



# Massachusetts Energy and Environment Report Card

## YEAR THREE



THIS REPORT WAS PREPARED BY THE FOLLOWING ORGANIZATIONS:



**Charles River Watershed Association**, a research and advocacy non-profit, uses science, advocacy, and the law to restore, protect, and enhance the Charles River, its watershed, and public access. It promotes sustainable water resource management policies and practices with a focus on water quality, streamflow and habitat, green infrastructure, water conservation, and climate change resiliency.



**Clean Water Action** works to protect our environment, health, economic well-being and community quality of life. Our goals include clean, safe and affordable water; prevention of health threatening pollution; creation of environmentally safe jobs and businesses; and empowerment of people to make democracy work.



**Conservation Law Foundation** forges lasting solutions to environmental challenges for the people of New England. CLF takes on powerful opponents who would pollute our air and water and squander our resources. Our deep local knowledge, legal acumen, and policy expertise make CLF a prime mover in building our clean energy future, countering climate change, and safeguarding our communities.



**Environmental League of Massachusetts** is committed to combating climate change and protecting our land, water, and public health. By creating diverse alliances and building the power of the environmental community, we use our collective influence to ensure Massachusetts is a leader in environmental and economic sustainability.



**Environment Massachusetts** is a statewide, citizen-funded environmental advocacy organization. Our staff and members work to protect Massachusetts' air, water and open spaces through grassroots organizing, coalition-building, public education, and direct advocacy.



**Massachusetts Rivers Alliance's** mission is to protect and restore the Commonwealth's rivers and streams. The organization works to strengthen statewide river policies in four areas: water quality, stream flow, wildlife habitat, and investment in green infrastructure. We also strengthen, connect, and unify our 60+ member organizations in support of shared river protection goals.



**Massachusetts Sierra Club's** mission is to inspire and empower humanity to explore, enjoy, and protect the wild places of the Earth. We aim to help accelerate the transition to 100 percent carbon-free electricity by 2030, to replace carbon-based fuels in other sectors by 2040, to protect the natural environment of Massachusetts, to represent member concerns effectively at state and local levels, and to promote diversity, equity, and inclusiveness.

*For more information, please contact Nancy Goodman,  
Vice President for Policy at the Environmental League of Massachusetts  
at [ngoodman@environmentalleague.org](mailto:ngoodman@environmentalleague.org) or 617-742-2553.*

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## Overview

**T**his Report Card is designed to evaluate the Baker administration's environmental and energy commitments and accomplishments. We prepare it annually in an effort to hold the administration accountable for protecting the Commonwealth's environment, natural resources, and public health and safety.

Citizens of the Commonwealth know Massachusetts is a special place to live, work and do business. We value our coastlines, forests, rivers, wildlife, parks, and natural places and expect clean air and water. Many of us have chosen to live here or stay here because of these special qualities.

However, in 2018, we are, quite simply, worried about how well the places we love are being protected. We are concerned about the quality of our air, water and lands. With retreat in Washington on many critical energy and environmental issues, we look to the Baker administration to take a forceful stand on environmental issues, to protect

our public health, to establish strong state policies and to provide sufficient resources to advance them.

**In this last year of the Governor's first term, we remain disappointed that the Commonwealth is lagging in many areas where we should be leading. While there is movement and even leadership in some areas, particularly around climate change and resiliency, much of the environmental agenda and EEA responsibilities are not getting the attention they deserve.** From reducing waste to protecting communities of color and the poor from environmental burdens, to sustainably managing our water resources, to maintaining our parks, to protecting the public from toxic substances, to serving as effective public trustees of our waterfronts, our leaders are falling short. We understand that each administration must choose its priorities and not every environmental issue can be at the top of the list. However, after three years in office, there are many issue areas where little to no progress has been made. Much of this lack of progress is due to a lack of funding and staffing at the

environmental agencies. Agency staff are stretched extremely thin and only have time to be reactive rather than proactive in addressing the many issues before them.

We see no sense of urgency about the environmental challenges—and opportunities—before us. Overly cautious, incremental approaches that will take years to implement will not get the job done. More ambitious leadership is required.

## OVERALL GRADE



**While we note some new initiatives and improvements, lack of leadership and action on other impor-**

**tant fronts means, for the third year in a row, the state gets a C on environmental issues.**

The administration has made a number of good policy decisions but also some questionable ones. In almost every decision having to do with the electricity market or utility regulation, it appears that the utilities have had an overly significant influence on the decision. Accommodating the utilities has left both consumers and the environment less protected.

The Governor should lead by saying to these important actors: how can the state help you to shape your business so that we can meet our mandates to significantly reduce greenhouse gas emissions? In fact, he needs to make it clear that the Commonwealth will be phasing out fossil fuels by 2050 and that we are in a transition to get there in an organized and economically sound way.

And, the Governor cannot continue to insist that he is committed to the environment when the agencies in charge of environmental issues don't have sufficient staff to meet the state's basic needs, much less to adopt new policies and programs.

If state spending has outstripped available revenue, then the Governor has an obligation to find the funds or begin the public dialogue about the best ways to raise those funds.

## Key Developments Since Last Year

A number of recent developments stand out. The administration introduced a \$1.4 billion environmental bond bill that devotes \$300 million “for critical infrastructure and the prevention, adaptation and mitigation of climate change.”

Some strong climate adaptation and resiliency work has been accomplished this year, but with many sectors of emissions not yet being addressed, it seems like the urgency of coastal emergencies is overshadowing emission reductions that could model a path forward nationally. We need to do both.

Another positive development was the Governor's introduction of legislation that would establish Massachusetts as the national leader in energy efficiency information for home buyers by creating a standard “MPG-like” label that provides information about the relative energy efficiency of a home, similar to the “miles per gallon” label on vehicles. The legislation would require home sellers to have an energy audit and disclose an energy performance score, at no cost to the seller, as part of the home sale transaction. We think this is a very good step that would educate consumers and result in more homeowners taking advantage of energy efficiency measures, and we appreciate the Administration taking on this issue.

By contrast, in the Eversource electricity rate decision, the Department of Public Utilities sided with the utility against consumers and the environment on several major issues. This includes automatic annual rate hikes with little accountability or expectation of substantial benefits for the Commonwealth, and a damaging national precedent of complex and punitive demand charges for new residential solar customers. These two decisions should be reversed legislatively before they take effect at the beginning of 2019.





The decision about the Wheelabrator Ash Landfill in Saugus (see page 40) is symbolic of how we are failing. The decision to extend the permit for a facility that threatens public health in the surrounding working class communities, sits in an Area of Critical Environmental Concern, is subject to impacts from coastal flooding and storms, and is the repository of incinerator ash from burning solid waste, touches on so many issues that the state is not addressing well. By the third year of the Governor's term, we expect more.

Finally, we must note that we are now approximately a year away from the closure of another aging facility that threatens public health and safety, the Pilgrim Nuclear Power Station in Plymouth. Initially going on line in 1972, the reactor is assessed by the Nuclear Regulatory Commission as the least safe in the United States. The plant's planned shutdown in 2019, removal of the spent fuel from the degrading waste pool, and safe decommissioning should be a major focus of the governor as closure looms but there has been insufficient attention paid thus far.

A sampling of critical issues to address for a safe decommissioning process includes ensuring that: Pilgrim's owner pays in full for decommissioning rather than allowing taxpayer subsidies; decommissioning quickly follows closure and is

not deferred for decades; the site is returned to "greenfield" for unrestricted use and radioactivity is cleaned up to high standards; high level nuclear waste is removed from the spent fuel pool to hardened on-site storage in robust dry casks; the recommendations of the Nuclear Decommissions Citizens Advisory Panel are supported. The Commonwealth also needs to prepare a smart transition plan to address host community needs, any remaining worker transition needs, and power replacement with clean zero carbon energy sources. While this is not exclusively an EEA issue, given the potential health threat from the hazardous radioactive materials involved, the Governor should be prioritizing this issue as a top public safety initiative.

At the highest level, this assessment points to the fact that the agencies need to be staffed, funded and inspired in a much more powerful way moving forward. Many of the specific results described here are the fall-out of a lack of vision, leadership, and adequate funding.

As the chart on page 5 indicates, the highest grades were for two issues we added to the report card this year. EEA received an A for its work on culvert and dam removal and replacement led largely by the Division of Ecological Restoration (DER). With a budget well under \$1 million, DER does more with modest funding than almost any other program. The Administration also received an A- for its focus on climate adaptation as reflected in new funding and program emphasis. And high marks were awarded for another relatively new program that addresses food waste from large institutions.

Poor grades include an F for MassDEP's recent decision to allow the Wheelabrator Ash Landfill in Saugus to continue operating and expand despite the many public health and environmental justice concerns that were raised. And a failing grade was given for another attempt by the Administration to transfer water pollution control permitting from EPA to MassDEP without providing a secure and sustainable funding mechanism or clearly articulating the environmental benefits of taking on the program.

There were a significant number of D grades—most often this indicated a lack of progress on issues including the environmental budget, environmental justice, preservation of public trust rights in tidelands, reducing toxic chemical use, and managing solid waste.

An improved grade was given on transportation where we saw the Administration begin the discussion we need to have on addressing GHG emissions from that sector. Another improvement

was on drought preparedness and management with EEA responding to the very serious 2016 drought by convening an interagency group to update the state's Drought Management Plan.

Our environmental agencies are responsible for implementing a wide array of programs and policies. We do not review them all. This report card reflects what the contributing organizations consider to be priority issues and highlights many of the most important environmental challenges before us.

## Grade Comparisons

	2016	2017	2018
<b>Overall</b>	<b>C</b>	<b>C</b>	<b>C</b>
<b>Environmental Budget</b>	C	C	D
<b>Energy and Climate Change</b>			
• Energy Efficiency	B	B+	B
• Renewable Energy	C+	C+	C+
• Reducing Global Warming Pollution	*	B–	B+
• Gas Pipelines	D	D	D
• Modernizing The Grid	*	Incomplete	D
• Electric Vehicles	B+	B+	B
• Reducing Transportation Emissions	D	D	C
• Climate Change Adaptation	*	*	A–
<b>Water</b>			
• Drought Preparedness and Management	*	C	B+
• Water Management Act Permitting	Incomplete	D	D
• Interbasin Transfer	*	C	*
• Stormwater Management	C	Incomplete	*
• Delegation of Water Pollution Control Programs	D	D	F
• Repeal of Site-Specific Criteria For Lakes And Ponds	F	*	*
• Water Conservation Standards	*	*	B+
• Culvert and Dam Repairs, Replacements & Removals	*	*	A
<b>Environmental Justice</b>	B–	C–	D
<b>Preserving Public Rights in Public Trust Lands</b>	*	*	D
<b>Land Conservation</b>	B	B+	A–
<b>Reducing Toxic Chemical Use</b>	D	C–	D
<b>Solid Waste</b>			
• Metrics	*	D–	C–
• Decreasing Msw Disposal	*	D	D
• C&D Recycling	*	Incomplete	D
• Waste Ban — Food	*	A	A
• Waste Ban Enforcement	*	C	C
• Protect Environment from Dangerous Facilities	*	B	F

\* Issue not included in this year.





## The Environmental Budget

**T**his was the last year for Governor Baker to make good on his campaign promise to increase spending on environmental protection to 1% of the state budget by the end of his first term. When he released his FY 2019 budget in January, we once again saw no progress in that direction. Environmental spending makes up just 0.54% of the budget and while we did not realistically expect the administration to almost double environmental spending in one year, we had hoped for an increase to indicate a reversal of the trend of under-resourcing our environmental agencies.

A bright spot in the Governor's budget included \$2 million in new funding for climate adaptation and preparedness. While we thank the Governor for dedicating resources to address a critical issue, many of the traditional bread and butter responsibilities of our environmental agencies are not being carried out.

We have previously documented the significant cuts to the agencies resulting in loss of staff that was exacerbated by the administration offering Early Retirement in 2015 to further reduce spending. While a few dozen staff recently have been hired by the environmental agencies, that cannot make up for the hundreds of staff positions that have been lost.

The Department of Conservation and Recreation has lost nearly 400 full-time positions (30% of its workforce) in the last seven years. DCR currently has 839 full-time equivalent staff (FTEs), down from 1,279 in 2008. This means:

- The entire state is served by only one 15-person maintenance crew.
- The camping season was shortened again this year and is the shortest season in recent history.
- DCR field managers are spread across more properties, leaving many facilities and lands



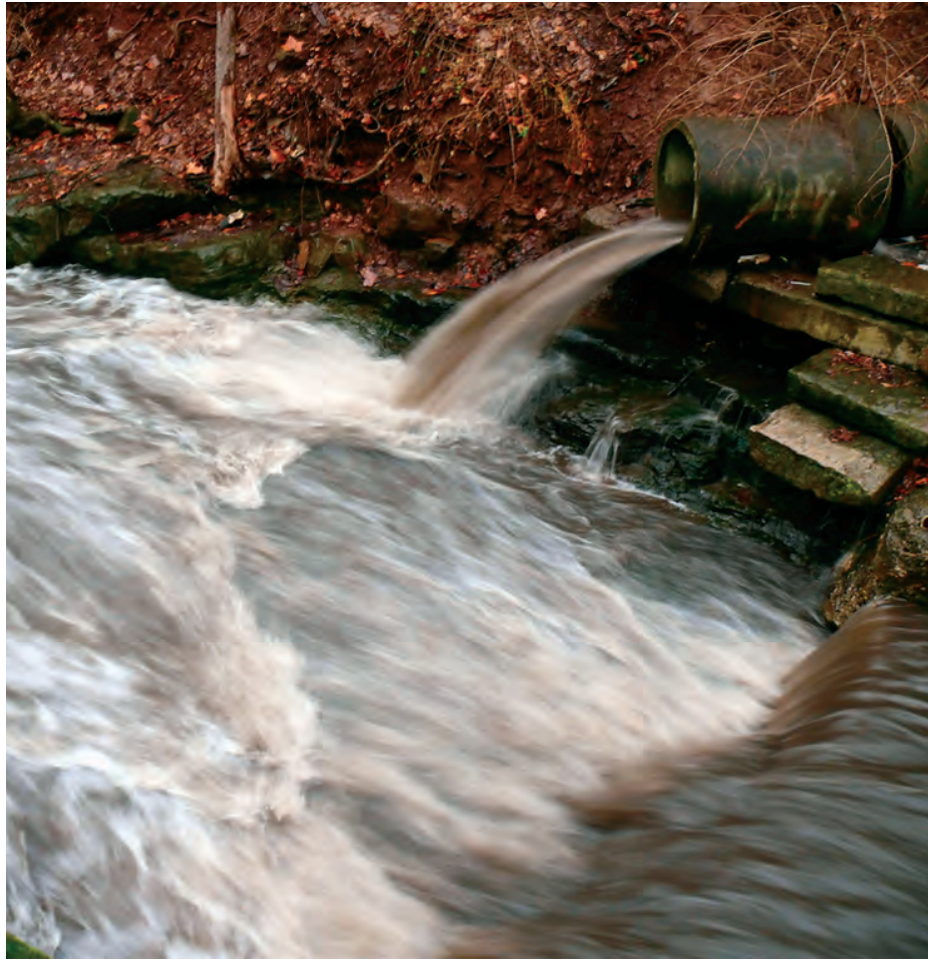
essentially unstaffed or infrequently monitored to guard against inappropriate or illegal activities.

At MassDEP, the current level of 660 full-time equivalent staff is one of the lowest staffing levels in the past dozen years. In 2008, staffing levels were 941. The agency has multi-year backlogs in its water quality monitoring, assessment, and reporting; development of water pollution control plans (TMDLs); and issuance of water supply permits.

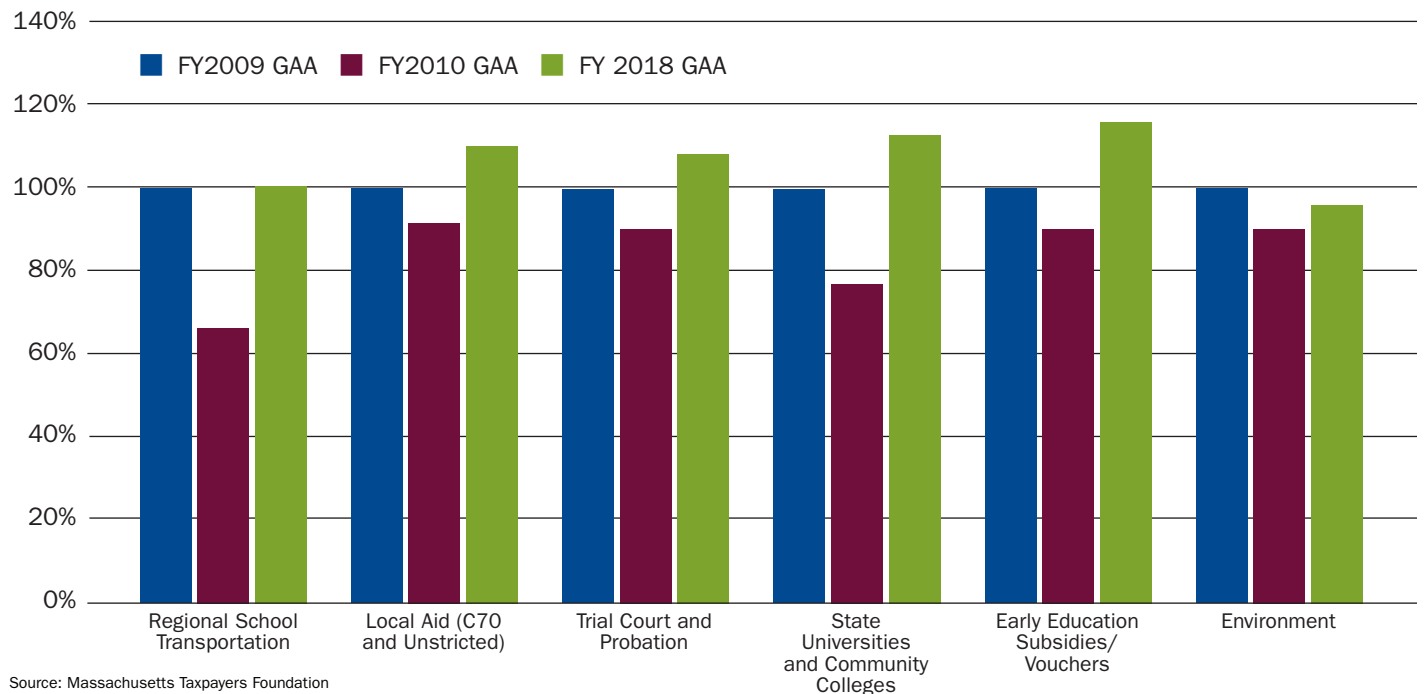
The chart below compares funding levels for a number of different agencies before, during and after the 2008 recession. What is clear is that each of the other agencies has recovered or exceeded their funding levels while the environmental agencies have not. We don't lay the blame for insufficient funding solely at the Governor's door as the legislature shares responsibility, but the Governor made the commitment and his budgets convey his priorities.

## RECOMMENDATION

**Allocate 1% of the state budget to environmental agencies.**



## Spending Comparison: Pre-Recession to Current





## Energy and Climate Change

With a continued lack of leadership and the potential for serious backsliding on energy and climate policy at the federal level, action by states has become even more necessary over the past year. Although EEA has taken much-needed steps to implement the Global Warming Solutions Act requirements for 2020 and is engaging in dialogue with stakeholders on the critical topics of transportation emissions and climate adaptation, we still see a critical lack of the bold leadership and difficult decisionmaking that will be necessary to ensure that the Commonwealth is on track to meet our 2050 greenhouse gas emissions reduction requirements.

We know that energy efficiency is cost effective and creates jobs. Despite our top ranking in the nation for energy efficiency, we need to ramp up our efforts and ensure that all residents have access to energy efficiency programs. While the

recent announcement of the procurement of 800 MW of offshore wind is cause for excitement and positions Massachusetts as a center for offshore wind related facilities and jobs, we need to keep the momentum going for continued development of renewable energy. The administration has taken some modest steps on energy storage that will make renewable energy more reliable, but we need to do more. We need to re-imagine how energy is generated and delivered, and develop policies and incentives to encourage utilities to transition from a centralized system to one that can take advantage of new technologies and energy sources.

Perhaps most critically, we must aggressively address the 40% of GHG emissions from the transportation sector. Time is of the essence as we experience the effects of climate change. It is critical that we accelerate our efforts on all fronts to tackle climate change.





## ENERGY EFFICIENCY

GRADE

B

Massachusetts continues to earn accolades for its nation-leading energy efficiency (EE) efforts, growing out of the Green Communities Act of 2008 and other policies. However, the Commonwealth can and must increase its efforts in energy efficiency, both to ensure equitable access to energy efficiency measures for all residents and businesses and to aggressively reduce greenhouse gas emissions from the buildings sector. As the energy efficiency programs continue to transform the lighting market, innovative program design, deeper savings, and more widespread deployment of heat pumps are needed to continue to increase the amount of greenhouse gas reductions achieved each year from energy efficiency.

**Renters, moderate income residents whose incomes are too high to qualify for low-income EE programs, and residents who primarily speak languages other than English can be more challenging to reach with efficiency measures than upper-middle-class homeowners. This means that the energy efficiency Program Administrators need to increase their efforts to reach these communities,** and EEA must both collaborate in this effort and hold the Program Administrators accountable to equitably reaching customers, all of whom are paying into the utility-run Mass Save programs.

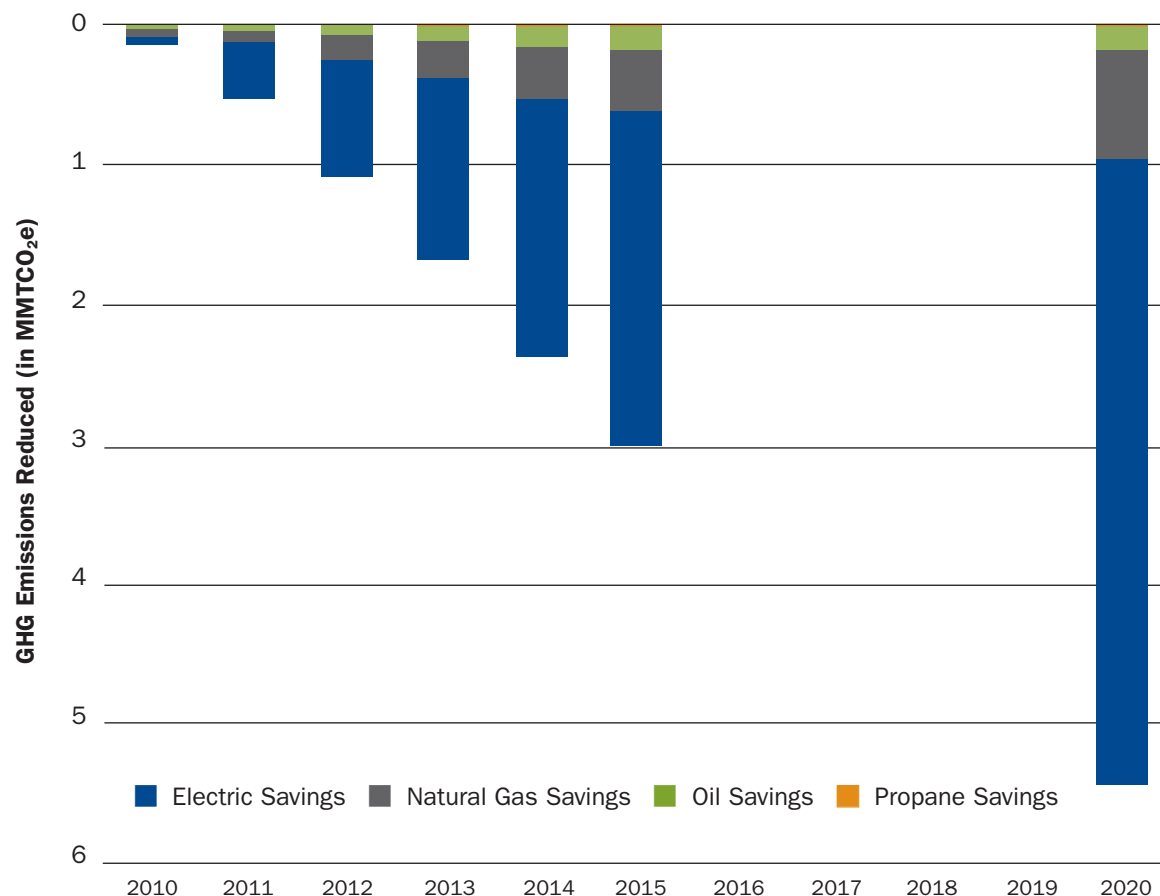
EEA's planning for 2020 (see Figure, p. 10) already anticipates further significant greenhouse gas emission reductions, and efficiency will continue to be critical to meeting Massachusetts' 2050 GHG reduction requirements. The Baker Administration's

leadership is urgently needed in three areas that must be addressed for energy efficiency programs to increase carbon emission reductions. First, great strides have been made in the lighting

**The Commonwealth must take advantage of the technologies and delivery models already succeeding in the energy efficiency programs to push for the creation of a robust demand management initiative. Managing peak demand brings multiple benefits.**

sector, but the road to 2050 must be paved with deeper efficiency measures and replacing heating and hot water equipment with renewable heating measures like air source and geothermal heat pumps. Second, the full costs associated with compliance with the GWSA need to be incorporated into the calculation of the cost effectiveness of energy efficiency measures by the Program Administrators. Third, the Commonwealth must take advantage of the technologies and delivery models already succeeding in the energy efficiency programs to push for the creation of a robust demand management initiative. Managing peak demand brings multiple benefits, including reducing the number of hours the dirtiest power plants on our grid need to run and delaying and reducing the magnitude of expensive upgrades to the local systems that deliver us electricity and gas. Leadership

### GHG Emissions Reduction from Energy Efficiency



Source: DOER (<https://www.mass.gov/service-details/building-fuels-and-energy-efficiency>)

and accountability from the Dept. of Energy Resources (DOER) will be essential to increasing energy efficiency savings and transforming the Commonwealth's energy efficiency programs.

The Governor has introduced legislation to require home energy audits when a house is listed to be sold, an idea that has been introduced several times before and which we support. However, in the Governor's bill this worthy concept is tied to an unacceptable funding concept, which would take funds raised through the Regional Greenhouse Gas Initiative (RGGI) from energy efficiency programs and allow them to be used at DOER's discretion for any purpose falling under the broad categories of climate change adaptation and greenhouse gas mitigation. No matter how deserving of funding such areas are, this reallocation would result in

Massachusetts spending its RGGI funds inefficiently, as only energy efficiency is the least-cost resource.

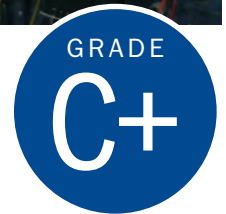
### RECOMMENDATIONS

- **Take steps to ensure that "harder to reach" communities are equitably served with EE.**
- **Develop measures to incorporate the full cost of GWSA compliance in total resource cost determinations.**
- **Expand cost-effective conversions from less efficient heating measures like oil, propane, gas, and baseboard electric, to heat pumps.**
- **Promote legislation to strengthen the Commonwealth's energy efficiency efforts that is not tied to unacceptable diversions of funding away from energy efficiency.**





## RENEWABLE ENERGY AND ADVANCED ENERGY STORAGE



In 2017 and early 2018, there have been numerous significant developments in renewable energy and advanced energy storage. Many of these developments are a result of the 2016 Energy Diversity Act, as well as the 2016 Act relative to Solar Energy along with regulatory processes resulting from the decision by the MA Supreme Judicial Court (*Kain v. DEP*) that required the state to develop regulations to reduce greenhouse gas emissions from all sectors of the economy.

The Energy Diversity Act required utilities to procure clean energy from sources like hydropower and wind as well as substantial amounts of offshore wind capacity. There were many concerns about language in the Energy Diversity Act related to the process by which these renewable resources would be secured. The Act gave utilities a role in developing the request for proposals as well as a role in selecting the winning proposal. Given that the utilities, notably Eversource and National Grid, would also be submitting project proposals, a clear conflict of interest was created in this legislation signed by the Governor. These major concerns were raised by stakeholders at the time of the debate over the legislation, and proved to be well-founded given that the utility-led selection committee chose Eversource's proposal for the Northern Pass transmission line. Northern Pass would transmit only large hydropower and no Class I renewable resources. This hydro-only proposal was a missed opportunity to develop a more diversified set of renewable resources such as

on-shore wind and solar. A more diversified approach could have been a boost to the domestic renewable energy sector. Instead, the Northern Pass project would have just benefitted a large existing Canadian hydropower company. As it turned out, the Northern Pass project was denied a key permit by the New Hampshire Siting Committee essentially killing the project. The selection committee has moved on and now selected the New England Clean Energy Connect proposal from Avangrid. This proposal may have fewer siting issues, but will also transmit only large Canadian hydropower and includes no solar or wind energy.

In May 2018, the Baker administration announced the selection of 800 MW of offshore wind from the Vineyard Wind project under a procurement ordered by the Energy Diversity Act. This is an important milestone in the development of an offshore wind industry in the Commonwealth. The Administration should move forward with the second 800 MW request for proposals as quickly as possible, and work with stakeholders to ensure that sensitive and endangered marine resources are protected as offshore wind becomes a major source of energy for New England.

The 2016 Energy Diversity Act also authorized the Dept. of Energy Resources (DOER) to determine whether to set targets for electric companies to procure viable and cost-effective energy storage systems by January 1, 2020. Because energy storage will be crucial to the successful integration

of greater amounts of intermittently available renewable resources like solar and wind, numerous stakeholders advocated that the DOER set aggressive and meaningful storage targets. However, DOER chose to implement a voluntary target of only 200 MWh of storage capacity by 2020. Despite this modest storage policy from DOER, other developments in the Commonwealth may help push storage policy forward. These developments include the Advancing Commonwealth Energy Storage program from the Mass Clean Energy Center, the approval of Eversource-owned storage in a recent rate case, and the new solar incentive program described below.

DOER began work in 2016 on a new solar incentive policy aimed at replacing the existing Solar Renewable Energy Credit (SREC II) program. Under this new program known as Solar Massachusetts Renewable Target (SMART), solar developers will be compensated with a fixed price for each kWh of energy produced. These prices would vary, depending on the location of the solar facility (for example, new solar on a closed landfill would be compensated at a slightly higher rate than solar on a farm field) and the customers they would serve (here, new solar serving low-income customers would be compensated at a slightly higher rate than other customers). We appreciate the administration's efforts to protect environmentally sensitive areas by providing greater solar incentives in areas suitable for development and for helping to equitably distribute the benefits of renewable energy. We applaud DOER for running a substantive stakeholder process and responding to some stakeholder concerns in the subsequent regulatory process.

The SMART program is still under development because the Dept. of Public Utilities (DPU) must give final approval to certain elements of the program. Important issues still need to be resolved in this DPU proceeding. Among these is the treatment of some aspects of community and low-income solar projects. Successful development of projects that benefit low-income residents and their communities must be a priority for the Commonwealth going forward.

While the Energy Diversity Act and other developments described here are moving us towards meeting Massachusetts' needs for clean energy, more needs to be done as we seek to transition away from fossil fuels and meet our longer-term greenhouse gas reduction requirements. **Numerous renewable energy-related bills have been filed in the 2017-2018 legislative session that would help us meet those goals. Specifically, legislation that would increase the Renewable Portfolio Standard (RPS), which requires energy utilities to purchase a certain percentage of their energy from renewable sources, is up for consideration. We are disappointed that as of this writing, the administration has not heeded our call to support policies to increase the amount of renewable power such as an RPS increase and more ambitious energy storage requirements.**

## RECOMMENDATIONS

- **Support the proposed increase in the Renewable Portfolio Standard so that the program can continue to support local renewable energy and jobs in the renewable energy industry.**
- **Ensure that the next phase in the development of offshore wind moves forward quickly and assess the need for additional offshore wind resources above and beyond 1600 MW.**
- **Support legislation to set meaningful and aggressive energy storage targets for 2025 and 2030 in line with the DOER and Massachusetts Clean Energy Center's State of Charge report.**
- **Ensure the SMART program prioritizes an equitable distribution of solar program benefits.**
- **Take all necessary steps to ensure that the siting of new energy infrastructure is done in a responsible manner and minimizes harmful impacts to natural resources including agricultural soils, wildlife habitat, forests and protected lands, while also maximizing our ability to take advantage of Massachusetts' renewable energy potential.**





# REDUCING GLOBAL WARMING POLLUTION AND ADVANCING CLEAN ENERGY



The Global Warming Solutions Act (GWSA) of 2008 created a legal requirement to reduce greenhouse gas (GHG) emissions from all sectors of the economy by 25% by 2020 and by at least 80% by 2050 (below the 1990 baseline emission level).

In 2017, EEA finalized regulations aimed at reducing greenhouse gas emissions in response to a decision by the Supreme Judicial Court in 2016. The rules, referred to as the “3(d)” rules, generally move the state in the right direction to reduce emissions.

While the direction of the 3(d) rules is positive, there are concerns. In particular, the transportation sector emissions limits of the 3(d) rules are focused on state vehicle fleet emissions reporting and generally lack a meaningful enforcement provision.

**The Regional Greenhouse Gas Initiative (RGGI) is another critical program that has supported clean energy and energy efficiency in Massachusetts while reducing carbon pollution. In 2017, the RGGI states approved changes that extend the program from 2020 to 2030 and set requirements that emissions be reduced by 30% in that timeframe.** Committing to an adjustment for banked allowances, establishing an Emissions Containment Reserve and improving the Cost Containment Reserve will strengthen the program

**In 2017, the Regional Greenhouse Gas Initiative states approved changes that extend the program from 2020 to 2030 and set requirements that emissions be reduced by 30% in that timeframe.**

going forward. To their credit, officials in the Baker administration were among the first from RGGI states to pledge support for strengthening the program. EEA must not delay in promulgating regulations to implement new carbon reductions to meet the new RGGI Model Rule. DOER and MassDEP scheduled hearings on changes to existing RGGI regulations for May 2018 and should work diligently to adopt new RGGI regulations as soon as possible.

Further, we recognize and thank the Baker administration for demonstrating leadership in the face of three federal efforts that will be detrimental to our climate change goals. First, in May 2017, Governor Baker joined fellow Republican Governor Scott from Vermont in a letter to the Trump administration urging the federal government to maintain commitments to the Paris Climate Agreement. In early 2018, Governor Baker formally objected

to new federal plans spearheaded by Interior Secretary Ryan Zinke to explore offshore oil and gas drilling off the coast of Massachusetts. Most recently, the state stood with other states to reject the potential weakening of the clean car standards by EPA.

### RECOMMENDATIONS

- **Strengthen the GWSA rulemakings and make the transportation sector emissions limits enforceable.**
- **Support efforts to extend the GWSA regulations to 2050. Set a goal of a 50% emissions reduction from 1990 levels by 2030 to be on the path to meet reductions of 80% by 2050.**
- **Expediently promulgate regulations to implement new carbon reductions to meet the new RGGI Model Rule.**
- **Establish the carbon reduction research center that was authorized by the energy diversity legislation in 2016.**
- **Support legislation that would put a price on carbon—an approach that would send strong market signals to spur the transition to a clean energy future.**
- **Continue to push back on federal policies that are detrimental to the Commonwealth's efforts to reduce climate change.**



## GAS PIPELINES

The Governor and EEA continue to support the expansion of pipeline gas used for heating and power generation. This focus on a fuel that is only approximately 25% lower in greenhouse gas emissions than the oil it would replace is badly misguided. The Commonwealth is already overly dependent on gas for electric power, and any greenhouse gas savings to be gained between now and 2020 by converting oil heating equipment to gas will be short lived, as we will need to convert many homes from fossil heat (whether oil, propane, or gas) to clean 2050-compliant systems like heat pumps well before 2050. Adding natural gas infrastructure in Massachusetts, which can have a useful lifespan of over 50 years, means that utility customers will be stuck paying for that infrastructure long after we have ceased to use it.

Further, EEA agencies have not taken adequate steps to control methane emissions from local gas distribution systems. Methane's global warming potential is 87 times that of CO<sub>2</sub> in the twenty years after it is emitted. Stricter declining annual emissions caps are needed to help us meet Massachusetts' 2050 emissions reduction requirements. And to better incentivize utilities to fix leaks in the systems they operate, EEA should also support legislation and/or regulation to limit the amount of leaked gas for which utilities can bill their customers.

### RECOMMENDATION

**The Governor should make a strong move toward the Commonwealth's future and commit to stopping any expansion of interstate gas pipeline capacity, and take further steps to control methane emissions.**





## MODERNIZING THE ELECTRIC GRID AND PROVIDING SMART AND EFFICIENT RATES



The energy system in Massachusetts is undergoing a significant transition as consumer-centric technologies upend the historic model of simply supplying energy to consumers. Utilities face expectations to accommodate and promote distributed solar, efficiency, smart energy management, and energy storage, even as these technologies challenge current regulatory structures. Clearly, **reforms are required to move beyond the historic model of centralized power stations and large utility infrastructure to a 21st century energy system that takes full advantage of smart and efficient appliances, electric vehicles and other storage, and rooftop solar.**

Massachusetts had been a leader in this area under the Patrick administration. In 2014, the Massachusetts Department of Public Utilities (DPU) ordered utilities to develop plans focusing on four grid modernization objectives: 1) reducing the effects of outages; 2) optimizing demand and reducing system and customer costs; 3) integrating distributed resources; and 4) improving workforce and asset management. This order was inadequate in some ways, particularly because it failed to tie utility earnings to grid modernization outcomes. But the overall approach was cutting edge.

Unfortunately, progress in this area stalled starting in 2015. Utility plans in response to the order did not adequately address the fundamental challenges and opportunities in the transition to a

clean, distributed, customer-centric energy system. National Grid outlined the most ambitious investment plan, with deployment of advanced metering infrastructure to enhance consumer energy options and control and optimize the operation of the system. National Grid failed, however, to adequately prepare for integration of distributed energy resources and the transition from a one-way power delivery model to a multi-directional, networked system. Eversource focused on upgrading grid-side infrastructure rather than focusing on consumers and did not provide a strategic plan for adapting to shifts in the energy system and using distributed technologies to deliver lower, more stable energy costs. Unitil also presented a modest proposal, predicated in part on prior installation of metering infrastructure with limited functionality.

The DPU has not approached these proceedings in an urgent way; there have been multiple delays in 2015 and 2016. Hearings and briefing in the grid modernization dockets finally occurred in 2017. The DPU finally issued an order in these proceedings on May 10, 2018, which represents a modest step forward in some respects, but falls short of a broader vision for utility reform. Even within the narrow confines of this order, key consumer protections and accountability mechanisms, such as rigorous benefit-cost analysis, appear to have been cast aside and there are still numerous details to work out. Moreover, the previous delays to the proceedings represent a real harm to

the Commonwealth's consumer and clean energy goals.

Separately from the investment-focused grid modernization proceedings, National Grid and Eversource have proposed major changes to electricity rates and utility regulation that would seriously impact consumers and clean energy. In 2016, the DPU laudably denied National Grid's proposals for tiered customer charges and unreasonable access fees for clean distributed generation.

In early 2017, Eversource made a range of counterproductive proposals in a rate case, which would impose higher costs on ratepayers without meaningful accountability for benefits to the Commonwealth and take major steps backwards on efficient and consumer-friendly rate design. While some of these proposals were denied, four notably harmful proposals were approved by the DPU: (1) an unreasonably high return on equity for Eversource shareholders; significantly higher than returns in neighboring states; (2) automatic annual rate hikes without links to benefits for consumers or the Commonwealth; (3) complex and unprecedented demand charges for new residential solar customers; and (4) elimination of residential time-of-use rates, which provide incentives for peak demand management. Each of these approved proposals heads in the wrong direction for consumers and clean energy, potentially costing ratepayers an additional \$460 million over five years.

Without improvements in grid modernization plans, Massachusetts utilities will struggle to adapt to accelerating trends toward an increasingly networked, electrified, and low-carbon energy system. Without improved business models, the utilities will not have the incentive to propose such plans. Without greater transparency, coordination and stakeholder engagement, Massachusetts will fail to develop a consistent and broadly-supported plan to modernize the grid. Without improved rate structures, customers will not have

the proper incentives to increase the efficiency of the electric system. Neighboring states, including Rhode Island and New York, are taking steps to address all of these issues and Massachusetts is now falling dramatically behind.

**Without improvements in grid modernization plans, Massachusetts utilities will struggle to adapt to accelerating trends toward an increasingly networked, electrified, and low-carbon energy system. Without improved business models, the utilities will not have the incentive to propose such plans.**

## RECOMMENDATIONS

- **Complete the current grid modernization proceedings and initiate a Grid Modernization 2.0 proceeding that (1) aligns utilities' financial incentives with grid modernization objectives, (2) establishes a consumer advisory board for grid modernization to promote transparency and stakeholder support for investments, (3) optimizes usage of clean local energy resources for the benefit of consumers, and (4) protects low-income consumers.**
- **Examine options to require utilities to fully consider cheaper clean local energy alternatives to traditional infrastructure investments.**
- **Reverse the counterproductive decisions from the Eversource rate case, by stopping the automatic annual rate hikes going forward, finding a better solution for residential solar customers, and providing optional time-of-use rates for residential and small business customers.**





## ELECTRIC VEHICLES

GRADE

B

Studies have demonstrated that the transition to electric vehicles is critical to achieving deep decarbonization of transportation and is one of the most cost-effective strategies to reduce carbon emissions. Electric vehicles can also provide other major benefits to the Commonwealth by sharply reducing fuel and maintenance costs for drivers, benefiting the regional economy by keeping dollars that are currently spent on imported petroleum products in the local economy, and improving public health by eliminating tailpipe emissions.

Over the past several years, policy to support electric vehicles and EV charging has been a relatively bright spot for EEA and the Baker administration. The Commonwealth's electric vehicle rebate program (MOR-EV), where consumers can qualify for rebates ranging from \$750–\$2,500 on qualifying new electric vehicles (EVs), has been an unqualified success, helping to spur an enormous growth in adoption over the last few years.

This rebate program has been supplemented by MassDEP programs to promote adoption of electric vehicles and EV charging by cities, towns, state agencies, colleges, and universities. MassDOT has also installed EV fast charging stations (which can charge an EV in 20 minutes) at service plazas along the Massachusetts Turnpike, and the DPU has approved a program for Eversource to help customers install EV charging stations. Governor Baker also signed an Act Promoting Zero Emission Vehicle Adoption in January 2017, which will help lay out a productive framework for key

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issues around EV adoption going forward. The MASS DRIVE CLEAN program, run by a private entity in coordination with MassDEP and EEA, has had great success with public “ride and drive” events for electric vehicles.

However, EEA and the administration more broadly have not prioritized advancement of electric vehicles. They have primarily continued existing programs with very few new initiatives. A pilot program for low-income residents, which provides more generous rebates, extra assistance with charging, and applies to used electric vehicles, has taken well over two years to get started and is only available in two counties. The DPU has allowed Eversource to eliminate optional residential “time of use” rates, which can make EV charging cheaper and provide incentives to charge off-peak. Similarly, two attempts to incorporate EV wiring provisions into the building code have been rejected by the Board of Building Regulation and Standards, although this entity is not within the purview of EEA. The number of electric buses in operation

at transit agencies has remained static at nine for a substantial period of time. A procurement for the MBTA has been delayed, although six electric buses are scheduled to join the fleet at Martha's Vineyard Transit Authority (VTA) this summer.

Because of this lack of leadership, other states and jurisdictions are beginning to surpass Massachusetts in key areas. California and Washington are moving ahead with robust statewide low-income programs and numerous jurisdictions are dramatically accelerating their adoption of electric buses. New York has also begun to make substantial commitments, using general budget funding to establish a new well-funded EV rebate program, a commitment for select state agencies to ensure that 50% of new administrative-use vehicles will be electric, and promotion of time-of-use rates for electric vehicles.

In addition, EEA has dramatically scaled back a previously collaborative relationship with electric vehicle advocates, failing to respond to a letter from a group of seven organizations and other requests for updates on reports and programs under development. For example, neither advocates nor the public was alerted when a report on opportunities to electrify the state fleet, mandated by the 2016 EV law, was submitted to DOER in December 2017.

More generally, delays, failure to coordinate effectively across secretariats, and a lack of ambition is disappointing in an area where technological progress has been coming so quickly and the potential rewards of increased adoption are so high. However, the success of current programs and continued progress merits an overall grade of a B.

## RECOMMENDATIONS

- **Wisely invest the \$69 million plus in funds available through the Volkswagen Environment Mitigation Trust to accelerate investment in zero emission vehicles such as electric transit buses, school buses and port vehicles, including using the full 15 percent of funds available for charging infrastructure.**
- **Provide new funding for existing charging station programs either through the VW settlement or other means such as the environmental bond bill.**
- **Develop a statewide low-income rebate program and EV car sharing pilot programs, particularly focused in low-income communities.**
- **Incorporate electric vehicles in grid modernization frameworks and efforts to manage demand, including time-of-use rates.**
- **Develop initiatives to strengthen the consumer EV shopping experience at auto dealerships through training salespersons on EV technology and programs that incentivize dealerships to sell more electric vehicles through financial incentives and recognition. The Boston e-Star Program leveraged federal funds to establish a no-cost EV sales training program for dealerships in the metro Boston area, however EEA was not a leader here.**
- **The Commonwealth should consider alternative procurement models, including leasing options for near term bus replacements and group purchases to accelerate the integration of electric buses into transit fleets.**
- **The Regional Transit Authorities (RTAs) have been leading the way in Massachusetts when it comes to operating electric buses. The Commonwealth should restore and increase funding for RTAs so that they can maintain and strengthen service quality, add new routes, build ridership and continue to invest in zero emission electric buses.**





## REDUCING TRANSPORTATION SECTOR EMISSIONS



Transportation now produces 39% of the state's greenhouse gases (GHGs), more carbon pollution than all of the power plants in the state, or the industrial, residential and commercial sectors.

The fact that carbon pollution from the power sector has gone down dramatically is good news. This is due in part to state policymakers focusing on reducing emissions in that sector. They have taken bold actions that, along with changes in the price of natural gas, have produced results. On the power side, the policies have been a judicious blend of market-based programs and performance standards with new clean energy technologies (solar and wind power for example), the Renewable Portfolio Standard (RPS) and a wide array of energy efficiency programs. But our state leaders haven't developed and implemented similar policies for the transportation sector. The lack of progress in reducing transportation emissions remains disappointing and demonstrates a lack of vision and innovation on the part of the administration.

There needs to be a sense of urgency on the administration's part. Now is the time for the Governor to create a parallel portfolio of transportation sector reduction programs and to make good on his commitment to reach our GWSA mandates by leading the way to develop and implement new, ambitious, and coordinated policies. There is no silver-bullet scenario that

achieves the ambitious 80 percent GHG reduction target required by the Global Warming Solutions Act, but many options are possible. Because of the complexity of the transportation system, it will take careful coordination and consideration across modes and tailored to place.

**Fortunately, most of the tools needed to make a clean, zero-carbon transportation system possible already exist. They include: electrification of vehicles of all sizes, increased use of shared-mobility services (car-sharing, bike-sharing, and ride-sharing), more and better public transportation, greater transit-oriented development that doesn't displace current residents, safe and walkable neighborhoods, and smart pricing for roads and parking, to name a few.**

The existing state Climate Plan has relied heavily on new vehicles meeting the Obama administration Federal CAFE Standards which requires automakers to nearly double the average fuel economy of new cars and trucks to 54.5 miles per gallon by 2025 and the introduction of progressively cleaner new car technologies, such as electric vehicles and battery first hybrids. The Trump administration is launching an effort to weaken greenhouse gas emissions and fuel economy standards for automobiles, handing a victory to the oil industry and to some of the less efficient car manufacturers and giving them ammunition to roll back industry standards worldwide. Massachusetts has adopted



the California standards and so is protected to some extent, but we may need to help fight this issue in court yet again.

In Sept. 2016, the Governor issued Executive Order 569 that directed the Secretaries of Energy and Environmental Affairs and Transportation to work together on regional policies to reduce emissions from the transportation sector. Expanding on this collaborative approach, four statewide transportation listening sessions were co-hosted by EEA and MassDOT this past fall. The public listening sessions asked people to comment on large-scale strategies to:

1. Reduce transportation sector emissions through measures addressing vehicles, fuels, and land use;
2. Develop a comprehensive regional strategy for the deployment of zero emission vehicles;
3. Increase the resilience of transportation infrastructure as the climate changes; and
4. Address environmental justice, low income and rural communities.

The state continues to participate in several regional efforts including the Transportation Climate Initiative (TCI), the New England Governors and Eastern Canadian Premiers, and the Multi-State Zero Emission Vehicles Memorandum of Understanding. What is lacking though is leadership in each of these and it would be appropriate for Massachusetts to resume the mantle it has had in leading these groups and supporting other, smaller New England states where possible.

The administration has made it a high priority to upgrade maintenance and to address the state of good repair on the MBTA, remedying some of the problems that occurred in the winter of 2016—just as Governor Baker took office. Since the MBTA serves over 1 million daily riders, maintaining service is important for economic, social and environmental reasons and the attention paid to upgrading the system is warranted.

Due to rising sea levels and stronger, more frequent weather events, the MBTA is seeing system-wide impacts and is reacting by taking the following steps:

- Undertaking a comprehensive analysis of the current system to understand which routes and stations are at the highest risk.
- Developing a plan for tracking, managing, and updating at-risk infrastructure and
- Using a new vetting process for engineering and development decisions based on climate change adaptation criteria.

Finally, Governor Baker should be commended for creating The Commission on the Future of Transportation in the Commonwealth through **Executive Order 578** and appointing an 18-member panel with an interesting mix of members. The commission is charged with advising the administration on “how to ensure that transportation planning, forecasting, operations and investments for the period from 2020 through 2040 can best account for likely demographic, technological, climate, and other changes in future mobility and transportation behaviors, needs and options.”

## RECOMMENDATIONS

- **Address the transportation funding crisis through leadership and honest talk with the taxpayers of the Commonwealth—we need to raise additional revenue for transportation.**
- **Work with other TCI states to create a regional program that caps transportation carbon emissions across the region and requires wholesalers selling gasoline and other transportation fuels to purchase allowances to cover the emissions from their products. Auction the allowances and use the revenue to expand mobility and modernize transportation infrastructure and services. Design the program to protect low- and moderate-income households from any higher costs that they might experience.**
- **Create a Working Group of the Environment and Energy, Housing and Economic Development and Transportation Agency heads that meets regularly and works together to phase out all carbon emissions from the transportation sector.**
- **Continue the good work to improve vehicle energy efficiency by actively opposing the President’s efforts to reverse advances in fuel efficiency and protecting our legal connection with the California Clean Car Program.**



## CLIMATE CHANGE ADAPTATION



As we experience the impacts from climate change with more extreme storms, heat and drought, the Commonwealth needs a two-pronged approach—reducing greenhouse gas emissions and preparing for the impacts of a warming climate. Impacts will be felt statewide and much needs to be done to identify vulnerabilities, plan for climate change impacts, and provide resources to adapt.

**The administration has taken a number of significant actions to move a climate change adaptation and resiliency agenda in the Commonwealth. In September 2016, Governor Baker issued Executive Order 569 “Establishing an Integrated Climate Strategy for the Commonwealth” that helped launch a statewide climate adaptation planning process and a municipal technical assistance program along with a climate change information clearinghouse.**

- **Integrated Plan:** EEA and the Executive Office of Public Safety and Security (EOPSS) plan to deliver in September 2018 a first-of-its-kind Integrated State Hazard Mitigation & Climate Adaptation Plan that will identify the Commonwealth vulnerabilities to hazards and propose actions for adaptation and resiliency. Additional information about this process can be found at <https://resilientma.com>.
- **Municipal Technical Assistance:** In spring 2017, EEA launched the Municipal Vulnerability Preparedness Program (MVP). MVP helps communities identify social, infrastructure and environmental strengths and vulnerabilities to climate

change impacts and prioritize next steps related to adaptation and resiliency. The local planning process will help communities:

- Define extreme weather and natural and climate related hazards
- Understand how their community may be impacted by climate change based on the latest science and data
- Identify existing and future vulnerabilities and strengths
- Develop and prioritize actions for the community
- Identify opportunities to take action to reduce risk and build resilience

To date, the program has enlisted 66 communities to work with trained service providers to develop priorities and conduct preliminary planning. Once a community has completed this process they are certified for state funding and technical assistance for climate change adaptation. MVP communities must continue to make progress in order to remain certified. EEA just announced a second round of \$5 million of MVP funds and added an “Action” category for certified MVP communities of up to \$400,000 to take the next steps to implement their plans.

- **Clearinghouse:** As first announced at the 2017 Municipal Climate Change Summit, EEA/EOPSS produced the resilient MA Climate Clearinghouse to ensure continued access to information and provide communities with the best science and data on expected climate changes, information on community resiliency, and links to important



grant programs and technical assistance. The site also catalogues specific vulnerabilities, risks and strategies concerning agriculture, forestry, local government, education, energy, recreation, and transportation. All of the climate projections included on the website are specific to Massachusetts and were produced by the Northeast Climate Science Center at UMass-Amherst. Also included is an interactive map so that users can understand how climate change will affect their specific location and the resources they manage. <https://Resilient-ma.org>.

In March 2018, Governor Baker filed a \$1.4B Environmental Bond bill with a focus on climate change adaptation and resiliency. In the statement that accompanied the legislation, the Governor stated that this bond will “enable critical investments at the state and local level that will build upon upon **Executive Order 569** to build a more resilient Commonwealth.” If enacted into law, the Bond would:

- Codify the Plan and MVP Program into law for greater permanence for subsequent administrations.
  - Authorize funding for state agencies and their programs for climate adaptation and resiliency.
- While these measures by the Baker administration position Massachusetts as a national leader, there is a need for a complementary suite of policy and funding that would improve the grade to an “A”.

## RECOMMENDATIONS

- **Revise state regulations, policies and guidance through the lens of climate change to require and incentivize best management practices for adaptation and resiliency by municipalities and the private sector.**
- **Include criteria in the MVP Program to require and incentivize communities to adopt best management practices, such as revising local by-laws and ordinances to be more climate-friendly.**
- **Ensure that bond funding provides an equal opportunity for nature-based solutions that conserve, enhance and restore natural resources to enhance climate adaptation, build resilience and mitigate climate change.**
- **Support a coastal buy-back program that acquires ecologically valuable land from willing owners who have suffered repeated damages to their property.**



# Water

Climate change has already begun wreaking havoc on the Commonwealth, bringing with it dramatic water impacts—flooding, droughts, and changes in water quality. Yet after three years, EEA has failed to articulate a clear vision, or set of goals, to protect the Commonwealth's freshwater resources, now and in the future. Without a plan, policies to implement it, or a commitment to invest in solutions, we risk worsening climate change's impacts on human health, public safety, and environmental quality.

Many of the administration's choices seem to be leading us backward. Despite the fact that more than half the state's waterbodies fail to meet their water quality goals due to stormwater pollution, the administration followed EPA Administrator Scott Pruitt's lead and chose not to implement the state's municipal stormwater general permits last year. Similarly, the Administration's budget proposals have left MassDEP struggling to accomplish basic clean water protection work, such as water quality monitoring, and enforcement against polluters who violate the state's water protection laws. EEA and MassDEP leadership devoted an

inordinate amount of time and energy during the past year in an attempt to move the water pollution control permitting program from the federal government to the state, an ill-conceived and expensive proposal. One encouraging note, however, is that \$1.1 million in capital funding was provided to MassDEP in FY 2017 for a variety of water quality-related projects. We hope that investment can continue and be expanded in future years.

Other bright spots include the work of the Division of Ecological Restoration (DER) within the Department of Fish and Game. DER continues to deliver a big bang for the buck, removing as many dams and upgrading culverts as it can manage on its very small budget. The Dept. of Conservation and Recreation's Office of Water Resources is ably leading a transparent, thoughtful interagency effort to revise the state's Drought Management Plan and has proposed updates to strengthen the state's Water Conservation Standards. MassDEP's Division of Watershed Protection has also done a good job of obtaining funding to investigate water quality issues in the state's two largest watersheds: the Connecticut and the Taunton.





## DROUGHT PREPAREDNESS AND MANAGEMENT

In addition to more extreme storms, scientists predict that climate change will bring more frequent summertime droughts to Massachusetts. The catastrophic 2016 drought resulted in record low flows in rivers and streams, loss of fish and habitat, and significant challenges for public drinking water supplies. Crops were also hard hit as irrigation needs increased and available water sources decreased. Following EEA's late recognition of the seriousness of the deepening drought, which also hampered the state's response, DCR's Office of Water Resources and a technical interagency group began updating the state's Drought Management Plan in the fall of 2016. The group's goals were to develop better drought metrics to identify drought earlier, improve drought stage nomenclature, and recommend actions. This important public health, safety and environmental plan is now being drafted.

Water conservation is the single most cost-effective, proactive and early measure that can be taken to dampen the impacts of drought. Non-essential outdoor water use, primarily for lawn and landscape irrigation, can double a community's summer water use. During the 2016 drought, there was no uniformity among towns in a drought region, creating the anomaly of one town with a total ban on outdoor water use, while its neighboring town had no restrictions. Currently, the EEA Secretary can only recommend, but not require, water conservation measures across a drought region—a current gap in state law.

### RECOMMENDATIONS

- **Finalize the revised Drought Management Plan for adoption by the Drought Management Task Force in June 2018.**
- **Support enactment of legislation in the next legislative session to give the EEA Secretary authority to impose uniform outdoor water use limits across drought regions and to give municipalities the legal authority to enforce such measures.**





## WATER MANAGEMENT ACT PERMITTING



MassDEP is responsible for permitting large (100,000 gallons per day or more) surface and groundwater withdrawals under the Water Management Act (WMA). Recognizing that the WMA was not protecting this precious resource, MassDEP adopted amended WMA regulations in 2014. Under the regulations, existing water withdrawal impacts must be minimized, and increased withdrawals mitigated through measures such as infiltration of rainwater into the ground to replenish aquifers and streams.

To date, MassDEP's implementation of the regulations has been poor. While the new regulations developed as part of the state's Sustainable Water Management Initiative are intended to meet true water needs while better protecting ecology, the agency's implementation of the regulations is falling far short of these goals.

Only 32 permits have been issued since adoption of the regulations, 10 of these for golf courses, while well over a hundred expired permits are backlogged and have been administratively continued. Many of these existing, older permits do not even contain reasonable water conservation measures. MassDEP is also failing to conduct mandatory five-year reviews of all WMA permits in a timely manner.

A closer look at some of the new permits makes it clear that MassDEP is failing to safeguard stream flows, and in some cases, may be making things worse. For example, MassDEP is giving public water suppliers seeking future increased

withdrawals retroactive credit for mitigation measures performed as far back as 2005. This effectively negates the mitigation requirement and virtually guarantees that these freshwater resources will continue to decline—the very opposite of the regulations' intent. Seasonal limits on outdoor non-essential water use, another requirement for new permits, starkly conflict with current EEA recommendations for reducing outdoor watering during droughts. MassDEP also loosens watering restrictions in a current year if the municipality met the state's residential water conservation standard in the *previous* year. While we understand MassDEP's desire to reward good behavior, it should not do so at the expense of environmental protection.

MassDEP bases watering restrictions in a current year on whether the municipality met the state's residential water conservation standard the *previous* year—a fairly irrational predicate on which to base seasonal outdoor water use limits.

Although many WMA permittees are not in compliance with their WMA permits, a review of MassDEP compliance and enforcement actions between 2014 and 2018, shows that the agency has brought only four enforcement actions under the Water Management Act. In two of these matters no monetary penalty was imposed; in the other two, most of the penalty for past noncompliance was suspended; the highest penalty paid was \$5,000.

## RECOMMENDATIONS

- **Require true mitigation for increased future withdrawals in WMA permits.** MassDEP should not give retroactive mitigation credit unless, in accordance with the regulations, the permittee can demonstrate that measures since 2005 will actually mitigate the impact of the proposed increased withdrawal being sought.
- **Revise WMA permit seasonal limits on non-essential outdoor water use so that they do not conflict with the revised Drought Management Plan and meet EEA's recommended actions to reduce outdoor water use at each drought stage.** Include effective seasonal outdoor watering limits in permits to protect freshwater resources and their ecology.
- **Enforce WMA permit limits and conditions to create an equitable and level playing field for all permittees of this shared natural resource and to protect the environment.**
- **Assign additional staff to implement this program.** The 2014 regulatory changes have created a steep learning curve, both for program staff and permittees, and the agency has struggled to issue timely permits.
- **Make private wells, of which there are over 400,000 in the state, and especially irrigation wells, subject to the same outdoor water use restrictions as those for residents on public water supplies.**



## DELEGATION OF WATER POLLUTION CONTROL PROGRAMS

This year, the administration and MassDEP again sought to transfer water pollution control permitting (the National Pollutant Discharge Elimination System, or NPDES, program) from the U.S. EPA to the state. Under this program EPA and MassDEP now jointly issue wastewater, industrial, and stormwater permits, but EPA has “primacy:” it drafts the permits and uses its considerable expertise in permit requirements. Previous administrations have studied transferring, or delegating, this responsibility to the state, and decided against it, as the cost was high and the benefits unclear. The Governor’s bill for NPDES delegation was sent to study in 2016 and again in this legislative session, in part due to concerns about high

program costs with no obvious environmental benefit.

The Governor’s proposal to fund the NPDES program through annual budget appropriations would leave the program vulnerable to future budget cuts. Given the budget cuts to MassDEP over the past decade, reliance on an annual appropriation to fund this important program would be extremely risky. In a 2013 study, the agency estimated that the program would cost Massachusetts approximately \$10M annually. The administration proposed to dedicate just \$4.7M in new funding for the program. The federal government currently provides the NPDES program at no cost to Massachusetts,

courtesy of all U.S. taxpayers. Despite delegation's significant price tag, anticipated drain on MassDEP's already thin resources, its lack of NPDES permitting expertise, and no clearly articulated environmental benefit, the administration introduced the same proposal in 2017 without responding to concerns raised by legislators and environmentalists.

## RECOMMENDATIONS

- **Defer NPDES delegation until MassDEP is able to articulate a clear environmental benefit, address our concerns, and the agency has rebuilt its weakened water programs. This requires investment in water quality monitoring and assessment, water science and research capability, and restoration of agency compliance and enforcement staff.**
- **Support increasing MassDEP's annual operating budget, in particular backfilling the hundreds of staff positions the agency has lost over the past decade.**



## WATER CONSERVATION STANDARDS UPDATE



The Massachusetts Water Conservation Standards “set statewide goals for water conservation and water use efficiency and provide guidance on effective conservation measures.” The Standards are incorporated into permits and policies, and also provide a critical opportunity for public education about the importance of water conservation. They continue to play a vital role in safeguarding our water future.

The Water Resources Commission (WRC) is now finalizing updates to the Standards. We appreciate the extensive efforts of the WRC and particularly, DCR's Office of Water Resources' staff, who provided many opportunities for stakeholder input in this process.

These updates include several positive changes, including the addition of information regarding

anticipated climate change impacts, recommendations for increased billing frequency to promote water conservation, and information on water savings in agriculture. The Standards could go further, however, to promote improved price signals for water conservation and to encourage more consistent communication between water suppliers and local officials.

## RECOMMENDATION

**The WRC should adopt the updated Water Conservation Standards as soon as possible. The WRC should also embark on outreach efforts to inform municipalities, residents, businesses and institutions about the revised Standards. Effective communication about the changes and water conservation resources will be key to the successful implementation of these Standards.**





## CULVERT AND DAM REPAIRS, REPLACEMENTS AND REMOVALS

The Department of Fish and Game's Division of Ecological Restoration (DER) oversees dam removals, culvert replacements and river restorations. In the past eight years DER has completed over 80 projects. In 2017 alone, DER worked with more than 30 partners to remove seven dams, opening up 40 miles of river, restoring 30 acres of wetlands and reconnecting more than 900 acres of fish spawning habitat. DER also provided technical support to municipalities, watershed groups and landowners in over 193 communities. DER also launched a new Culvert Replacement Municipal Assistance Grant Program, awarding \$905,000 to 13 towns for replacement of undersized culverts.

This work benefits both the environment and the economy in very tangible ways. Every dollar invested in DER projects is matched on average by five non-state dollars. Every \$1 million spent on restoration generates, on average, a 75% return on investment and creates, or maintains, 12.5 jobs. The ecosystem services for water quality improvement, resiliency to climate change,

flood damage reduction, and fish passage restoration also generate significant economic benefits. These include increased property values, enhanced tourism opportunities, and improvement of commercial and recreational fisheries. DER is currently working on 30 dam removal projects, but with one or two more staff they could be removing upwards of 60 hazardous dams. To put this number in perspective, according to a 2016 Army Corps of Engineers report, Massachusetts has 333 high hazard dams that are waiting to be removed or repaired. This past year, DER received over 20 requests for assistance with culvert replacements but due to staffing constraints, they could only assist with two projects. The high demand for DER's services cannot be met with their current staff levels.

### RECOMMENDATION

**Increase the operating budget significantly for this small, highly impactful agency to enable DER to expand its role in providing resiliency and adaptation to climate change.**



# Environmental Justice



**E**nvironmental justice (EJ) is based on the principle that all people have a right to be protected from environmental pollution and to live in and enjoy a clean and healthful environment. Last year's report card gave EEA a mixed review for environmental justice, noting the update of the EJ policy as a positive step while noting the failure to implement Executive Order 552 on environmental justice that was issued under the previous administration. Basic steps to implement this Executive Order include forming an EJ advisory council, creating an interagency working group on environmental justice and hiring the Director of Environmental Justice position, which has now been vacant for two years.

To their credit, EEA has adopted some changes to scoring of grant programs to prioritize EJ communities. EEA has also attested that MassDEP is targeting enforcement actions on corporate offenders located in overburdened communities. While this is helpful, it is notable that the need to prioritize enforcement is itself a symptom of chronic underfunding and reductions in staffing.

Finally, although EEA has not filled the Director of EJ, agency staff state that a portion of a FY2019 budget line item on climate adaptation is intended to fund that role.

Despite this, what is most notable is the administration's inaction. EEA has not initiated communication with environmental justice groups about proposed policies, budgetary items or other matters and is relying entirely on a single future staff person to do so. Meanwhile, **in the past year, numerous studies have confirmed environmental injustices in Massachusetts and the United States. For example, Boston University published research that demonstrates air pollution inequality in the Commonwealth is getting worse.<sup>1</sup>** Even as our air gets cleaner on the whole, low-income communities and communities of color are left further behind. Residents who live adjacent to power plants, incinerators or highways continue to suffer disproportionately<sup>2</sup> and racial disparity in health outcomes significantly exceeds national averages.<sup>3</sup> And even as Massachusetts leads the country connecting residents to energy efficiency



programs, a recent Applied Economics Clinic report shows that lower-income communities are receiving lower efficiency savings.<sup>4</sup>

The environmental bond bill, introduced in March, was a clear opportunity for the administration to prioritize and publicly signal support for environmental justice action. The bond bill did codify segments of another Executive Order on climate adaptation (EO 562) as well as include language throughout that indicates that spending for projects that focus on climate adaptation and resiliency should be prioritized. The amended bill now includes H. 2913 (An Act relative to environmental justice and toxics reduction in the Commonwealth), which would codify the Executive Order on Environmental Justice (EO 552), and incorporates requirements that Municipal Vulnerability and Preparedness Plans include vulnerability assessment of EJ populations. However, there is no associated statewide investment to fund implementation of environmental justice initiatives. Coordinating implementation of the two executive orders, which both require interagency action and will serve historically underserved communities, may actually save time and require fewer resources from EEA and other Secretariats.

As administrative action on EJ has stalled, the Department of Public Utilities has approved massive rate hikes and new fees on solar—broadly opposed by EJ organizations—that are likely to harm communities of modest means and discourage the adoption of clean energy that reduces pollution. In one of the most appalling examples of cultural incompetence, the Energy Facilities Siting Board presided over a hearing on a project

in Chelsea and East Boston and allowed for the project proponent to conduct translation one way, Spanish to English only, despite repeated requests from a local environmental justice organization for a bilingual hearing. EEA has also continued to defend the construction of a gas power plant in Brockton and just approved the expansion of an ash landfill in Saugus, which borders Lynn and Revere.

The administration has continually failed to prioritize protecting vulnerable communities from pollution and failed to implement explicit policy commitments. This, combined with widespread staff reductions, has resulted in total stasis on equity initiatives. It is time to revive environmental justice and advance social, racial, and economic equity in our state's environmental programs and capital investments.

## RECOMMENDATIONS

- **Make a public commitment to promoting environmental justice and initiate implementation of EO 552 in 2018.**
- **Appoint a new Director of Environmental Justice to the position that has been vacant for two years.**
- **Ensure that all state secretariats have an Environmental Justice Coordinator in place, as called for by the Executive Order, beginning with EEA agencies.**
- **Appoint members to the Governor's Environmental Justice Advisory Council immediately, and convene the Interagency Working Group on Environmental Justice.**
- **Create a plan and timeline for implementing all other provisions of EO 552.**

1 <https://www.bu.edu/sph/2017/11/09/air-pollution-exposure-inequality-persists-in-massachusetts>

2 <https://www.usnews.com/news/healthiest-communities/articles/2018-04-10/better-air-means-better-health-in-somerville-massachusetts>

3 <https://www.usnews.com/news/healthiest-communities/massachusetts/suffolk-county#equity>

4 <https://static1.squarespace.com/static/5936d98f6a4963bcd1ed94d3/t/5abd0fa42b6a28e550f1a bb/1522339749389/MA+Access+to+EE+Initial+Report+27Mar2018+update.pdf>





# Preserving Public Rights in Public Trust Lands



**T**he Commonwealth's primary tool for protection and promotion of public use of its tidelands and other waterways is Massachusetts General Law Chapter 91, the waterways licensing program and the implementing Waterways Regulations. Through Chapter 91, the Commonwealth preserves and protects the rights of the public in those tidelands and waterways, and guarantees that private uses of tidelands and waterways serve a proper public purpose. The Division of Wetlands and Waterways within MassDEP administers the Chapter 91 Waterways Program.

In addition, Commonwealth communities have the option to prepare municipal harbor plans (MHPs), which establish a community's objectives, standards and policies for guiding public and private

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**Commonwealth communities have the option to prepare municipal harbor plans (MHPs), which establish a community's objectives, standards and policies for guiding public and private use of land and water within jurisdiction of the Public Waterfront Act (Chapter 91).**

use of land and water within jurisdiction of the Public Waterfront Act (Chapter 91). Communities can use municipal harbor plans to customize the Chapter 91 regulatory program in ways that allow

some development flexibility while honoring the spirit of the program of ensuring robust public access and use. Municipal harbor plans must be approved by the Secretary of EEA.

**The Administration must shift its stance toward its public trust obligations. Once the waterfront is developed with buildings for private office or residential uses, public rights to access and use the Commonwealth's foreshore that have been secured for centuries could be lost.**

MassDEP and EEA protection of public rights in tidelands over time has been poor with a few notable exceptions. Numerous property owners are in noncompliance with the public access and benefit terms of their Chapter 91 Waterways licenses. The Waterways Program in MassDEP is running on almost a skeleton crew. Recently, EEA has approved two MHPs in Boston that are fundamentally at odds with the policies of prior administrations and fail to meet the Commonwealth's public trust obligations.

To their credit, MassDEP and EEA have held the line on several important tidelands policies

including preserving the "open to sky" standard for open space requirements, prohibition of facilities of private tenancy over flowed tidelands, and preventing owners who have failed to maintain their wharfs and piers from gaining any regulatory advantages. Despite staffing challenges, MassDEP has also issued at least one enforcement action against a noncompliant Waterways licensee in the past year and has begun requesting updated management plans for several sites.

The Administration must shift its stance toward its public trust obligations. Once the waterfront is developed with buildings for private office or residential uses, public rights to access and use the Commonwealth's foreshore that have been secured for centuries could be lost.

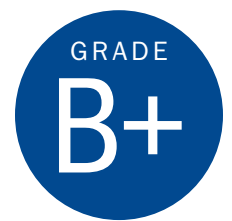
## RECOMMENDATIONS

- **Dedicate additional resources to the Division of Wetlands and Waterways in MassDEP to ensure ongoing compliance with Chapter 91 Waterways licenses.**
- **Develop an electronic tool that allows the public to access Chapter 91 Waterways license and management plan information for sites within Chapter 91 jurisdiction.**
- **Revise Municipal Harbor Planning Regulations at 301 CMR 23 to increase the consistency, transparency, and accountability of the municipal harbor planning process and to provide judicial review of EEA decisions.**





# Land Conservation



**C**onserving land is a mainstay of environmental protection. There is nothing that can replace permanent protection of important wildlife habitat, buffers around our drinking water supplies, agricultural soils and healthy forests. **The benefits of land protection are multiple. Protected natural areas support a \$20 billion tourist economy, healthy forests absorb CO<sub>2</sub> and trees prevent erosion, wetlands filter water, coastal marshes absorb storm surges, and clean water supports our fishing industry.** These “ecosystem services” are often not accounted for when we consider the costs of land and water protection but they are real and increasingly valuable as we combat climate change and move to adapt to climate change impacts.

Massachusetts is fortunate that in addition to state investments, we have a thriving and long-established land trust community which often

partners with the state to acquire and steward important lands. Often state investments can significantly leverage private resources and vice versa, increasing the dollars we can devote to protecting special places throughout the state.

In 2017, the administration protected 11,860 acres, somewhat less than the average for the prior two years of 13,000+ acres. The Commonwealth expended \$45 million including conservation tax credits of \$2 million and Massachusetts Water Resources funding.

An innovative approach to public lands stewardship is the Mohawk Trails Woodland Partnership that is a partnership between EEA, municipalities in northwestern Massachusetts, the U.S. Forest Service, regional planning agencies, and the Franklin Land Trust. This initiative’s purpose is to (1) increase economic development related



to forestry and natural resource based tourism; (2) support forest conservation and sustainable forestry practices on private land; and (3) improve the fiscal stability of the region's 21 towns. The partners have met with 20 of the 21 towns to assess interest in proceeding with a special designation for the region that would unlock state and federal funding to support the Partnership's goals.

While not strictly land protection, the state has also been working to make it easier for municipalities to access funding for trails in a new effort called **MassTrails**. The program's goals are to develop a vision for trails in the Commonwealth and improve agency coordination, policies and programs to support that vision. This will include identifying opportunities to better partner with cities and towns and to use state resources to maximize the impact of federal funds that are available to support trails.

Multi-use trails contribute to healthy recreation, often offer access to greenspace, can provide links between fragmented habitats and have been shown to contribute to economic revitalization.

The Administration has increased funding for trails from historical levels of \$1.2 million to \$1.8 million last year and has committed to expanded funding of \$3.2 million for the next two years.

## RECOMMENDATIONS

- **Commit to investing at least \$50 million annually to state land protection programs to meet conservation goals, protect working farms and forests, and increase park access in urban areas.**
- **Support increasing the state conservation land tax credit from \$2 million annually to \$10 million annually. There currently is a waiting period for this popular program.**
- **Support increased funding for the state match for the Community Preservation Act. This local option tool which supports open space and outdoor recreation, historic preservation, and affordable housing has now been adopted by 173 of Massachusetts' 351 communities.**
- **Support legislation updating our outdated zoning laws to prevent sprawl, give communities the tools they need to direct growth, and assure predictability for developers.**



# Reducing the Use of Toxic Chemicals



**T**he Toxics Use Reduction Act (TURA), passed in 1989, is Massachusetts' greatest opportunity in existing law for reducing toxic chemical use and exposure and for a third year in a row, the Baker administration has underutilized this valuable resource. The TURA program requires that Massachusetts companies that use large quantities of certain toxic chemicals reduce their use to the extent possible and measure and report the results so that the success of the program can be tracked and shared.

In 2017, base-line maintenance of the program continued, with companies using chemicals that were listed under previous administrations continuing to report their chemical use and make TUR plans. In 2017 the program also took steps towards adding a group of chemicals known as

C1-C4 Hydrocarbons to the TURA list, and initiated a survey of companies to gather data about the use of nanotechnology in the Commonwealth. These were both positive actions, though small compared to the possibilities of TURA.

Under TURA, chemicals with significant safety and public health impacts can be designated as "High Hazard Substances (HHS)" and this provision has been virtually ignored by the Baker administration. When a chemical receives an HHS designation, it brings additional companies that use that chemical into the program, leading to reduced exposure and greater disease prevention, and this often can spur the development of safer alternatives. While in 2014, four new chemicals were listed as HHS, in the three years of the Baker administration only one has been designated, and that was merely

a rubber stamp of a chemical that had already been fully evaluated in 2014. **In 2017 no designations of HHS were even discussed.**

Furthermore, the program still continues to be hampered by the fact that fees paid by users of “TURA listed” toxic chemicals have not been raised since its inception in 1991, despite a statutorily required annual increase. Without funding keeping pace with inflation and rising costs, the program has experienced significant cutbacks in staffing, preventing the full realization of health benefits and cost savings for Massachusetts industries that could be achieved.

In addition, the Massachusetts Mercury Management Act, passed in 2006 and revised in 2014, requires (among other provisions) manufacturers of mercury-added light bulbs to pay a fee to fund light bulb recycling programs. The fee from the 2006 law was never levied. In 2017, three years after the revised law was passed, MassDEP began working on a draft fee structure but did not complete the task, thus the fee has still not be levied. Meanwhile, mercury-added light bulbs continue to be incinerated and landfilled.

Finally, there are numerous opportunities for the Baker administration to support proactive health protections through current legislation, most notably S.1175/H.1245 to ban toxic flame retardants in children’s products and household furniture and H.439/S.1191 to require manufacturer disclosure of toxic chemicals in children’s products. The administration has not demonstrated support for either bill.

## RECOMMENDATIONS

- **Take advantage of the Toxics Use Reduction Act by considering at least five new chemicals for HHS designation and modernize the fee structure in keeping with state law.**
- **Implement the Mercury Management Act.**
- **Pass new laws that require the phase out and replacement of known toxic chemicals (such as flame retardants) with safer alternatives and require product disclosure to identify unknown hazards.**





# Solid Waste

**T**he past year was mixed for Massachusetts' solid waste system. Where there was targeted investments of time and money by MassDEP, diversion increased. Where there was a continued pattern of disinvestment and a lack of leadership, the system continued to stagnate. And where there was a disregard for the danger presented by dangerous, antiquated waste facilities, surrounding communities continued to suffer.

It was also a tumultuous year. Our solid waste system faced some emerging challenges—collapse of the local market for glass recycling, China's refusal to accept our country's generally contaminated mixed paper and plastic recyclables, and a continuing increase in building with its corresponding increase for disposal of construction and demolition materials.

The Commonwealth still does not have programs in place to achieve most of the modest goals for reductions, recycling, and diversion set forth in MassDEP's 2010–2020 Solid Waste Master Plan. Due to staff losses, MassDEP cannot compile or track data, though in some cases consultants have been retained to fill in on urgent projects. MassDEP cannot enforce existing waste regulations or adequately monitor reported emissions from solid waste facilities. And there is a lack of leadership, funding, and staff to institute the well-proven, truly transformative zero waste programs like pay-as-you-throw, universal composting, and universal recycling for businesses and institutions. **With a commitment from the administration and a very small investment we could make huge strides in managing our waste. Without that commitment and investment, little is going to change.**



**2010–2020 Solid Waste Master Plan Goals**

The goal of the Massachusetts 2010–2020 Solid Waste Master Plan, “A Pathway to Zero Waste,” was to put the Commonwealth on the path to “higher reuse and recycling rates and reduced disposal.” More specifically, the SWMP goals include:

- Reducing municipal solid waste (MSW) disposal in landfills and incinerators by 30 percent by 2020, (from 6.55 million tons of disposal in

2008 to 4.55 million tons by the end of 2020)

- Reducing MSW disposal in landfills and incinerators by 80 percent by 2050 (from 6.55 million tons of disposal in 2008 to 1.31 million tons), and “virtually eliminate products containing toxic chemicals from our disposal facilities.”
- Increasing the recycling rate for construction and demolition materials (C&D), excluding asphalt, brick and concrete, to 50 percent by 2020.



## TRACKING OF SOLID WASTE METRICS

Due to staff shortages, MassDEP stopped tracking many of the metrics necessary to evaluate solid waste diversion in 2013, and other numbers were never compiled. For instance, how much waste is disposed or the amount of materials recycled or composted by the business and institutional sector is unknown. There is no data about the industrial, commercial or institutional sectors by region or municipality at all. What that means is when the City of Boston, or any city or town, drafts a zero waste plan, they may have a handle on their residential waste, but they have no idea how much waste the businesses, colleges or government are generating, making it impossible, or at least very difficult, to generate that plan. This is further complicated by the fact that most municipalities do not pick up multi-family buildings as part of their residential waste.

As a result, for places like Worcester or Lawrence, even the residential numbers are incomplete because they do not include apartments with more than a few units.

**MassDEP has stopped tracking key metrics due to staff shortages. There is no data about the industrial, commercial, or institutional sectors by region or municipality.**

MassDEP has collected data for a few key programs over the last year, however. While presented in a bare bones fashion, the Massachusetts Organics Progress Report, released last December, compiles diversion, infrastructure, future capacity, and waste ban compliance information on the Commercial Organics Waste Ban. MassDEP retained consultants to produce a review of the economic impact of the Commercial Organics Waste Ban, published in February 2017, and the 2016 Construction and Demolition Debris Market Study published in April 2017, characterized the quantities and composition of C&D materials, the recycling capacity of existing infrastructure, and

barriers to future diversion. Finally, MassDEP has also retained a consultant to conduct a capacity analysis for the region. This capacity analysis is significant not only because it should generate important information to guide future investment in infrastructure, but also because it marks a much needed shift from analyzing disposal capacity to analyzing materials management capacity. In other words, MassDEP is not just tallying how many cubic yards are left in our landfills, but also the capacity for processing each type of material, and how to encourage the growth of composting, C&D processing, recycling or other capacity.

Unfortunately, using consultants to pinch hit, while helpful in the short term, has left a lot unknown, and does not result in consistent and reliable data.

### RECOMMENDATION

**MassDEP is beginning work on the 2020–2030 Solid Waste Master Plan. One of the goals of that planning process should be determining which metrics are needed and requiring they be compiled by MassDEP each year. In the meantime, MassDEP should hire more staff so it can dedicate the necessary FTEs to solid waste metrics.**



## DECREASING MSW DISPOSAL IN LANDFILLS AND INCINERATORS



The Solid Waste Master Plan's primary goal is to reduce disposal in landfills and incinerators by 30 percent by 2020. The good news is that if you exclude Construction and Demolition materials, municipal solid waste actually decreased by about 70,000 tons from 2015 to 2016. Given that the economy continued to improve over this period, MassDEP agrees that that is largely due to increased diversion of food waste attributable to the success of the Commercial Organics Ban (see page 41). Unfortunately, not only did C&D disposal increase by about 170,000 tons, but there is no evidence of a marked reduction or diversion of any other waste streams. This remains unacceptable and unnecessary.

### RECOMMENDATIONS

- **Adopt zero waste programs like mandatory universal recycling, pay-as-you-throw and additional waste bans in Massachusetts.**
- **Enforce existing waste bans.**





## INCREASE CONSTRUCTION AND DEMOLITION RECYCLING

**T**he Solid Waste Master Plan's goal for C&D waste is to increase the recycling rate to 50 percent, or increase recycled tonnage from 200,000 to 600,000 tons total, by 2020. This excludes asphalt, brick and concrete recycling.

While there has been some increase in recycling—about 100,000 tons more is recycled now than was in 2007—the 2015 numbers show that only about 32% of non-asphalt, brick, and concrete C&D is recycled.

As reported in the past, the numbers for C&D in Massachusetts are a mess. The only numbers we have are for 2015, and they do not measure exactly the same categories as the numbers used in the SWMP. Furthermore, while staff at the Bureau of Waste Management of MassDEP continues to encourage reuse, better on-site source

separation, market development, and enforcement at processing facilities, there is no reason to believe those efforts will achieve a 50% recycling rate by the end of 2020.

Furthermore, much C&D ends up as daily cover at landfills or burned in incinerators. While not defined as disposal under current regulations, this is hardly the highest and best uses of these materials. Prohibiting this kind of C&D diversion to landfills and incinerators would go a long way towards encouraging robust, consistent recycling of these materials.

### RECOMMENDATION

**Compile the C&D numbers for 2013–2017.**

**Assuming 2015 numbers as reported by consultant are accurate, increase waste ban enforcement and prohibit diversion of C&D to incinerators or landfills for use as daily cover.**



## WASTE BANS

**M**assDEP estimates that 40% of the municipal solid waste (MSW) disposed of in landfill and incinerators are waste ban items, excluding food waste. As was reported last year, MassDEP still has not hired dedicated waste ban inspectors to increase the diversion of these readily recyclable materials. As a result, waste ban enforcement remains stagnant, despite the best efforts of MassDEP staff. This is also borne out by the disposal numbers, which have increased over all. Considering the consistently robust market for cardboard, a material that comprises about a quarter of our waste stream, but is largely going unrecycled in Massachusetts, it is an understatement to say that there is room for improvement.

Meanwhile, the Commercial Food Waste Ban, a program that has received modest investment and staff by the Commonwealth, is an unmitigated success to date. MassDEP targeted food waste and other organics in part because it was the largest segment of the municipal solid waste stream. Food and other organics comprise over 25% of the total waste stream, well over a million tons a year of the approximately 5.6 million tons of waste Massachusetts disposed of in 2016.

**MassDEP estimates that 40% of the Municipal Solid Waste (MSW) disposed of in landfills and incinerators are waste ban items, or materials that are prohibited from disposal because they are readily recyclable or extremely toxic.**

The ban requires any entity disposing of at least one ton of organic material per week to either donate or re-purpose any usable food. The remaining food would then be sent to an anaerobic digestion (AD) facility or to composting and animal feed operations.

MassDEP staff and their partners at Center for EcoTechnology (CET) worked tirelessly to create clear guidelines and best practices, educate stakeholders and promote the program. In 2017, MassDEP released an economic impact analysis on the commercial food waste ban<sup>5</sup> which documented that **the commercial food waste ban has created more than 900 new jobs, and \$175 million in economic activity across the Commonwealth.**



**COMMERCIAL  
FOOD WASTE  
BAN**



**ENFORCEMENT  
OF WASTE BANS**

<sup>5</sup> Massachusetts Commercial Food Waste Ban Economic Impact Analysis, submitted to MassDEP by ICF, 100 Cambridgepark Drive, Suite 501, Cambridge, MA 02140, December 2016. <http://www.mass.gov/eea/docs/dep/recycle/priorities/orgecon-study.pdf>

<sup>6</sup> <https://www.triplepundit.com/2014/08/massachusetts-food-waste-ban-goes-effect-october/>

The actual diversion is even more impressive. **The total reported diversion of food waste in 2016 was 260,000 tons—around 150,000 more tons than was being diverted in 2014.** This number includes food waste that is composted (166,000 tons), processed in an anaerobic digester (57,000 tons), donated (22,000 tons), fed to animals (4,000), and processed with wastewater (13,000).

The proliferation of organics infrastructure is key to the success of this effort. In 2014 there were about 30 composting and AD operations with the capacity to accept about 150,000 tons of organic material a year.<sup>6</sup> Currently there are more than 45 sites, with compost capacity for 150,000 tons a year and AD capacity for 315,000 tons a year.

Even more importantly, there is additional capacity under development for about 570,000 more tons a year.

## RECOMMENDATIONS

- **Expand the food waste ban to institutions that generate more than half a ton a week.**
- **Limit how the food can be processed. If it is mixed with sewer sludge during the AD process, the compost produced is no longer a safe or sustainable soil additive, rendering this effort unsustainable.**
- **Add textiles and mattresses to the waste bans.**
- **Hire six full time, dedicated waste ban inspectors.**



## PROTECTING THE ENVIRONMENT FROM DANGEROUS WASTE FACILITIES

In April, MassDEP allowed Wheelabrator Saugus to expand its ash landfill to allow dumping of over 500,000 tons of toxic ash there over the next five to ten years.

MassDEP has a long history of sanctioning the operation and expansion of the Saugus landfill. Back in 1988, the agency declared Rumney Marsh (including the landfill) an Area of Critical Environmental Concern (ACEC) and entered into an agreement with Wheelabrator whereby the landfill would close in 1996. But rather than holding Wheelabrator to the original terms of the agreement, MassDEP has allowed the landfill to not only remain open, but to continuously add more capacity so it can keep receiving ash from the adjacent incinerator.

Allowing the Saugus landfill to continue to operate—and further expand—adversely impacts Rumney Marsh. With the unlined landfill resting in water in the middle of the marsh, there is nothing to keep the poisonous dioxin and heavy metals in the incinerator ash contained. Furthermore, bordered by tidal rivers, the landfill is extremely vulnerable to sea level rise, coastal flooding, and severe storm events. This facility would never be allowed to be sited on the banks of two rivers in an ACEC today. We also have no way of knowing just how much toxic pollution is leaching from the landfill because the facility lacks a groundwater monitoring and reporting system—something required at every other landfill operating in Massachusetts and required under federal law. That Wheelabrator



has been allowed to skirt those legal requirements is just another failing of MassDEP in this landfill's long, polluting saga.

The landfill's impact on the local environment alone should have been enough for the Commonwealth to deny Wheelabrator's proposal to expand. However, as discussed above, if MassDEP implemented new zero waste programs and enforced those already in place, this landfill would be unnecessary. Almost 80 percent of the materials burned at the incinerator (according to the company's own reporting) are recyclable or compostable. That means that more than 80,000 tons of ash every year shouldn't be created in the first place.

## RECOMMENDATION

**MassDEP should require the Saugus ash landfill to halt operations as soon as the working face currently being filled reaches capacity this year. After that section is capped, the landfill should be closed permanently. Groundwater monitoring should also be conducted to determine the extent of contamination from the landfill in the surrounding environment.**

## PHOTO CREDITS

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**For more information about the  
organizations that contributed to this report, please go to:**

**Charles River Watershed Association**

<http://www.crwat.org>

**Clean Water Action**

<http://www.cleanwateraction.org/states/massachusetts>

**Conservation Law Foundation**

<http://www.clf.org>

**Environment Massachusetts**

<http://www.environmentmassachusetts.org>

**Massachusetts Rivers Alliance**

<http://massriversalliance.org>

**Massachusetts Sierra Club**

<http://www.sierraclub.org/massachusetts>

**Environmental League of Massachusetts**

<https://www.environmentalleague.org>