;
- solar facility PILOT agreements between developers and municipalities in Massachusetts, as provided by municipal officials and the Solar Energy Industries Association;

- ATB decisions on solar installations between 2014 and 2020;
- news articles about negotiated PILOT agreements, taxation concerns of solar facilities, and solar moratoriums;
- articles from industry sources about state programs and incentives for solar facilities in Massachusetts;
- testimony from various advocacy groups about proposals from previous legislative sessions to clarify the solar property tax exemption; and
- legislative proposals from the 2019–20 legislative session.

Estimated Full Reimbursements for SOL (Figure 9; pp. 27-28). Between FY1996 and FY2019, the Department of Revenue estimated full reimbursements for the SOL PILOT Program by using a three-year aggregate tax rate. DOR calculated the three-year state average tax rate by dividing the total tax levy of all properties in the Commonwealth (residential, commercial, industrial, open space) by their total value, regardless of whether the municipality had SOL. Because DOR did not calculate a full reimbursement for FY2020, DLM retrieved total values and tax levies for FY2016, FY2017, and FY2018 to calculate the three-year aggregate tax rate, as outlined in the formula below:

$$(\text{Total Statewide Tax Levy} / \text{Total Statewide Assessed Value}) * 1,000$$

After calculating the aggregate tax rate, DLM used the rate to determine what the full reimbursement would be for FY2020 with the following formula:

$$(\text{Municipality's SOL Value} / 1,000) * \text{Aggregate Tax Rate}$$

DLM also used the funding formula for the Watershed PILOT Program to calculate how much funding the SOL PILOT appropriation needed to provide a full reimbursement to municipalities. DLM retrieved FY2020 commercial tax rates to calculate the total reimbursement for each municipality with the following formula:

$$(\text{Municipality's SOL Value} / 1,000) * \text{Municipality's Commercial Tax Rate}$$

There is existing literature that advocated for the use of residential tax rates to calculate reimbursements for the SOL PILOT Program. Therefore, DLM also used FY2020 residential tax rates to calculate potential full reimbursements with the following formula:

$$(\text{Municipality's SOL Value} / 1,000) * \text{Municipality's Residential Tax Rate}$$

For these three approaches, DLM calculated shortfalls by subtracting full reimbursements from the existing FY2020 appropriation for the SOL Program. DLM determined shares of full funding by dividing the legislative appropriation by the full reimbursement calculation.

Estimated Hold Harmless Funding for SOL (Figure 14, pp. 34, 38-39). DLM estimated how much it would cost the Legislature to use a hold harmless provision for existing SOL values and legislative appropriation for FY2020. DLM retrieved PILOT reimbursement data from FY2019 and FY2020 and calculated the difference in reimbursements. DLM then calculated total hold harmless funding by adding the differences in communities that had drops in funding, which totaled \$973,253. This total was adjusted to \$971,820 to account for a municipality (Chelmsford) that disposed of land in FY2020.

DLM also calculated estimated hold harmless funding in FY2020 if the SOL formula used other approaches to calculate payments to municipalities (see “Estimated Full Reimbursements for SOL”). DLM calculated differences between actual FY2019 SOL PILOT reimbursements and projected FY2020 reimbursements and then added differences in communities that had drops in funding. In order to cover drops in reimbursements in FY2020, an aggregate tax rate in the SOL formula would need \$60,096, a residential tax rate would need \$2,018,096, and a commercial tax rate would need \$1,959,840.

Estimated Total SOL Value in Massachusetts (Figure 1, pp. 12–13). DLM retrieved total statewide SOL values for FY2019 and FY2020 from the DLS Municipal Databank. Because statewide SOL values before FY2019 were not available online, DLM calculated values for each fiscal year by using the following formula:

$$(\text{Full Reimbursement} / \text{Aggregate Tax Rate}) * 1,000$$

For example, we calculated the estimated statewide SOL value for FY2018 using this formula:

$$\text{FY2018 Statewide SOL Value: } (\$40,799,438 / \$14.98) * 1,000 = \$2,723,593,992$$

Percentage of SOL to Total Property Value (Figure 2; pp. 13–14). DLM calculated how much SOL value in municipalities was represented in their communities’ total property value. DLM divided SOL value by total property value to determine percentages for each municipality.

Net Change in SOL PILOT Reimbursements (Figures 10 and 11; pp. 29–31). DLM determined net changes in reimbursements from the SOL PILOT Program by calculating the difference in reimbursements by municipality between FY2015 and FY2020 and dividing the difference by a

municipality's FY2015 reimbursement. DLM constructed a map on Tableau to reflect these changes. East Bridgewater, which had a significantly high reimbursement during this period, was determined to be an outlier and therefore not included in the map. A similar approach was used to calculate net changes for municipalities between FY2019 and FY2020.

Calculating Land Acquisition Impacts to SOL PILOT (Figure 5; pp. 17–18). DLM made independent calculations for scenarios involving increasing and decreasing SOL values in a municipality, particularly the town of Bridgewater. In order to calculate the effects of a SOL value increase or decrease of \$2 million, we performed the following calculations:

- adding \$2 million to (or subtracting \$2 million from) Bridgewater's SOL and the statewide SOL value;
- calculating shares of the PILOT appropriation for all municipalities by dividing municipal SOL values by the newly calculated statewide SOL value;
- multiplying the updated shares by the PILOT FY2020 appropriation to determine updated PILOT reimbursements; and
- calculating differences in funding by subtracting the updated PILOT reimbursement from the original PILOT reimbursement.

Reimbursement Rates for SOL and Watershed Programs (Figure 12; p. 32). In order to compare rates of reimbursement between municipalities that participate in the SOL and Watershed PILOT programs in Figure 12, DLM used the following formula to calculate rates:

$$(\text{PILOT Reimbursement} / \text{SOL or Watershed Value}) * 1,000$$

The structure of the SOL program allows all municipalities to have the same reimbursement rate (\$9.54 per \$1,000). The Watershed PILOT's program structure, which uses commercial tax rates to determine reimbursements and holds municipalities harmless for funding, results in varied reimbursement rates across communities. The SOL reimbursement rate is also used in Figure 13 to determine Hawley's PILOT reimbursement for newly acquired land.

A complete version of Figure 12 can be viewed below:

Figure 12 - PILOT Reimbursement Comparison (FY2020) – Watershed Communities¹⁹⁶

(* = communities with annexed land)

Municipality	County	FY2020 Watershed and Annexed Land Value	FY2020 SOL Value	FY2020 Watershed PILOT	FY2020 SOL PILOT	FY2020 Watershed PILOT Reimburse- ment (Per \$1,000)	FY2020 SOL PILOT Reimburse- ment (Per \$1,000)
Barre	Worcester	\$6,586,200	\$7,197,900	\$186,169	\$68,636	\$28.27	\$9.54
Belchertown*	Hampshire	\$14,296,300	\$16,416,600	\$307,699	\$156,541	\$21.52	\$9.54
Berlin	Worcester	\$2,034,200	\$0	\$56,632	\$0	\$27.84	\$0
Boylston	Worcester	\$32,468,400	\$0	\$595,939	\$0	\$18.35	\$0
Clinton	Worcester	\$6,598,800	\$253,600	\$205,949	\$2,418	\$31.21	\$9.54
Framingham	Middlesex	\$11,284,300	\$48,777,600	\$261,931	\$465,122	\$23.21	\$9.54
Hardwick*	Worcester	\$7,701,200	\$6,134,100	\$123,385	\$58,492	\$16.02	\$9.54
Holden	Worcester	\$36,147,200	\$10,760,300	\$919,616	\$102,605	\$25.44	\$9.54
Hubbardston	Worcester	\$24,037,200	\$7,057,300	\$356,231	\$67,295	\$14.82	\$9.54
Leominster	Worcester	\$179,000	\$14,787,100	\$8,688	\$141,003	\$48.54	\$9.54
Ludlow	Hampden	\$228,100	\$3,528,300	\$10,524	\$33,644	\$46.14	\$9.54
Marlborough	Middlesex	\$2,179,000	\$7,882,400	\$112,802	\$75,163	\$51.77	\$9.54
New Salem*	Franklin	\$24,098,300	\$1,150,900	\$722,075	\$10,974	\$29.96	\$9.54
Northborough	Worcester	\$5,410,700	\$14,345,600	\$103,467	\$136,793	\$19.12	\$9.54
Oakham	Worcester	\$9,781,900	\$9,165,300	\$147,068	\$87,396	\$15.03	\$9.54
Orange	Franklin	\$520,400	\$6,635,100	\$10,796	\$63,269	\$20.75	\$9.54
Pelham*	Hampshire	\$12,560,300	\$4,079,300	\$376,183	\$38,898	\$29.95	\$9.54
Petersham*	Worcester	\$16,017,000	\$6,408,300	\$500,027	\$61,107	\$31.22	\$9.54
Phillipston	Worcester	\$146,100	\$4,349,700	\$11,913	\$41,477	\$81.54	\$9.54
Princeton	Worcester	\$16,990,900	\$20,303,800	\$269,306	\$193,608	\$15.85	\$9.54
Rutland	Worcester	\$23,314,000	\$6,080,200	\$525,860	\$57,978	\$22.56	\$9.54
Shutesbury	Franklin	\$7,185,600	\$1,990,600	\$299,392	\$18,981	\$41.67	\$9.54
Southborough	Worcester	\$18,108,700	\$379,700	\$301,691	\$3,621	\$16.66	\$9.54

¹⁹⁶ Massachusetts Department of Revenue, Division of Local Services. (2020). *State-owned land values – FY2020* [Data set]; Massachusetts Department of Revenue, Division of Local Services. (2020). *DCR water supply protection land values – FY2020* [Data set]; Massachusetts Department of Revenue, Division of Local Services. (2020). *DCR water supply protection annexed land values – FY2020* [Data set].

Local Financial Impact Review: The Impact of the State-Owned Land PILOT and Solar Taxation Policies on Municipalities

Appendix B

Sterling	Worcester	\$48,193,300	\$2,535,600	\$810,129	\$24,178	\$16.81	\$9.54
Templeton	Worcester	\$55,200	\$8,479,500	\$1,082	\$80,857	\$19.60	\$9.54
Ware*	Hampshire	\$11,822,000	\$2,039,400	\$360,842	\$19,447	\$30.52	\$9.54
Wendell	Franklin	\$1,332,800	\$11,480,000	\$31,801	\$109,468	\$23.86	\$9.54
West Boylston	Worcester	\$22,416,500	\$0	\$683,582	\$0	\$30.49	\$0
Westborough	Worcester	\$2,997,200	\$11,614,900	\$54,909	\$110,755	\$18.32	\$9.54

APPENDIX C—SOLAR PILOT ATB CASES

1. Forrestall Enterprises, Inc. v. Board of Assessors of the Town of Westborough (2014)

In 2014, a corporation installed a small solar facility on property it owned in order to supply energy through a net metering agreement to other nonadjacent properties belonging to the owner of the corporation.¹⁹⁷ The Town of Westborough assessed personal property taxes on the solar equipment for 2012 and 2013, and the corporation sought an abatement. The town’s assessors argued, in reliance upon an interpretation by the DOR, that the solar exemption was applicable only to facilities supplying energy to contiguous properties.¹⁹⁸ The ATB, however, rejected the town’s argument and held that, if the owners of the solar facility were providing electricity to other noncontiguous taxable properties they owned, they were entitled to the exemption.¹⁹⁹ The decision shows the DOR’s limited role in local property taxation, because the department only provides oversight to local assessors and its guidance is not binding.²⁰⁰

2. KTT, LLC v. Town of Swansea Board of Assessors (2016)

In 2016, a solar farm operator in Swansea filed a tax abatement appeal against the Town of Swansea’s Board of Assessors, which had imposed personal property taxes on the solar farm.²⁰¹ The solar operator argued that its property was exempt from taxes, although the solar equipment was used in a net metering agreement to generate power for private bank branches not located on the same property.²⁰² The ATB held again that a solar installation is tax-exempt under the solar exemption clause when the installation is “utilized to supply the energy needs of a property that is subject to Massachusetts property tax.”²⁰³ In this decision, the ATB extended the tax exemption for solar facilities to installations that supply energy to other entities not under the same ownership. This interpretation also allows a third-party net-metered solar project that allocates net metering credits to a different entity to take advantage of the solar property tax exemption.

¹⁹⁷ *Forrestall Enterprises, Inc. v. Board of Assessors of the Town of Westborough*, No. ATB 2014-1025 (Appellate Tax Bd., Dec. 4, 2014) (on file with DLM).

¹⁹⁸ Massachusetts Department of Revenue, Division of Local Services, *City & Town* (2012, March), at 1-2.

¹⁹⁹ *Forrestall Enterprises*, slip op at 9.

²⁰⁰ Rodina, I. & Goho, S.A. (2013, July). *The solar property tax exemption in Massachusetts: Interpretation of existing law & recommendations for amendments*, at 9. <https://clinics.law.harvard.edu/environment/files/2019/09/solar-property-tax-exemption-massachusetts-recommendations-amendments.pdf>

²⁰¹ *KTT, LLC v. Board of Assessors of the Town of Swansea*, No. ATB 2016-426 (Mass. Appellate Tax Bd., Oct. 13, 2016 (on file with DLM)

²⁰² *KTT, LLC*, slip op. at 3-4.

²⁰³ M.G.L. c. 59 § 5, cl. 45; *KTT, LLC*, slip op. at 6.

3. Quabbin Solar, LLC v. Board of Assessors of the Town of Barre (2017)

In 2017, the ATB made a similar decision in a dispute between the Town of Barre’s Board of Assessors and three solar companies owned and managed by the same individual.²⁰⁴ In this case, the solar companies were selling their net metering credits to a third party (Honey Farms, Inc.) that ran its operations mostly on leased commercial properties.²⁰⁵ Upon tax abatement appeals by the solar companies, the ATB decided that the solar companies qualified for the exemption, reasoning that the language of the clause is not ambiguous and the exemption is allowable for residential, industrial, and commercial properties as long as they are taxable.²⁰⁶

4. PelleVerde Capital, LLC v. Board of Assessors of the Town of West Bridgewater (2020) and United Salvage Corp. of America v. Board of Assessors of the City of Framingham (2020)

In these two decisions from 2020, the ATB determined, as would naturally follow from its reasoning in the earlier cases, that solar facilities that supply electricity to *nontaxable* properties (here, municipal buildings) are taxable.²⁰⁷

²⁰⁴ *Quabbin Solar, LLC v. Board of Assessors of the Town of Barre*, No. ATB 2017-480 (Mass. Appellate Tax Bd., Nov. 2, 2017) (on file with DLM).

²⁰⁵ *Quabbin Solar*, slip op. at 4-5.

²⁰⁶ *Id.*

²⁰⁷ *PelleVerde Capital, LLC v. Board of Assessors of the Town of West Bridgewater* (Mass. Appellate Tax Bd., May 29, 2020) (on file with DLM); *United Salvage Corp. of America v. Board of Assessors of the City of Framingham* (Mass. Appellate Tax Bd., May 29, 2020) (on file with DLM).