

This presentation premiered at WaterSmart Innovations

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USING COMMUNITY-BASED SOCIAL MARKETING TO REDUCE LAWN WATERING IN MASSACHUSETTS

Michelle Craddock, Mass. Division of Ecological Restoration
WaterSmart Innovations 10/3/19

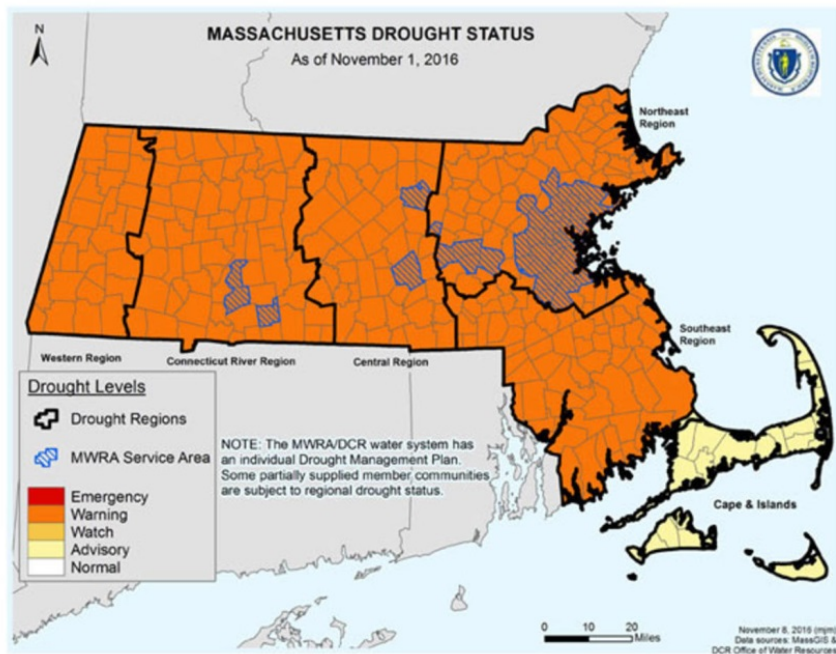
Presentation Overview

- Project background
- Community-Based Social Marketing
- 2016 Foundational research
- 2017 & 2018 Pilot results
- 2019 Pilot and next steps

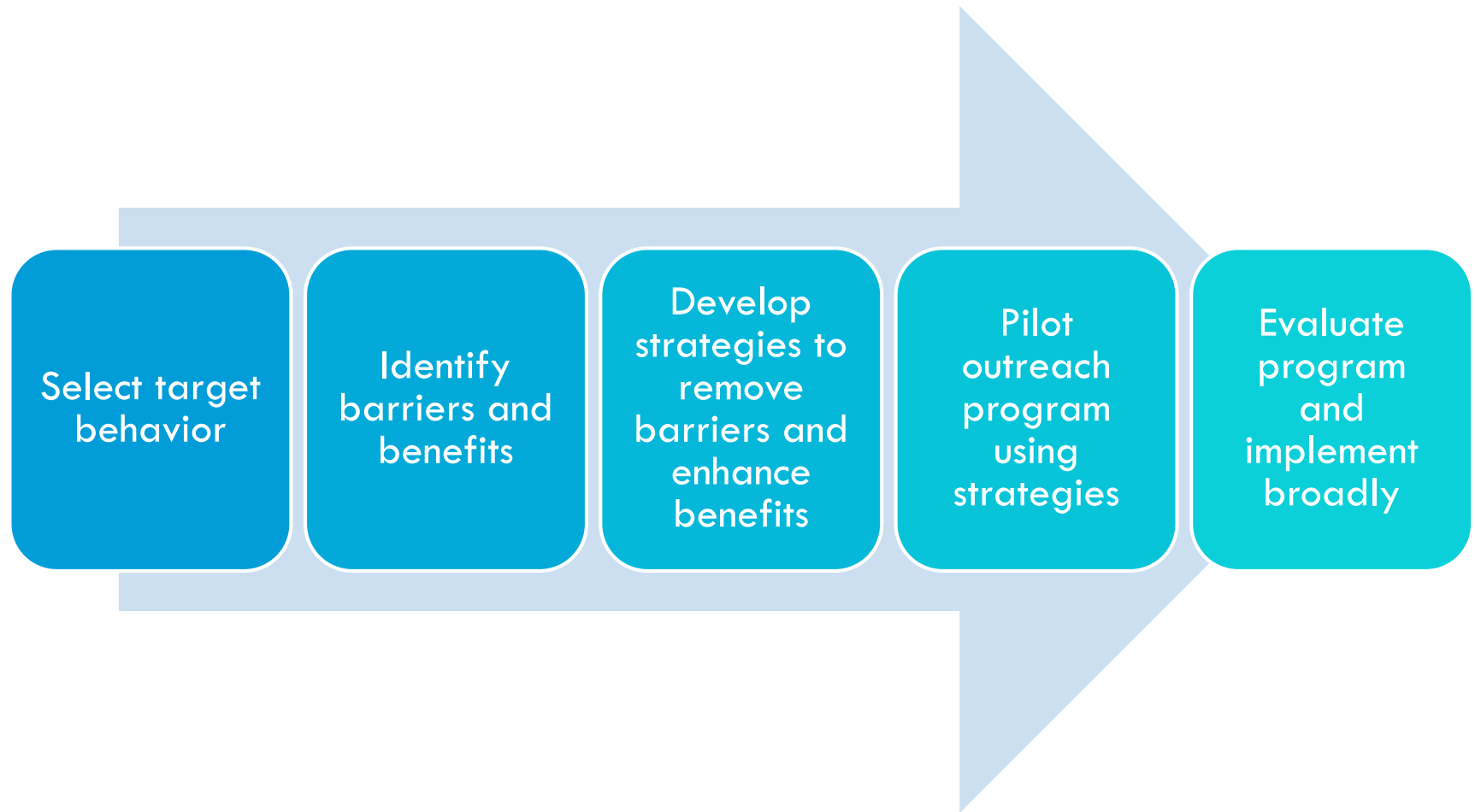


Project Background

MA is relatively water rich but experiences droughts and dry periods in the summer when water use peaks

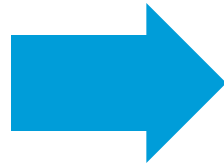


Community-Based Social Marketing



Select Target Behavior

Created list of 31
summer water use
behaviors and impact of
adopting
(gallons/week savings)



Mail survey of 300
residents to estimate
penetration, probability
and applicability

Penetration – how many residents have already adopted behavior

Probability – how likely residents are to adopt behavior

Applicability – presence or absence of feature (pool, irrigation)

Select Target Behavior

IPPA Table without Data Sources

Behaviors	Impact (gal/week)	Penetration (0-100%)	Probability (0-10)	Applicability (0-100%)	Weight
Outdoor-Lawn Watering					
Stop lawn watering in summer	804	52%	3.34	99%	1276
Eliminate lawn watering during rainy weeks	643	88%	2.92	99%	223
Install weather-sensitive irrigation controller switches (WSICS) or other weather sensing/water sensing devices yourself	241	16%	0.99	17%	34
Install WSICS or other weather sensing/water sensing devices expert	241	16%	1.04	17%	36
Water lawn in the early morning	112	43%	3.5	99%	221
Properly position sprinklers/hoses to only water lawn	200	51%	4.86	72%	343
Water lawn only when stressed	660	55%	3.19	99%	938
Repair irrigation system water leaks-low	120	12%	4.72	72%	359
Repair irrigation system water leaks-high	1000	12%	4.72	33%	1371
Outdoor-Lawn Planting					
Replace some of lawn with flowers, shrubs, or ground cover yourself	240	14%	2.16	99%	441
Replace some of lawn with flowers, shrubs, or ground cover with expert	240	14%	0.98	99%	200
Install drought resistant grass yourself	200	19%	1.47	99%	236
Install drought resistant grass on with expert	200	19%	1.25	99%	200
Outdoor-Car					
Wash car at car wash	60	55%	3.06	100%	83
Outdoor-Pool					
Use a pool cover	161	7%	1.93	20%	58
Fix pool leaks	392	7%	8.37	20%	609
Winterize pool without draining	1125	99%	5	20%	11

$$\text{Weight} = \text{Impact} * (1 - \text{Penetration}) * \text{Probability} * \text{Applicability}$$

Identify Barriers and Benefits

Perceived Barriers

- Lawn will die if not watered
- Eliminating lawn watering would not save much water

Benefits

- Help community reduce water use
- Personal water savings
- Personal financial savings

Develop Strategies

Feedback strategy

- Mailed feedback sheet comparing summer water use to neighbors
- Educational flyer correcting misconceptions about lawn watering

Commitment Strategy

- Door-to-door delivery of educational flyer
- Request commitment to reduce lawn watering (1"/week)

2017 Pilot Project

- Tested Feedback and Commitment Campaign vs. Control (no campaign) group
 - ▣ Piloted in Wenham and Middleton
 - ▣ 125 households/strategy (375 total/town)



Educational Materials

Introducing *Healthy Lawn, Happy Summer*

Dear Resident,

Within the next few weeks, you will receive an envelope with materials on the town's new *Healthy Lawn, Happy Summer* campaign. It will include tips on how to conserve water in the summer months and information on how your water use compares to your neighbors.

Healthy Lawn, Happy Summer encourages those who live in Wenham to save water for themselves and their communities while keeping their lawns healthy all summer.

Be on the lookout for the envelope. Together, we can make a big difference.

Sincerely,

Erik G Mansfield, Superintendent
Wenham Water Department

emansfield@wenhamma.gov
(978) 468-5520 x6



WATER DEPARTMENT
91 GRAPEVINE RD.
WENHAM, MA 01984

Erik G Mansfield
Superintendent

Telephone: (978) 468-5520 x6
Fax: (978) 468-1009

Dear Resident,

As summer approaches, the Town of Wenham is working with the Massachusetts Division of Ecological Restoration to support our residents in saving water and money while keeping their lawns healthy. As a community, we have a limited amount of water, even in years when we receive rain, and we need to conserve that resource to make sure there is enough for all. By watering more efficiently, or not at all, residents can still maintain a healthy lawn while conserving water.

We know that our residents are already taking action to save water. In a 2016 survey of households here in Wenham, more than half of residents reported watering their lawn in the summer minimally or not at all. However, our community still has room to improve in saving water during the summer. We developed *Healthy Lawn, Happy Summer* to help residents keep their lawns healthy in summer while saving water at the same time. Our materials are included with this cover letter.

If you have any questions, please call (978) 468-5520 x6 or email emansfield@wenhamma.gov.
Sincerely,

Erik G Mansfield
Superintendent, Wenham Water Department

HEALTHY **LAWN** HAPPY SUMMER

Each of us makes a big impact in Wenham.

Reduce Lawn Watering

Eliminating or reducing summer lawn watering makes a big difference. Massachusetts households that water their lawns in the summer use up to 800 gallons a week. That's like running your shower for 5 hours!

The fact is, a *Wenham lawn doesn't need much water to stay healthy*. Overwatering your lawn can cause shallow roots and make it susceptible to pests, disease, and drought.

LAWN WATERING

SHOWERING



800 Gallons

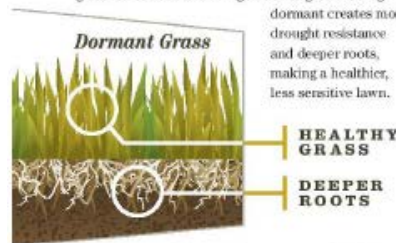


5 Hours!

Keep It Natural

We get an average of 4 inches of rain per summer month, enough for healthy summer lawns. *Lawns need, at most, an inch of water a week to stay healthy.* Sometimes healthy grass goes dormant. Dormant grass is not dead and will go back to green. Going

dormant creates more drought resistance and deeper roots, making a healthier, less sensitive lawn.



More than half of Wenham homes already let their lawn go dormant each summer. *Join them by letting your lawn be healthy and natural while saving water, money, and time.*

Save Water & Keep Your Lawn Healthy All Summer

During a Wenham summer, a healthy lawn will likely not need irrigation. However, if you must water your lawn, *follow the tips below* to water without waste.

- 1 Let grass grow long to stay healthy.
- 2 Water early in the morning to avoid water loss.
- 3 Water infrequently to encourage deep roots.
- 4 Water by hand, as automatic irrigation uses twice as much water.
- 5 If you have a lawn care crew, communicate to them that saving water is a priority and share this flyer.



Save water and money
*for yourself & your community by watering your lawn wisely or not at all:
no more than one inch per week of rain and watering.*

www.wenhamma.gov/waterconservation

Feedback Materials

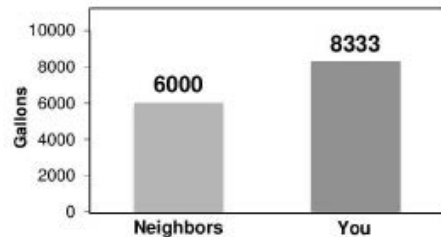
Join Wenham Neighbors In Summer Water Savings!

How do you compare?



More than half of Wenham residents—including Town Hall—don't water their lawns in the summer. These residents are not only saving money, but also doing their part to save water. To prepare for this summer, we wanted to let you know where you stand based on your water usage last summer.

Average Water Use Per Month (May-July 2016)



During May, June, and July 2016, your household used **more water** than the average similar-sized Wenham household.

Your household has some room to improve your water usage.

Check out the **Healthy Lawn, Happy Summer** flyer for tips to reduce your water use.

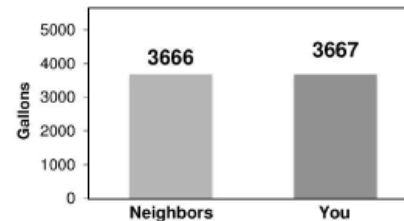
Together, we can conserve Wenham's water resources while keeping our lawns healthy all summer.



**Thank you for
helping your community!**

www.wenhamma.gov/waterconservation

Average Water Use Per Month (May-July 2016)

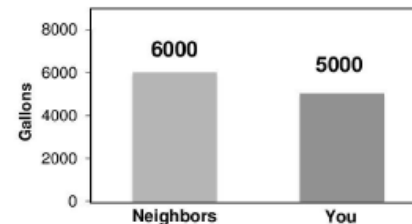


During May, June, and July 2016, your household used **the same** as the average similar-sized Wenham household.

Your household is doing great, but can save more with your water usage.

Check out the **Healthy Lawn, Happy Summer** flyer for tips to reduce your water use.

Average Water Use Per Month (May-July 2016)



During May, June, and July 2016, your household used **less water** than the average similar-sized Wenham household.

Your household is doing a good job regarding your water usage.

Check out the **Healthy Lawn, Happy Summer** flyer for tips to reduce your water use.

HEALTHY

LAWN

HAPPY SUMMER

Each of us makes a big impact in Wenham.

Reduce Lawn Watering

Eliminating or reducing summer lawn watering makes a big difference. Massachusetts households that water their lawns in the summer use up to 800 gallons a week. That's like running your shower for 5 hours!

The fact is, *a Wenham lawn doesn't need much water to stay healthy.* Overwatering your lawn can cause shallow roots and make it susceptible to pests, disease, and drought.

LAWN WATERING

800 Gallons

SHOWERING

5 Hours!

Keep It Natural

We get an average of 4 inches of rain per summer month, enough for healthy summer lawns. *Lawns need, at most, an inch of water a week to stay healthy.* Sometimes dormant grass goes dormant. Dormant grass is not dead and will go back to green. Going dormant creates more drought resistance and deeper roots, making a healthier, less sensitive lawn.

Save Water & Keep Your Lawn Healthy All Summer

During a Wenham summer, a healthy lawn will likely not need irrigation. However, if you must water your lawn, *follow the tips below* to water without waste.

- 1 Let grass grow long to stay healthy.
- 2 Water early in the morning to avoid water loss.
- 3 Water infrequently to encourage deep roots.
- 4 Water by hand, as automatic irrigation uses twice as much water.
- 5 If you have a lawn care crew, communicate to them that saving water is a priority and share this flyer.

Division of Ecological Restoration

Member of the Commonwealth of Massachusetts

More than half of Wenham homes already let their lawn go dormant each summer. *Join them by letting your lawn be healthy and natural while saving water, money, and time.*

Save water and money
*for yourself & your community by watering your lawn wisely or not at all:
 no more than one inch per week of rain and watering.*

www.wenhamma.gov/waterconservation

[illegible]

2017 Pilot Project Evaluation

Feedback group:
Largest reduction in
water use

- Results not statistically significant; point to positive behavior changes
- Users with high summer water use had largest reductions

Commitment group:
Small reduction in
water use

- Results similar to control group, not statistically significant
- Challenge to connect with people, resource intensive

Feedback
materials rated as
more useful

- Rated highest for saving water and keeping lawns healthy, especially by high water users

2018 Pilot Project

MassDEP funded 2nd round of pilot testing in 2018

- ▣ 3 new communities
- ▣ Feedback strategy only
- ▣ Focus on high summer water users

Water use group (Quartile)	# of campaign households	# of control households
Highest	100	100
Medium High	100	100
Medium Low	100	100
Low	0	0

2018 Updated Materials

HEALTHY **LAWN** HAPPY SUMMER!

Each of us makes **a big impact** in Concord.

Reduce Lawn Watering

Eliminating or reducing summer lawn watering makes a big difference. Concord households that water their lawns in the summer use an average of 1,900 gallons a week. That's like running your shower for 12 hours!

The fact is, *a Concord lawn doesn't need much water to stay healthy*. Overwatering your lawn can cause shallow roots and make it susceptible to pests, disease, and drought.

LAWN WATERING



1,900 Gallons

SHOWERING



12 Hours!

Water Only With Rain

OR

Water Wisely

In most years, we get enough rain to maintain a healthy summer lawn. *Healthy grass can go dormant (turn golden) during dry periods but it is not dead* and will green up with the return of rain. Going dormant creates more drought resistance and deeper roots, making a healthier, less sensitive lawn.

Dormant Grass



HEALTHY GRASS

DEEPER ROOTS

Half of Concord homes already let their lawn go dormant each summer. *Join them by letting your lawn be healthy and natural while saving water, money, and time.*

A healthy established lawn will likely not need irrigation. However, if you do water your lawn, follow the tips below to water wisely.

- 1 Water before 9 am to avoid evaporation.
- 2 Water infrequently and deeply to encourage deep roots.
- 3 Keep grass long to stay healthy (at least 2.5 to 3 inches).
- 4 Leave grass clippings on your lawn to keep soil moist.
- 5 Use a WaterSense-labeled controller on automatic irrigation systems.
- 6 Tell your lawn care crew to follow these guidelines.



Save water for your community
and the Environment by watering your lawn wisely or not at all.

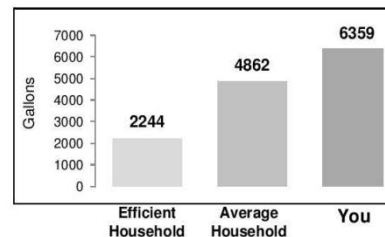
Please visit this Concord's website for more information:
www.concordma.gov/conservation

How do you compare?



More than half of Concord residents don't water their lawns in the summer. These residents are not only saving money, but also doing their part to save water. To prepare for this summer, we wanted to let you know where you stand based on your water usage last summer.

Average Water Use Per Month (Summer 2017)



During the summer of 2017, your household used **more water** than the average Concord household.

Your household has room to improve your water usage.
Check out the **Healthy Lawn, Happy Summer** flyer for tips to reduce your water use.

Together, we can conserve Concord's water resources while keeping our lawns healthy all summer.



Thank you for helping your community!

Please visit this Concord's website for more information: www.concordma.gov/conservation

2018 Results

*Water savings were greatest among
highest summer water users*

Comparison	Average Savings Per Treatment
Campaign vs. No campaign	39 gal/day (savings of 14%) *
Campaign vs. No campaign by water use group	Highest 72 gal/day (savings of 15%) *
	Medium High 41 gal/day (savings of 12%) *
	Medium Low 17 gal/day (savings of 11%)

* Statistically significant

2018 Results

Water savings differs by water system

Comparison	Average Savings Per Treatment
Campaign vs. No campaign by water system	Concord 8 gal/day (savings of 3%)
	Hingham 42 gal/day (savings of 14%) *
	West Springfield 66 gal/day (savings of 22%) *

* Statistically significant

2018 Results

Water savings by highest summer water users differs by water system

Comparison	Average Savings Per Treatment
Campaign vs. No campaign by water system AND water use group	Concord, Highest 22 gal/day (savings of 6%)
	Hingham, Highest 62 gal/day (savings of 12%) *
	West Springfield, Highest 128 gal/day (savings of 25%) *

* Statistically significant

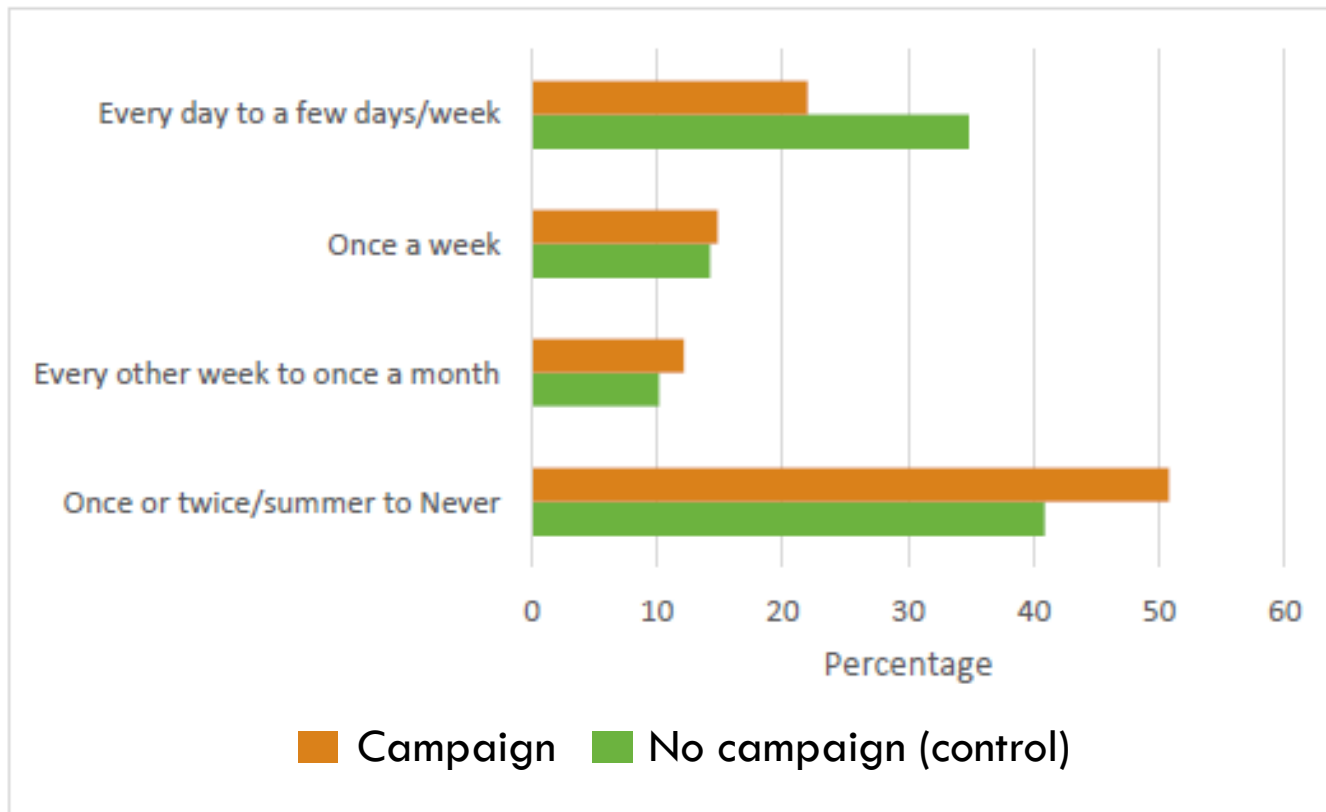
2018 Survey Results

- 6-question survey sent to Campaign and Control households
- 30.5% response rate
- Survey results mirror water usage

1. Using the scale, how important is it for your household to...												
	Not at all						Extremely					
a. save water?	0	1	2	3	4	5	6	7	8	9	10	
b. save money?	0	1	2	3	4	5	6	7	8	9	10	
c. protect the environment?	0	1	2	3	4	5	6	7	8	9	10	
d. keep your grass green all summer?	N/A	0	1	2	3	4	5	6	7	8	9	10
2. During this summer, how often did your household water your grass?												
<input type="checkbox"/> Every day		<input type="checkbox"/> Every other week				<input type="checkbox"/> Never						
<input type="checkbox"/> A few days/week		<input type="checkbox"/> Once/month				<input type="checkbox"/> N/A (No grass)						
<input type="checkbox"/> Once/week		<input type="checkbox"/> Once or twice/summer										
3. Did you receive mailed materials about the <i>Healthy Lawn, Happy Summer</i> Campaign this summer?												
<input type="checkbox"/> Yes→CONTINUE												
<input type="checkbox"/> No→SKIP TO #6												
4. Using the scale, how much did the program materials help you to...												
	Not at all						Extremely					
a. keep your lawn healthy?	0	1	2	3	4	5	6	7	8	9	10	
b. reduce your lawn watering?	0	1	2	3	4	5	6	7	8	9	10	
c. be aware of your water use?	0	1	2	3	4	5	6	7	8	9	10	
5. Using the scale, were the program materials...												
	Not at all						Extremely					
a. easy to understand?	0	1	2	3	4	5	6	7	8	9	10	
b. appealing to you?	0	1	2	3	4	5	6	7	8	9	10	
6. Please let us know if you have comments about summer water use:												

2018 Survey Results

Q. During this summer, how often did your household water your grass?

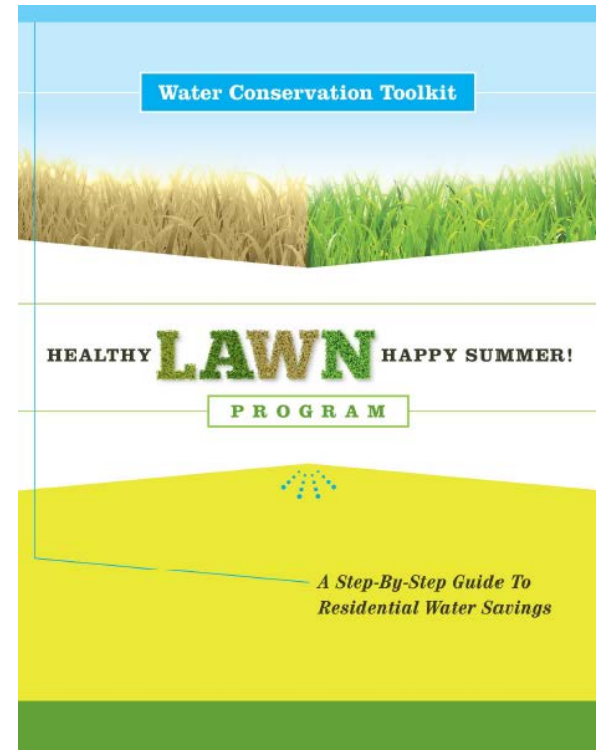


2019 Pilot Project

- ❑ Expanded pilot project to 6 towns (*2018 existing plus 3 new*)
- ❑ Focus on medium-high and high users
- ❑ Developing and testing toolkit

Next Steps:

- ❑ Evaluate results from 2019 pilot
- ❑ Finalize toolkit & distribute



Additional Info

All reports available at:

<https://www.mass.gov/waterconservationpilot>

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