

OUTDOOR SUMMER WATER CONSERVATION IN THE IPSWICH RIVER WATERSHED: COMMUNITY-BASED SOCIAL MARKETING PILOT PROJECT

Presentation Overview

- Review of CBSM and Benefits and Barriers research
- Overview of summer 2017 pilot project
 - ▣ Study design
 - ▣ Campaigns and implementation
 - ▣ Results
- Lessons learned
- Next steps

Background on Project

- Why is DER interested in summer water conservation ?
 - Improve streamflow conditions
 - Water use is highest when streamflow is lowest
 - Explore innovative, non-regulatory ways to encourage conservation and reduce summer outdoor water use
 - Increase our understanding of water users and their barriers to reducing summer outdoor water use

Community Based Social Marketing (CBSM)

- Many efforts to encourage consumers to change behavior/reduce resource use have fallen short of expectations
- More than just information and financial considerations drive behavior – social and psychological factors also play a significant role
- CBSM merges knowledge from psychology with social marketing
 - ▣ Allows you to better understand water users and target your message so that it is most effective

CBSM Methods

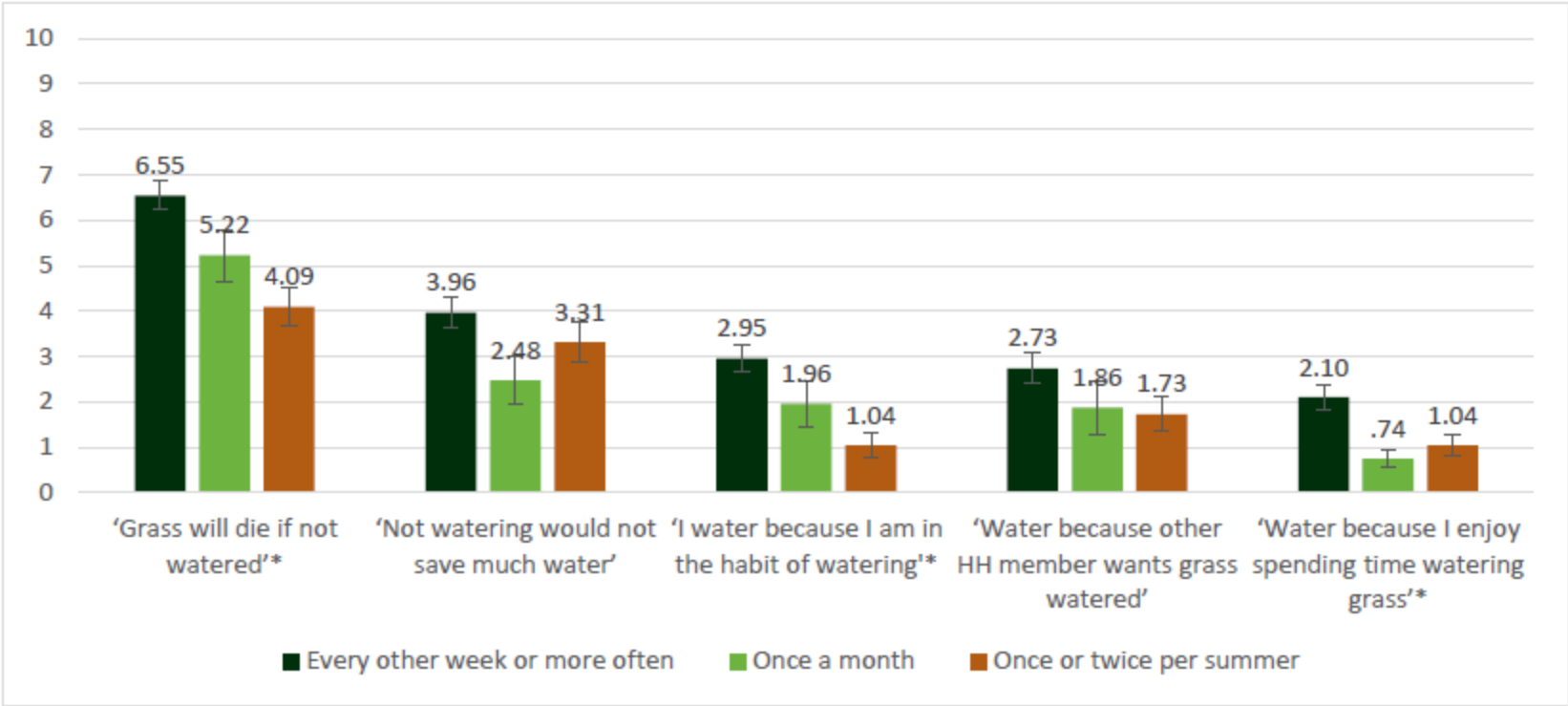
Five major steps

1. Identify which behaviors are most important
2. ID community-specific barriers & find the benefits – why target audience would elect to participate in behavior change
3. Develop strategies which increase benefits for desired action & reduce barriers to desired action
4. Pilot several strategies against each other & evaluate
5. Implement broadly

CBSM Benefits and Barriers Research

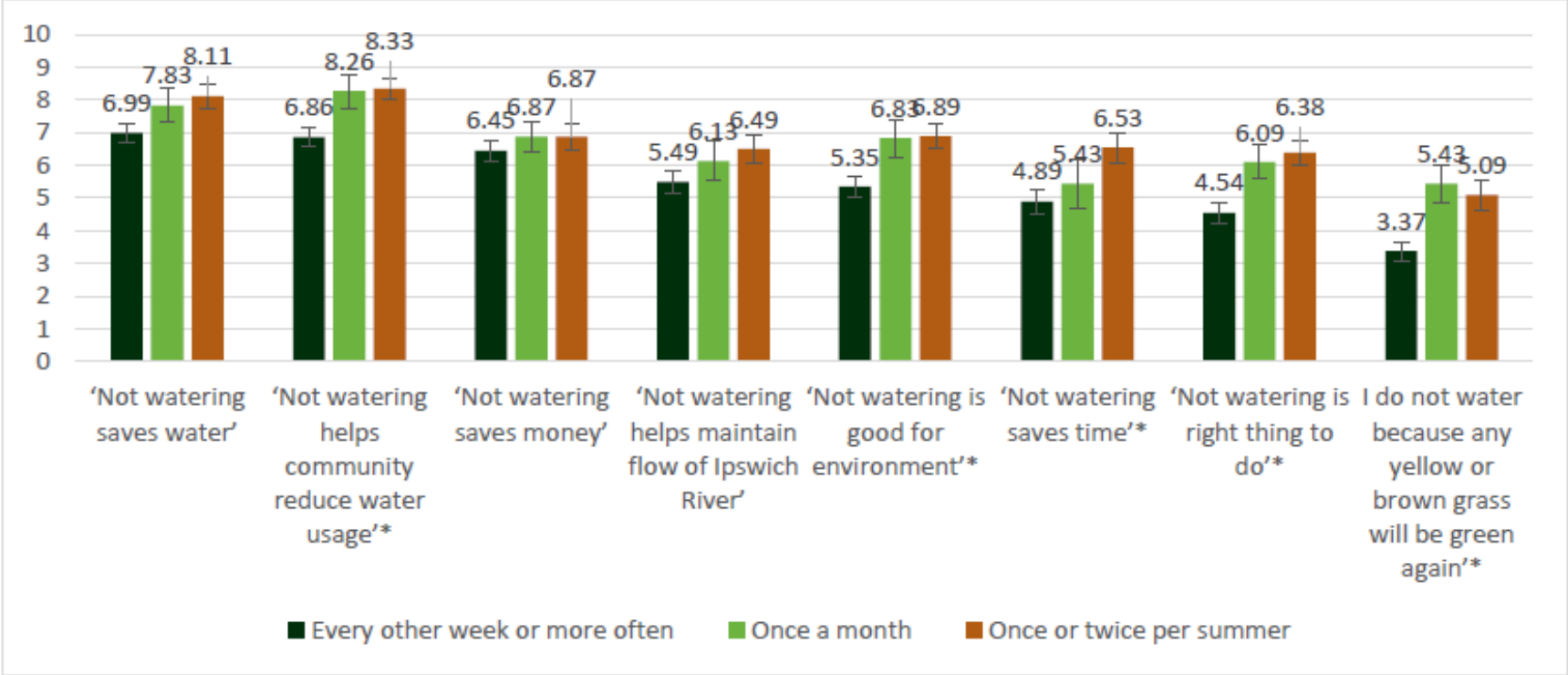
- DER and IRWA began the first steps to develop and implement a CBSM campaign to reduce summer outdoor water use in the watershed in winter 2016
 - ▣ Developed a prioritized list of target water use behaviors
 - ▣ Conducted mail survey to understand benefits and barriers to adoption of desired water use behaviors

Barriers to not watering grass in summer



Those who water most frequently most strongly believed grass would die if not watered

Benefits to not watering grass



Those who water most frequently are the less likely to believe that not watering will save water

Campaign Development & Study Design

- Pilot project in Wenham and Middleton
- Tested 2 strategies versus a control group
 - **Feedback Strategy:** Participants received, through postal mail, a personalized feedback sheet comparing their water usage to that of their neighbors along with an educational flyer
 - **Commitment Strategy:** Participants received door-to-door delivery of a educational flyer along with a request to commit to reducing their water usage
 - **Control:** Received no materials
- 125 households/strategy (375 total per 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.

HEALTHY GRASS

DEEPER ROOTS

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

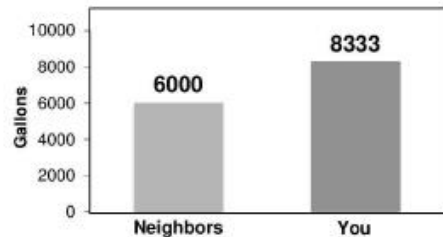
Join Wenham Neighbors In Summer Water Savings!

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)

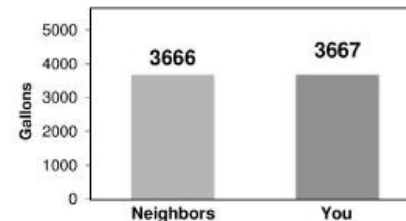


During May, June, and July 2016, your household used **more water** than the average similar-sized Wenham household.

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.

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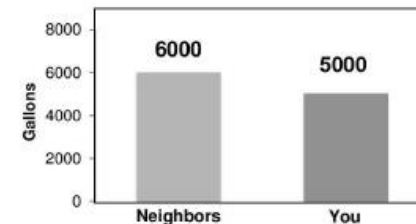


During May, June, and July 2016, your household used **the same** as the average similar-sized Wenham household.

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.

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

Commitment Materials



Each of us makes a big impact in Wenham.

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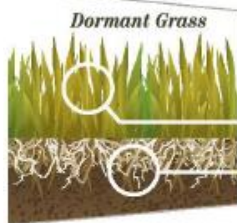
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During the summer, I, _____, am joining my neighbors in committing to watering wisely or not at all.

Signature	Print Your Name As You Want It To Appear Online	Preferred Mode of Contact (email/phone)

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

Data/implementation challenges

□ Data challenges

Town Name	Wenham	Middleton
Collection	By town	By neighboring town
Water data quarters	Feb-Apr, May-Jul, Aug-Oct, Nov-Jan	Jan-Mar, Apr-Jun, July-Sept, Oct-Dec
Data format	Digital	Paper

- Extreme outliers, household change, zero use

□ Implementation challenges

- Door to door

□ Pilot evaluated using two methods

- Difference in water use between 2016 to 2017

- Survey sent to subset of program participants

Results - Wenham

Average change, May-Oct 2016-2017

	Commitment	Feedback	Control
Overall use	-3761	-5336	-4117

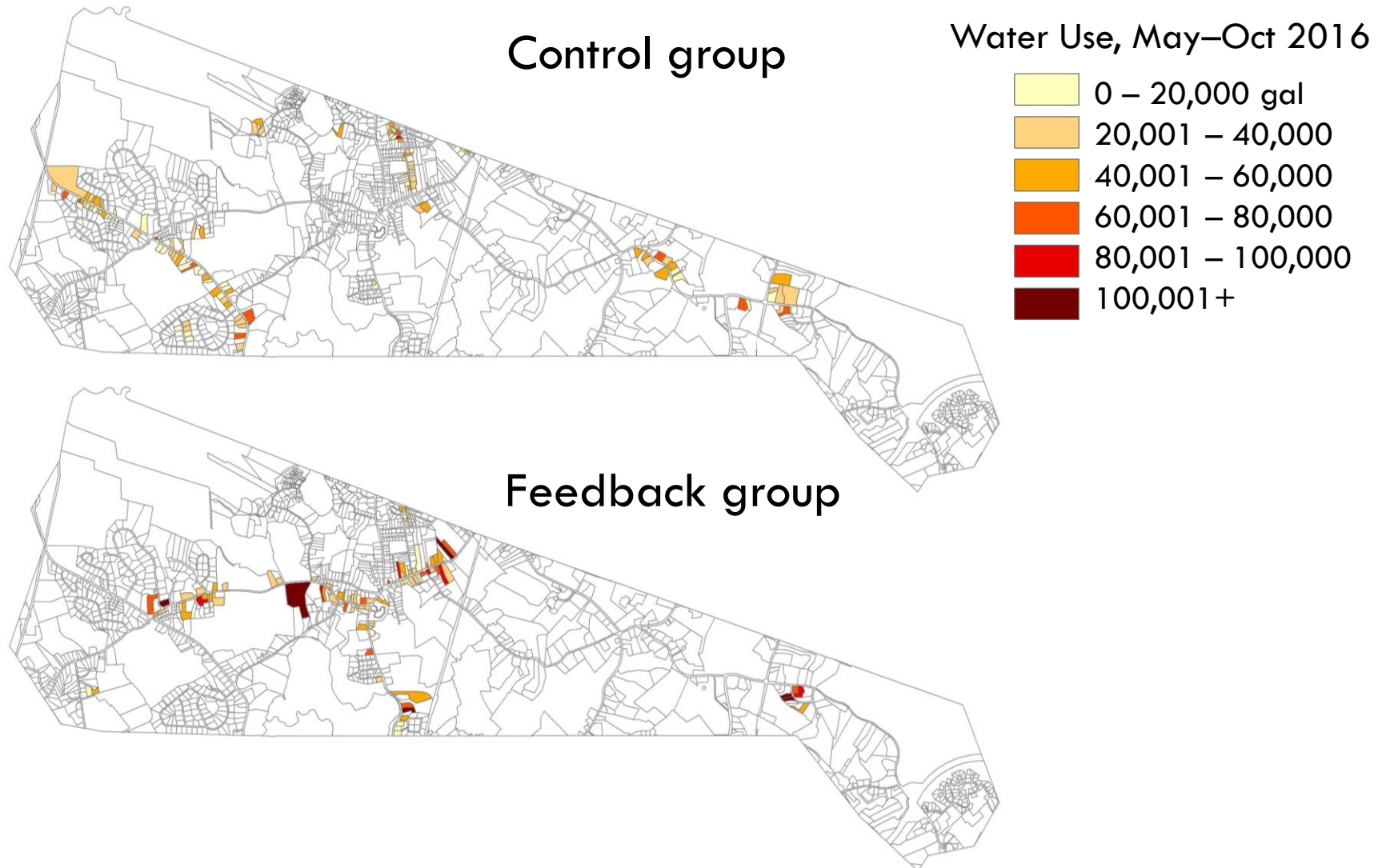
Households, ranked by use	Commitment	Feedback	Control
1-25% households	385	-94	34
25-50% households	-2167	3320	-793
50-75% households	-1308	-7846	-7480
75-100% households	-4455	-34308	-18643

Average percent change, May-Oct 2016-2017

	Commitment	Feedback	Control
Overall use	-13	-11	-12

Households, ranked by use	Commitment	Feedback	Control
1-25% households	9.4	-0.1	0.5
25-50% households	-7.2	9.8	-2.0
50-75% households	-3.3	-16.5	-18.5
75-100% households	-21.9	-22.2	-21.8

Wenham - Water Use 2016



Wenham – Change in Water Use



Results - Middleton

Average change, April-Sept 2016-2017

	Commitment	Feedback	Control
Overall use	-3895	-6867	-6370

Households, ranked by use	Commitment	Feedback	Control
1-25% households	5233	-475	1624
25-50% households	-7068	-7373	968
50-75% households	-8800	-6802	-9014
75-100% households	-9709	-38685	-23592

Average percent change, April-Sept 2016-2017

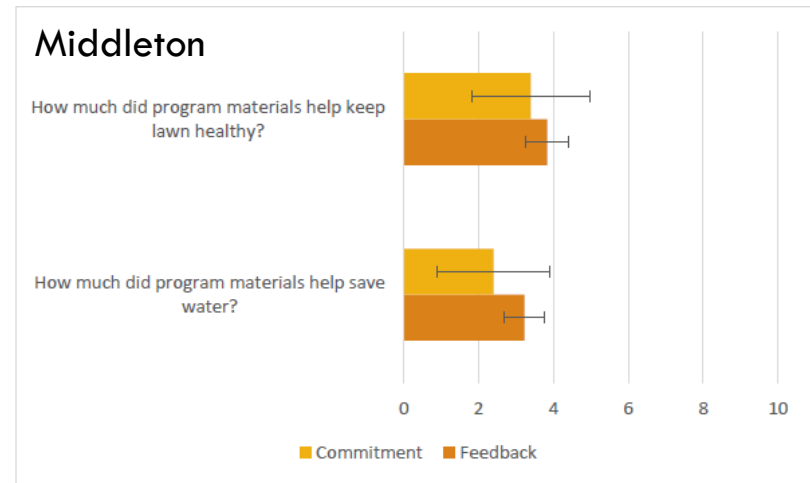
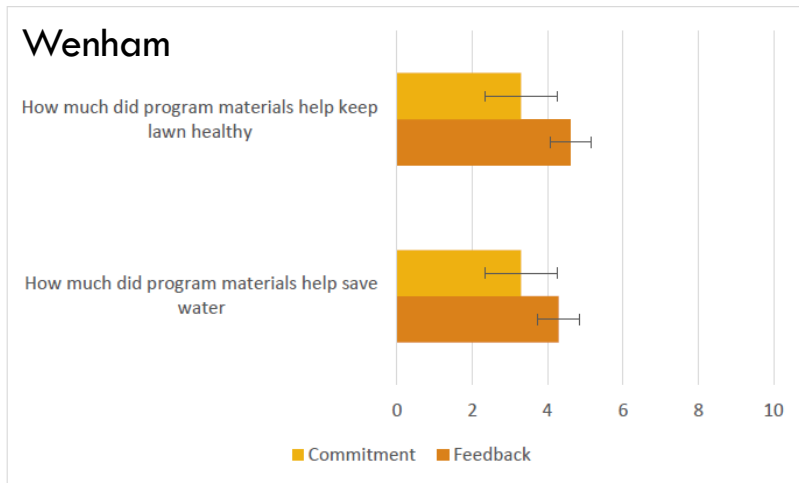
	Commitment	Feedback	Control
Overall use	-6	-14	-13

Households, ranked by use	Commitment	Feedback	Control
1-25% households	24.7	-1.1	15.1
25-50% households	-12.0	-19.9	6.2
50-75% households	-12.4	-10.6	-16.0
75-100% households	3.2	-29.0	-20.7

Usefulness of Materials

Consumers rated Feedback materials as more helpful

Higher consumers of water found materials more helpful



Summary - Results

- The feedback group in both towns saw the largest decrease in gallons between 2016 and 2017
- While the changes in the feedback group were not statistically significantly different than the control, they point to positive behavioral changes
- The commitment group saw the lowest reductions in water use
- Feedback materials were rated as more useful for saving water and keeping lawns healthy, especially with high water users

Lessons Learned

- Pilot testing is important!
 - ▣ Identify and address problems before broad implementation
- If possible, make household's feedback more recent and timely.
- Deliver more than one communication for mailed materials, such as having a second mailing to the feedback group to increase engagement and recall
- Door-to-door teams may not be appropriate for this topic, location, and available resources

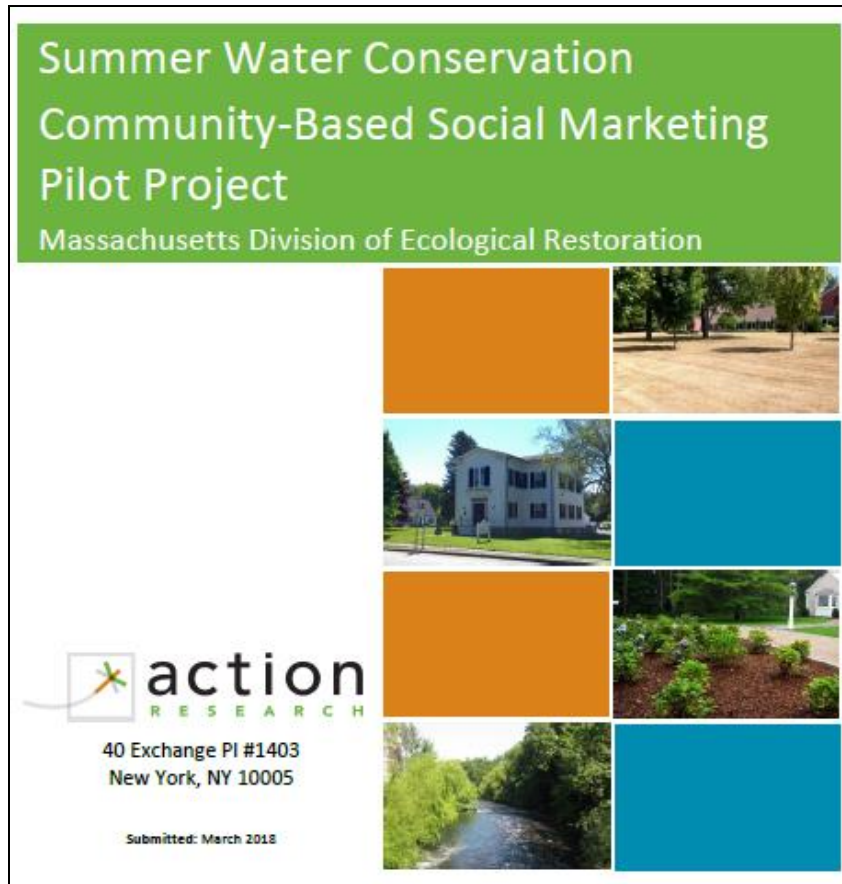
Lessons Learned

- Focus primarily on medium to high water users, or users with a high summer:winter water use ratio
- Use a larger sample size to account for dropouts and high variability in data
- Consider if there are important subgroups that have additional barriers (e.g., if the materials should address lawn service companies in greater detail)
- Consider if materials should further address weather variables, such as if the summer has been rainy, specifically speak to the importance of still conserving

Next Steps

- DEP to pilot feedback strategy in summer 2018 incorporating lessons learned from our project

Questions?



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617-626-1544

Final report available at:

<https://www.mass.gov/service-details/ipswich-river-flow-restoration>