

*Exhibit 6.2*

*Overwatering Campaign Baseline Phone Survey Summary*

# Baseline Phone Survey Summary

OC Stormwater Public Education  
*Overwatering Campaign*

July 19,

# 2013

The Orange County Stormwater Program conducted this survey to serve as baseline as well as to help inform the outreach that would be conducted as part of its first *action campaign*- to curb overwatering. This campaign is slated to launch late summer/early fall of 2013. The data were collected in April 2013. Below we summarize the key findings of the phone survey data that are pertinent to campaign planning.

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## Methods

### *Procedures*

Surveys were conducted via phone by a well-established phone survey firm (Customer Research International) in April 2013. Phone numbers were gathered from a purchased list<sup>1</sup> of listed household numbers. A 50% gender split was used<sup>2</sup>. Respondents were entered into a raffle to receive a \$25 gift card to Orange County's famous waffle house, Bruxie. A total of 118 respondents opted to be included in the raffle out of 505 respondents, representing approximately 24% of the sample.

Trained phone survey interviewers introduced the survey as the "Orange County Community Survey," which they explained was designed to gather information that would aid in planning future programs for Orange County residents. The survey was introduced in these broad terms to avoid sample bias- e.g., had the survey been introduced as the "Orange County Stormwater Survey," residents already interested in water or environmental issues may have been more willing to take it, giving us a sample of folks already engaged in the desirable behaviors. Instead of this, we aimed for a broad sample representative of Orange County residents overall.

If respondents agreed to complete the full survey, interviewers first assessed eligibility criteria. To be eligible to participate, respondents had to be at least 18 years of age, a resident of Orange County, and able to complete the survey in English or Spanish. They also had to have an outdoor lawn or garden at their residence, and, if they used a sprinkler system to water their lawn or garden, the respondent, someone in the respondent's household, or the respondent's gardener or landscaper had to be responsible for maintaining it. If a respondent was not eligible to participate, the interviewer thanked her/him and concluded the interview. If the eligibility criteria were met, interviewers proceeded with the survey, reading each

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<sup>1</sup>The telephone sample was purchased from Scientific Telephone Samples out of Foothill Ranch, CA. To satisfy quotas for telephone type, two lists were procured - Enhanced-Wireless and Listed Household Landline. The Enhanced-Wireless sample frame is based upon a very large database of known wireless phones, along with the corresponding names and addresses (over 100 million listings within the U.S.). A random, proportionately representative sample of records within the desired study geography was pulled to complete this study. Similarly, the landline sample was randomly and proportionately selected from a listing of known landline telephone numbers within the study geography.

<sup>2</sup> For surveys conducted on a landline telephone - because many households contain both male and female resident qualified to complete the survey, gender quotas were controlled by asking for a specific respondent within the household. Call-backs were scheduled as necessary depending on whether gender quotas were already met (e.g., if the male gender quota was met and a male answered the phone and indicated an adult female also lived in the household, a call-back would be scheduled to reach the female). Surveys via cell phone were conducted with the respondent answering the phone.

question aloud to the respondent, and recording responses using a Computer-Assisted Telephone Interviewing system. The interview continued with the key content questions. At the conclusion of the interview, half of the participants were selected at random and were asked if they would be interested in participating in the campaign. A total of 245 respondents were asked if they wanted to participate in the program and of these, 41 (17%) consented and provided contact information. A total of 505 eligible respondents completed the survey.

### *Materials*

An 8-minute survey was developed to assess current engagement in lawn and garden watering practices, perceived water efficiency, willingness to reduce sprinkler run times, perceptions of run-off, and awareness of drought-tolerant vegetation. The survey was designed with impact in mind: what behaviors could potentially have the greatest impact on minimizing pollution entering the storm drain system? What will be the best methods for reaching Orange County residents with the campaign? The full survey is available in Appendix A.

### *Participants*

A total of 25,940 households were called to attain 505 completed surveys, representing a 2% completion rate. The most common reasons for failing to achieve a completion were no answer, government or business number, answering machine, disconnected phone, computer tone, or phone busy, constituting 80% of calls. Refusals constituted 4% of calls, and respondents being unavailable accounted for 11%. Language problems ended 2% of calls. Less than 1% of willing respondents did not meet eligibility criteria.

## Findings

### *Background and Demographics*

As per the 50% gender split, the sample included 247 males and 253 females. The average age of respondents was 57 years<sup>3</sup>. The vast majority of respondents (90%) indicated that English was the language they were most comfortable speaking. Approximately 7% of respondents preferred Spanish, and smaller percentages of respondents indicated “other” as their preferred language.

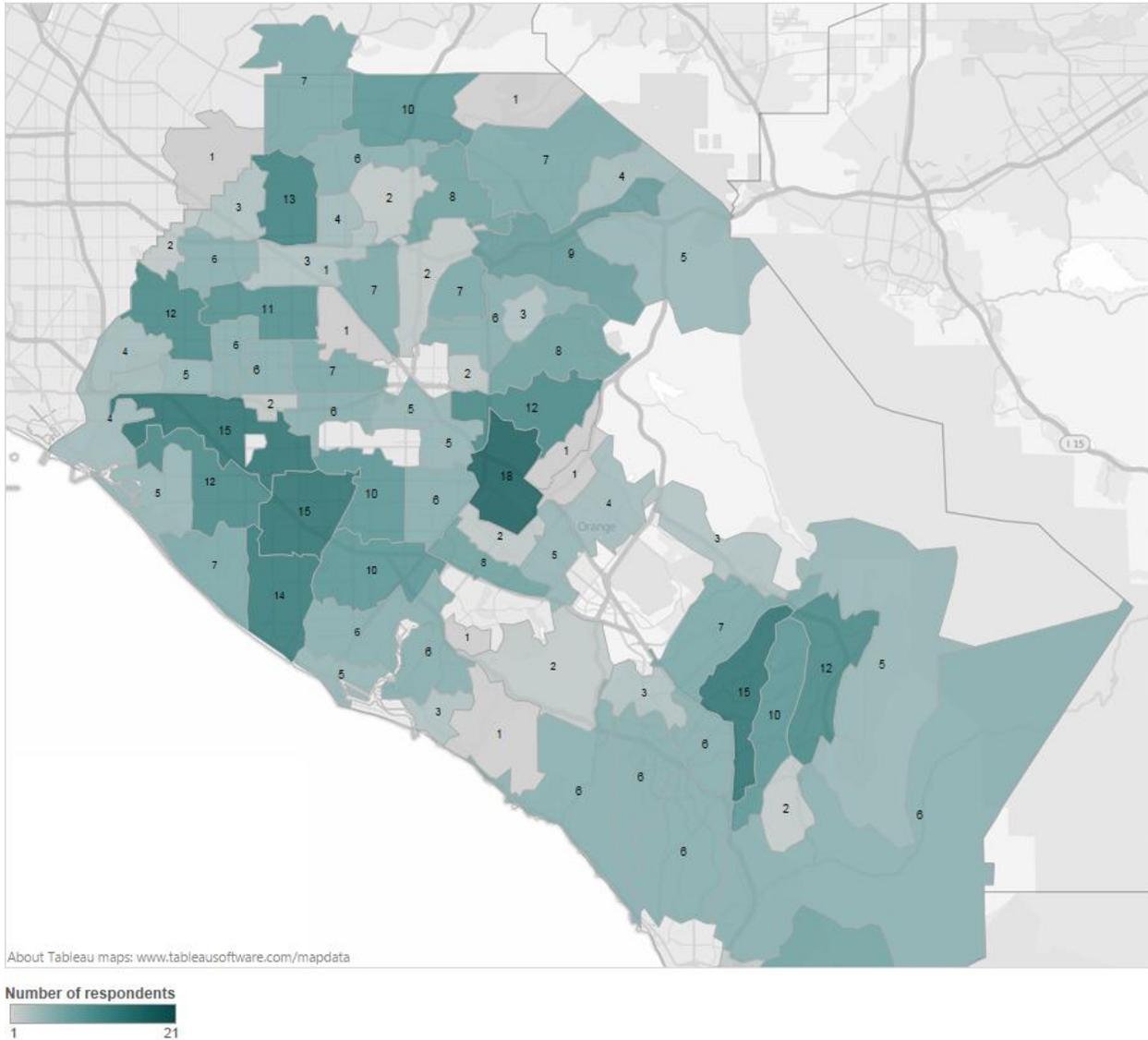
In terms of representing the County, the majority of areas were represented as can be seen in Figure 1 on the following page, with slightly heavier representation in the

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<sup>3</sup>The average age of all of the people in Orange County is 35; however, the target audience for this campaign does not include all people in Orange County since it's a program targeted at homeowners. Unfortunately, average age of Orange County homeowners or single family dwellers is not readily available online however, there was information indicating that first time homebuyers nationwide are, on average, 31 years old. In addition, the average age of people who go into assisted living facilities is 86. In which case, 57 may be within the age range of the target audience.

northern coastal and central inland areas as can be seen by the darker green shading in Figure 1.

Figure 1. Number of survey respondents by zip code in Orange County.



As can be seen in Figure 2 below, in terms of residence type, most respondents lived in a single-family home (87%), and nearly all of them (90%) owned their homes. Slightly more than two thirds of respondents living in single-family homes were not affiliated with a homeowner’s association. A minority of respondents resided in multi-family housing (4%), and half of these were homeowners. Fewer respondents lived in mobile homes (3%), and most of these (11 out of 13) owned their homes. A minority of respondents did not respond to this question or indicated “other” type of residence.

Figure 2. Residence type by home ownership status



*Where do respondents turn for information about lawn and gardening?*

Internet reigned as the most common source where respondents obtained information about lawn and garden, with 36% of the sample selecting this as an option. The next most common source of lawn and garden information was home improvement stores, reported by 21% of the sample. Additionally, 19% of the sample reported obtaining their information from an “other” source, which open-ended responses revealed was

mostly included nurseries and gardeners. This suggests that key points of contact for the program should include internet and specialty information outlets for lawns and gardens, including home improvement stores, nurseries, and gardeners.

Figure 3a. Number of respondents who reported obtaining lawn and garden information from various sources

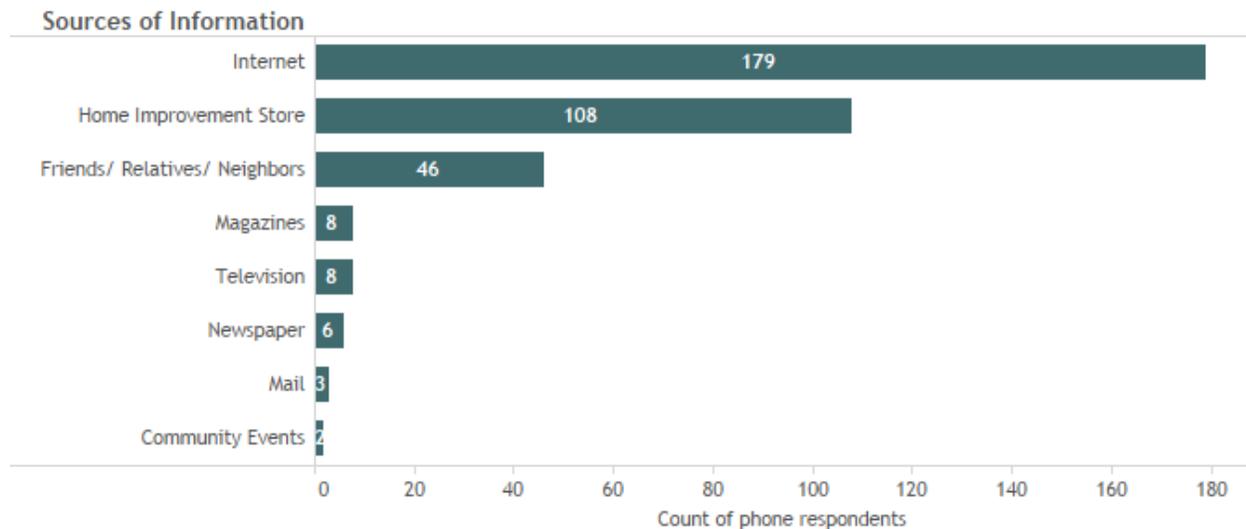


Figure 3b. Number of respondents who reported obtaining lawn and garden information from various sources, by gender

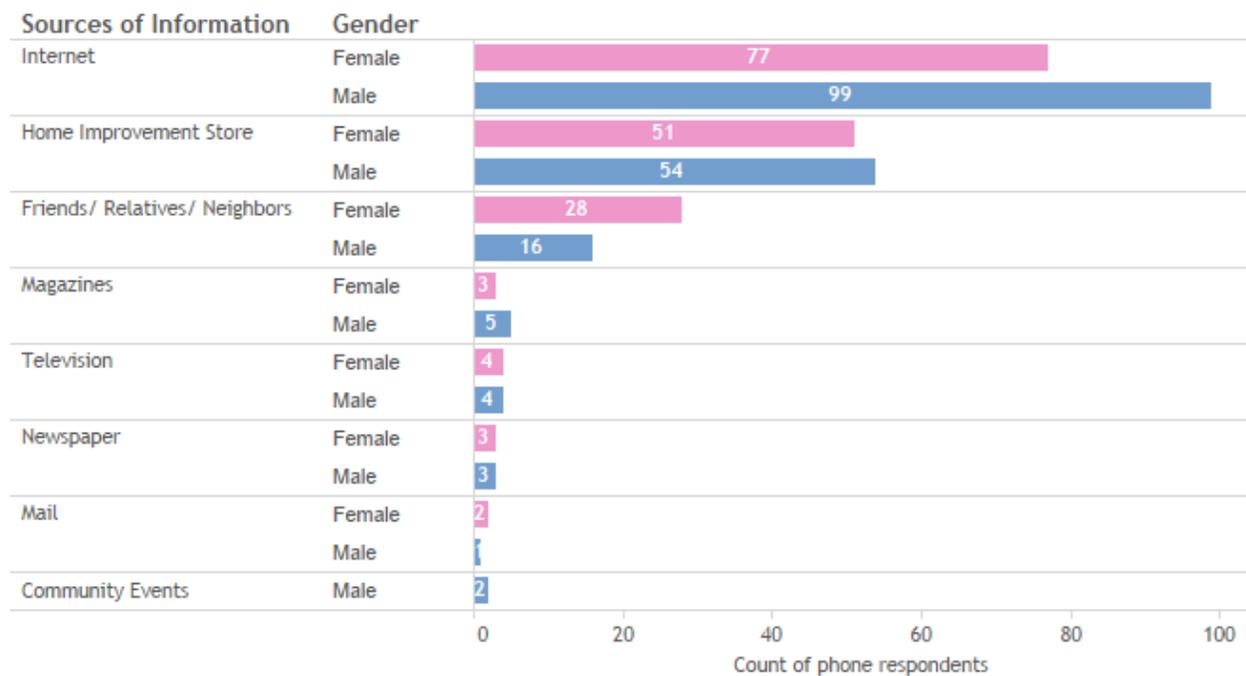


Figure 3c. Number of respondents who reported obtaining lawn and garden information from various sources, by age

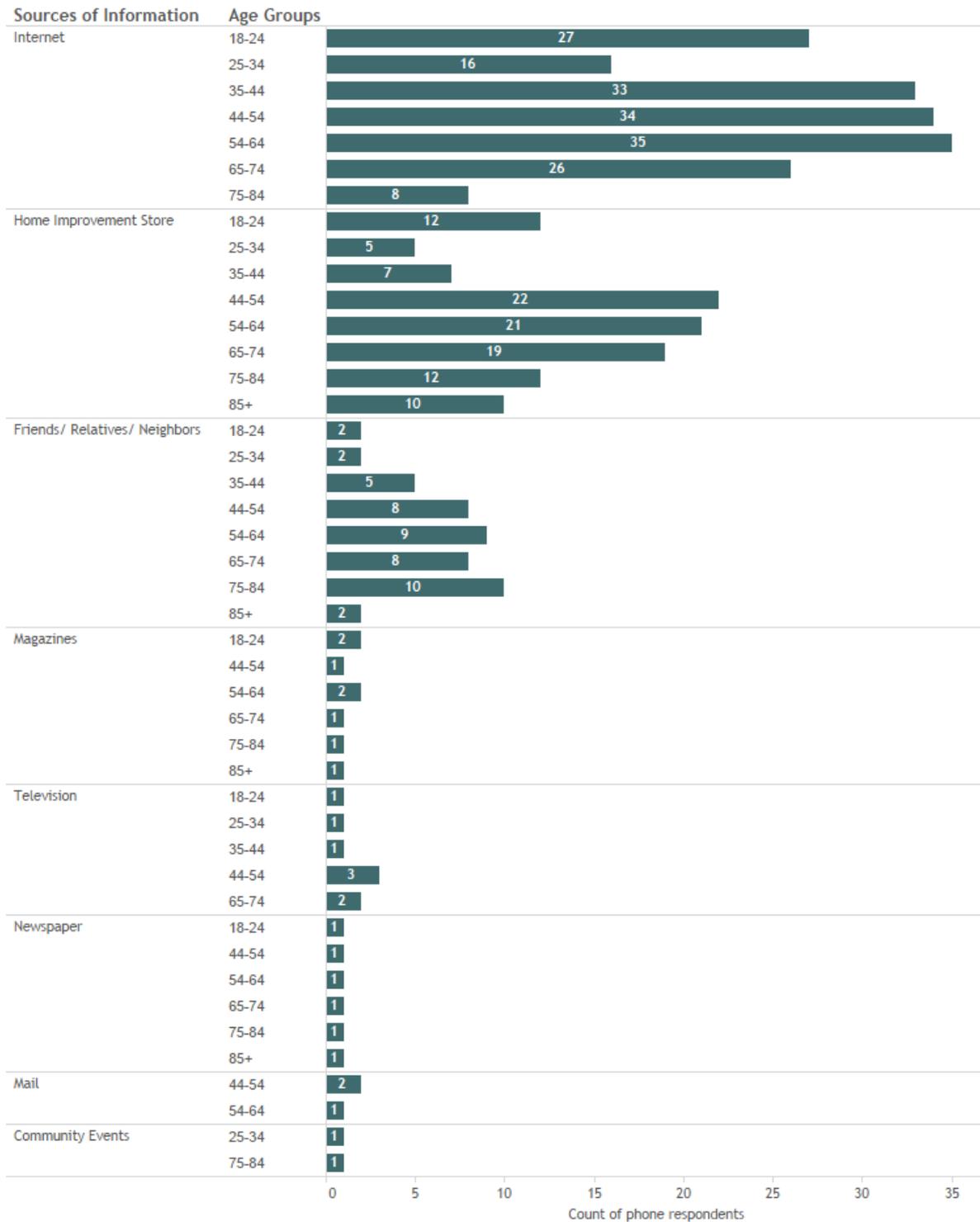
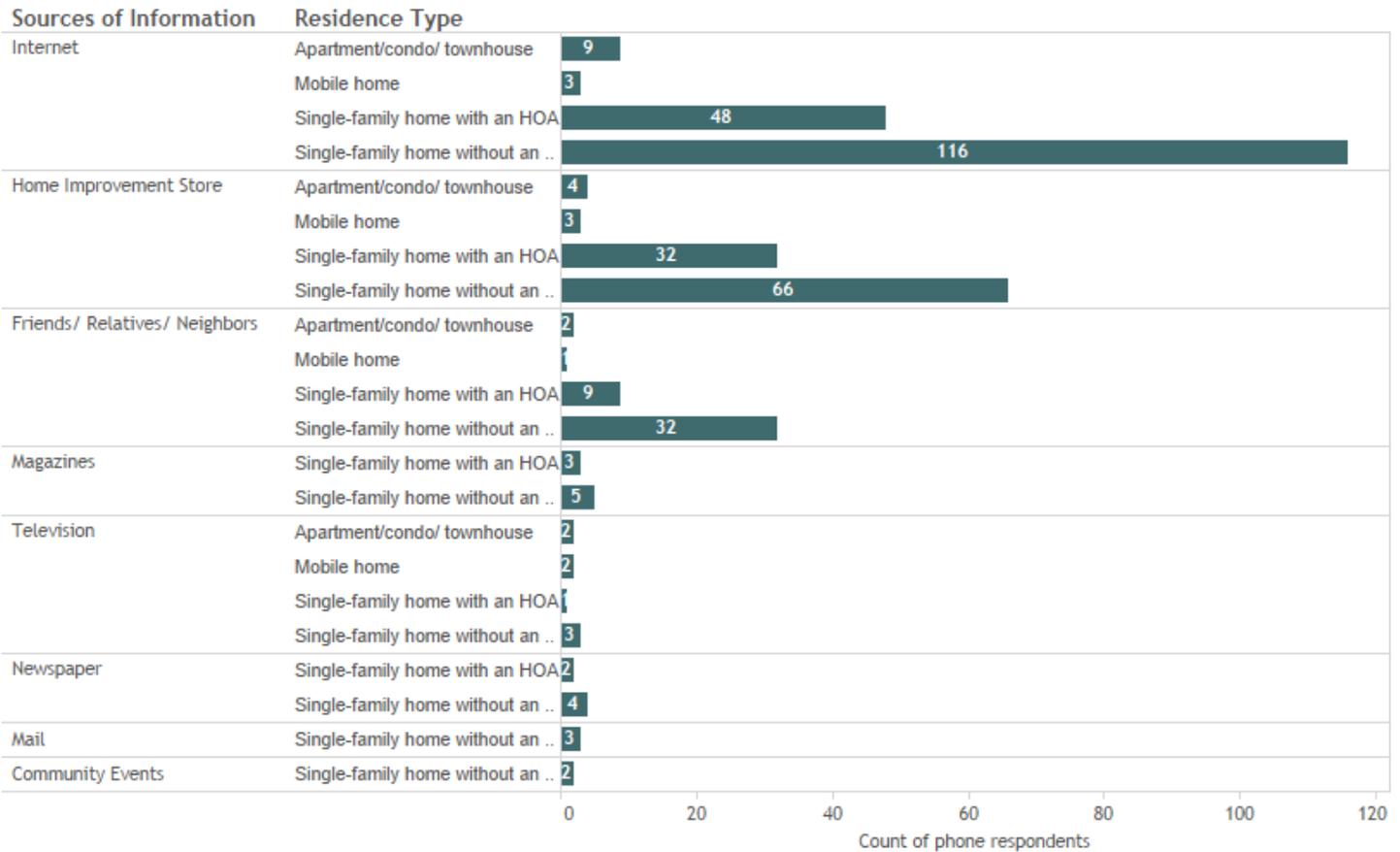


Figure 3d. Number of respondents who reported obtaining lawn and garden information from various sources, by residence type



**Basic lawn watering characteristics**

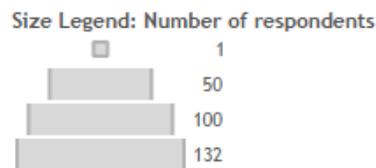
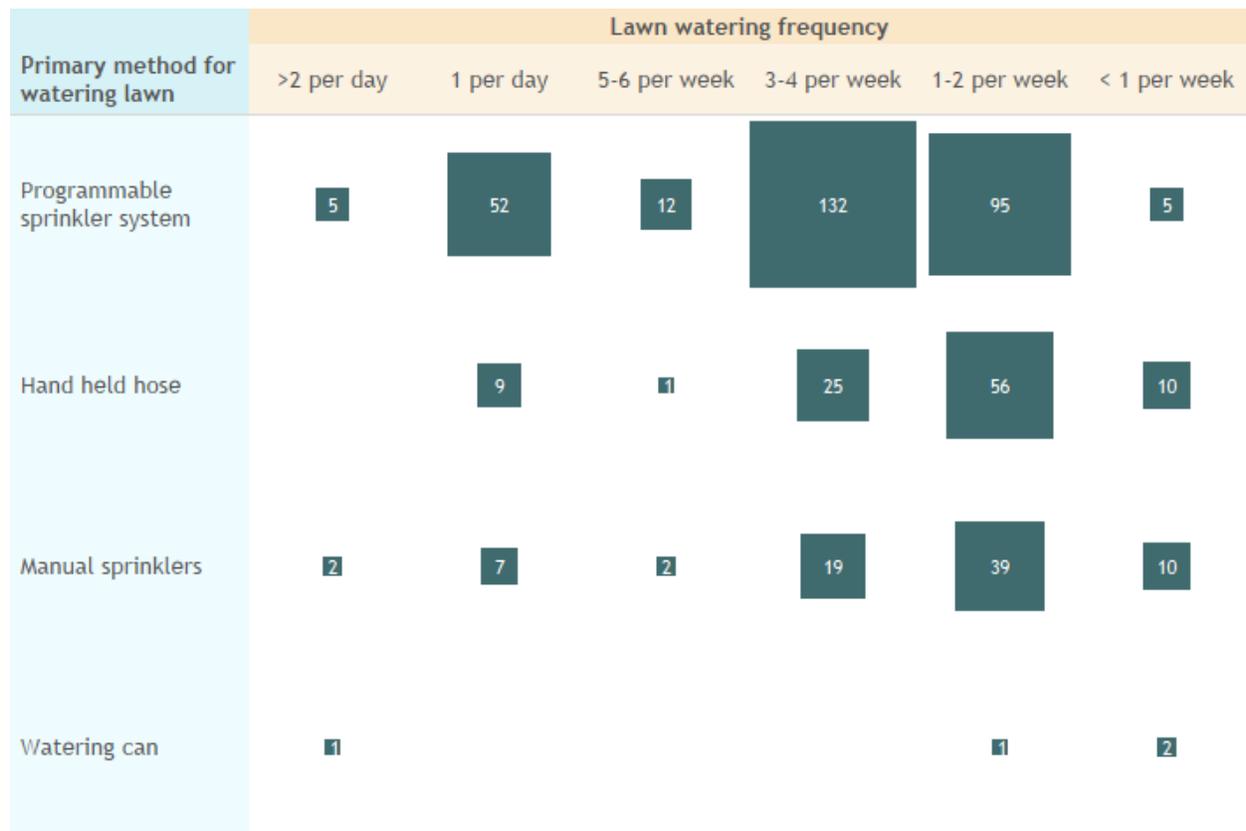
More than three quarters of the sample (78%) reported using either programmable/automatic (n=311) or manual (n=81) sprinklers as the primary method to water their lawn or garden. Approximately 21% reported using a hand-held hose, and 72% of these had a nozzle or shut-off valve on their hose. A minority of respondents used a watering can or other method to water their lawns or gardens.

In terms of watering frequency, the most common frequencies were 1-2 or 3-4 days per week, reported by 77% of respondents. A minority (5%) of respondents watered less frequently than that, and few respondents watered 5-6 days per week (3%). However, a subgroup of 16% were daily waterers.

Summarizing, while the most common behavior was watering a few times per week, there was a subgroup that watered every day, and these folks may be a good target for reducing the frequency of watering. To explore this further, we examined watering frequency by residence type and identified that all but two of the daily

waterers resided in single family homes. Additionally, when looking at watering frequency by primary method of watering, we see in Figure 4 that generally the more frequent watering was disproportionately done with automatic/programmable sprinkler systems. This suggests an excellent window of opportunity for the program: targeting individuals with these systems to reduce their watering frequency involves a one-time “set and forget” behavior that can have a big impact.

Figure 4. Watering frequency by primary watering method



Regarding watering duration, the average duration of each incidence of watering was 15 minutes. Duration of watering seemed to be inversely related to frequency of watering: the overall trend showed that the more frequent respondents watered, the fewer minutes they spent watering each time. See Figures 5a, 5b, and 6 for additional information.



Figure 5a. Duration of watering by frequency of watering

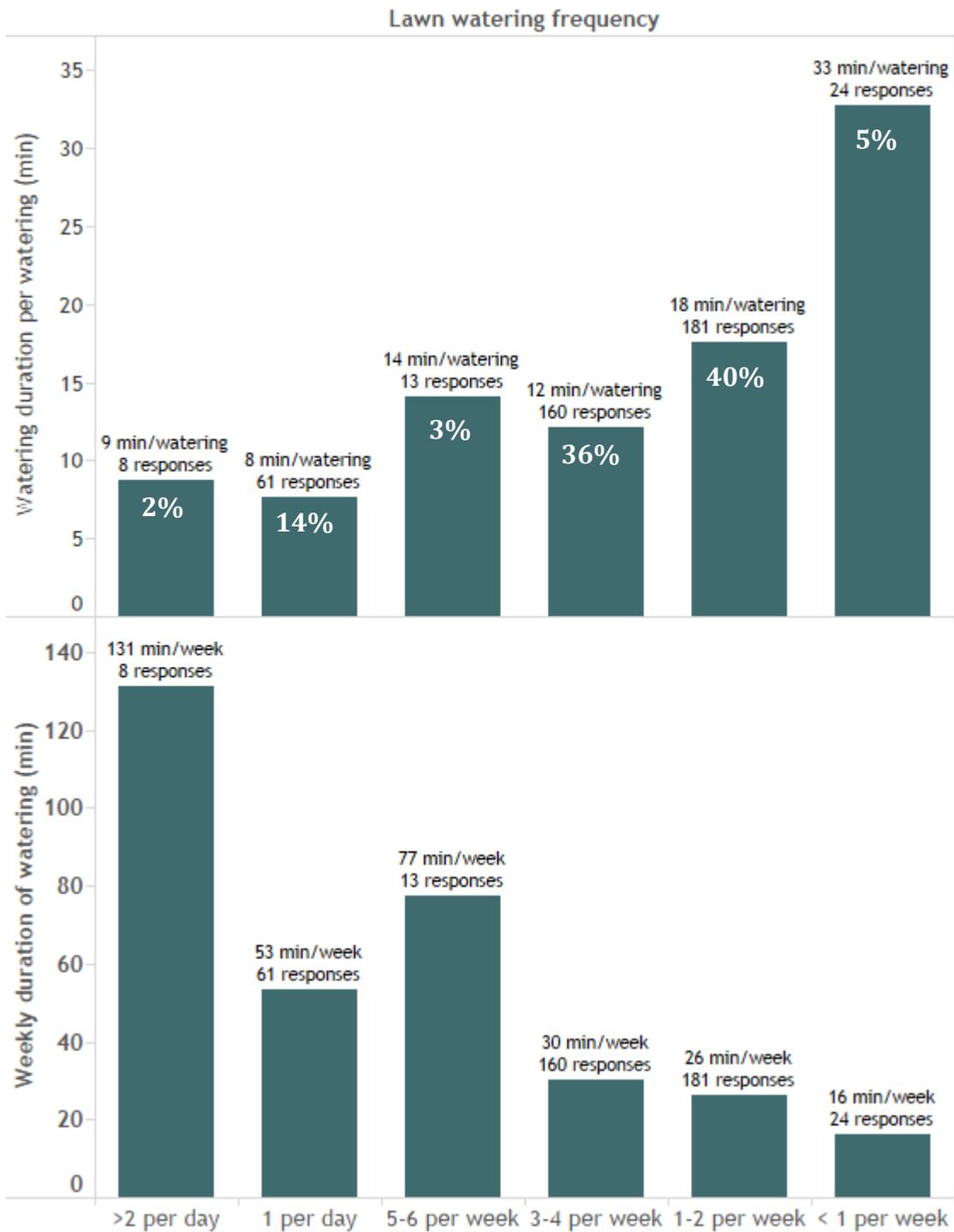


Figure 5b. Duration of watering by frequency of watering (daily waterers excluded).

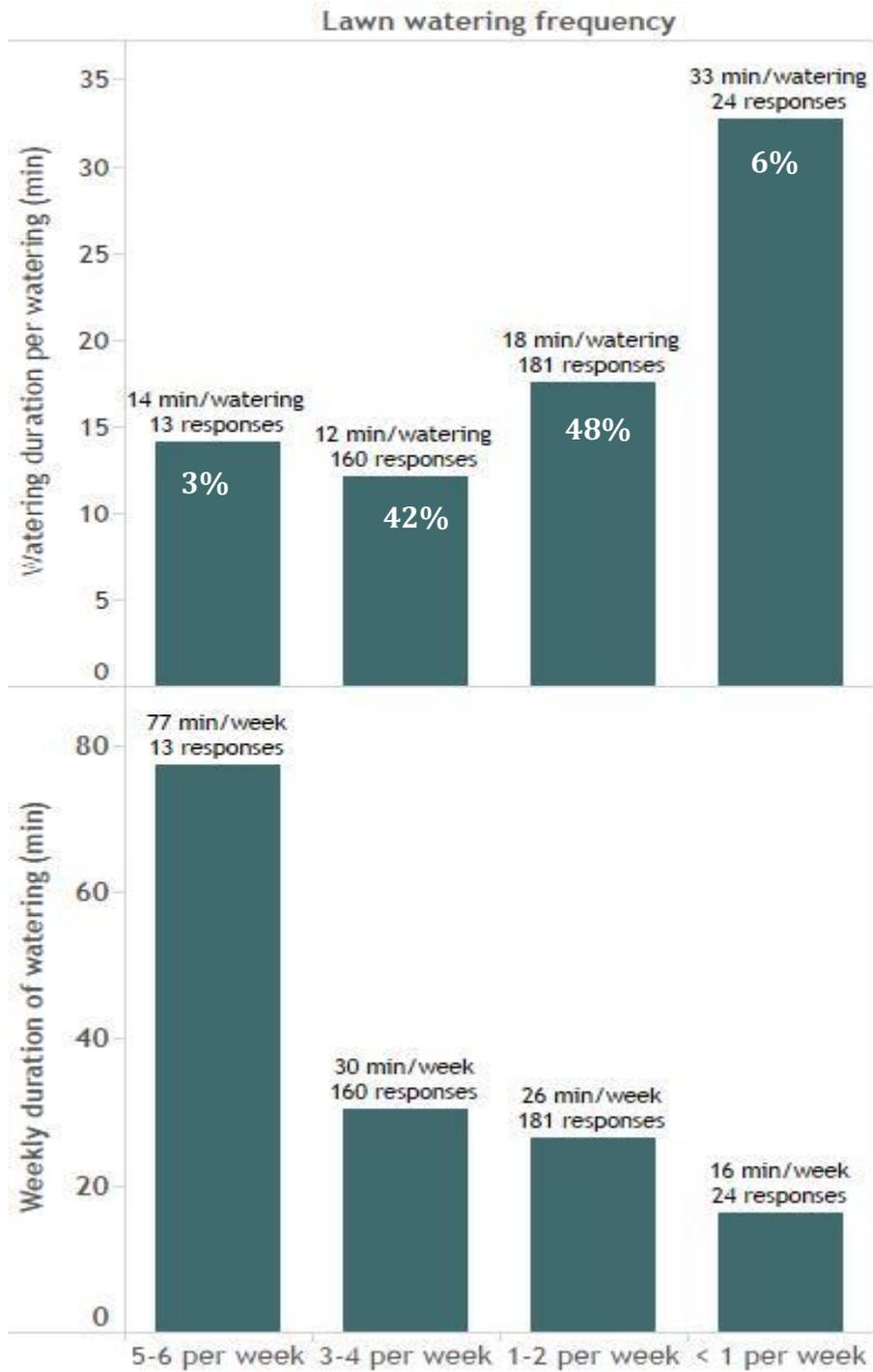
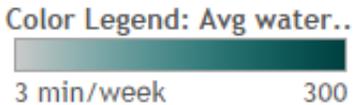


Figure note. Percentages refer to the number of respondents of the total respondents who water between 5-6 times per week to less than once per week (n=378).

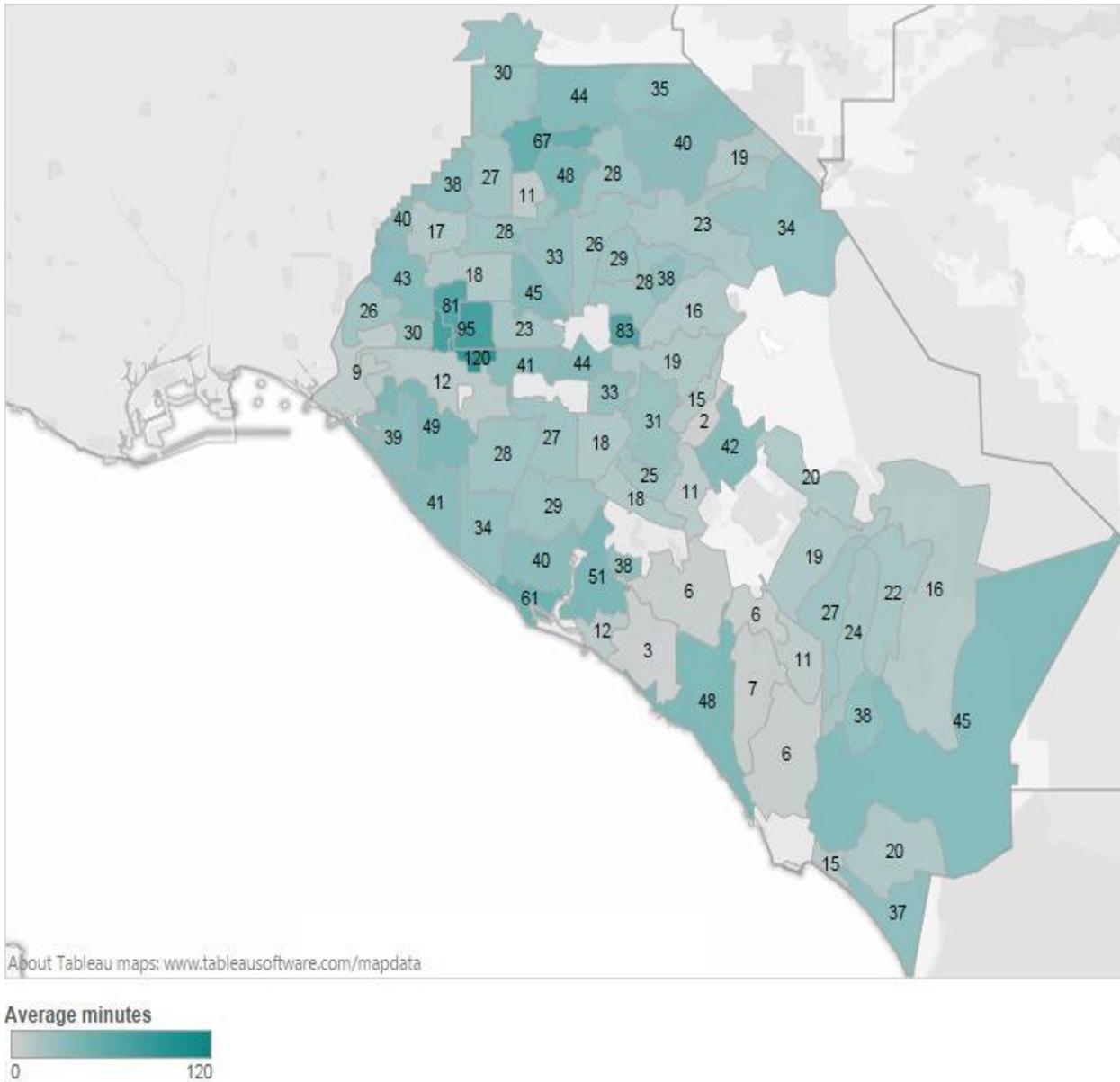
Figure 6. Watering duration (per week) primary watering method and by frequency

Primary method for wateri..	Lawn watering frequency					
	>2 per day	1 per day	3-4 per week	5-6 per week	1-2 per week	< 1 per week
Programmable sprinkler system	81 min/week 5 response(s)	46 min/week 46 response(s)	26 min/week 122 response(s)	62 min/week 10 response(s)	20 min/week 86 response(s)	17 min/week 4 response(s)
Manual sprinklers	173 min/week 2 response(s)	31 min/week 7 response(s)	28 min/week 18 response(s)	110 min/week 2 response(s)	29 min/week 39 response(s)	19 min/week 10 response(s)
Hand held hose		130 min/week 7 response(s)	62 min/week 19 response(s)	165 min/week 1 response(s)	34 min/week 53 response(s)	17 min/week 8 response(s)
Watering can	300 min/week 1 response(s)				15 min/week 1 response(s)	3 min/week 2 response(s)
Other		14 min/week 1 response(s)	8 min/week 1 response(s)		61 min/week 2 response(s)	



To explore whether watering duration differed by area, we examined watering duration by location. Although a few “hot spot” areas in the central northern area of the county were apparent, no clear county-wide patterns were evident. See Figures 7a and 7b for additional details.

Figure 7a. Average session watering duration (minutes) by ZIP code.





### *Spotlight on Sprinkler Systems*

The subset of participants who reported they had sprinkler systems were asked an additional series of questions. For instance, those who stated they used a programmable/automatic sprinkler system also were asked who was responsible for maintaining that system. See Figure 7. Approximately 83% of respondents stated that they themselves or someone else in their household maintained their sprinkler systems. The remaining 17% reported that sprinkler system maintenance was conducted by their gardener or landscaper. Similarly, nearly all respondents (89%) with programmable sprinkler systems were confident or very confident that they or someone in their household could adjust their sprinkler system run time (see Figure 8). These findings suggest that large proportion have the technical know-how in their households to adjust automatic sprinkler systems, which makes them a great target for some of the Overwatering campaign program goals related to adjusting sprinkler systems.

Figure 8. Respondents' reports of who maintains programmable/automatic sprinkler system, by gender

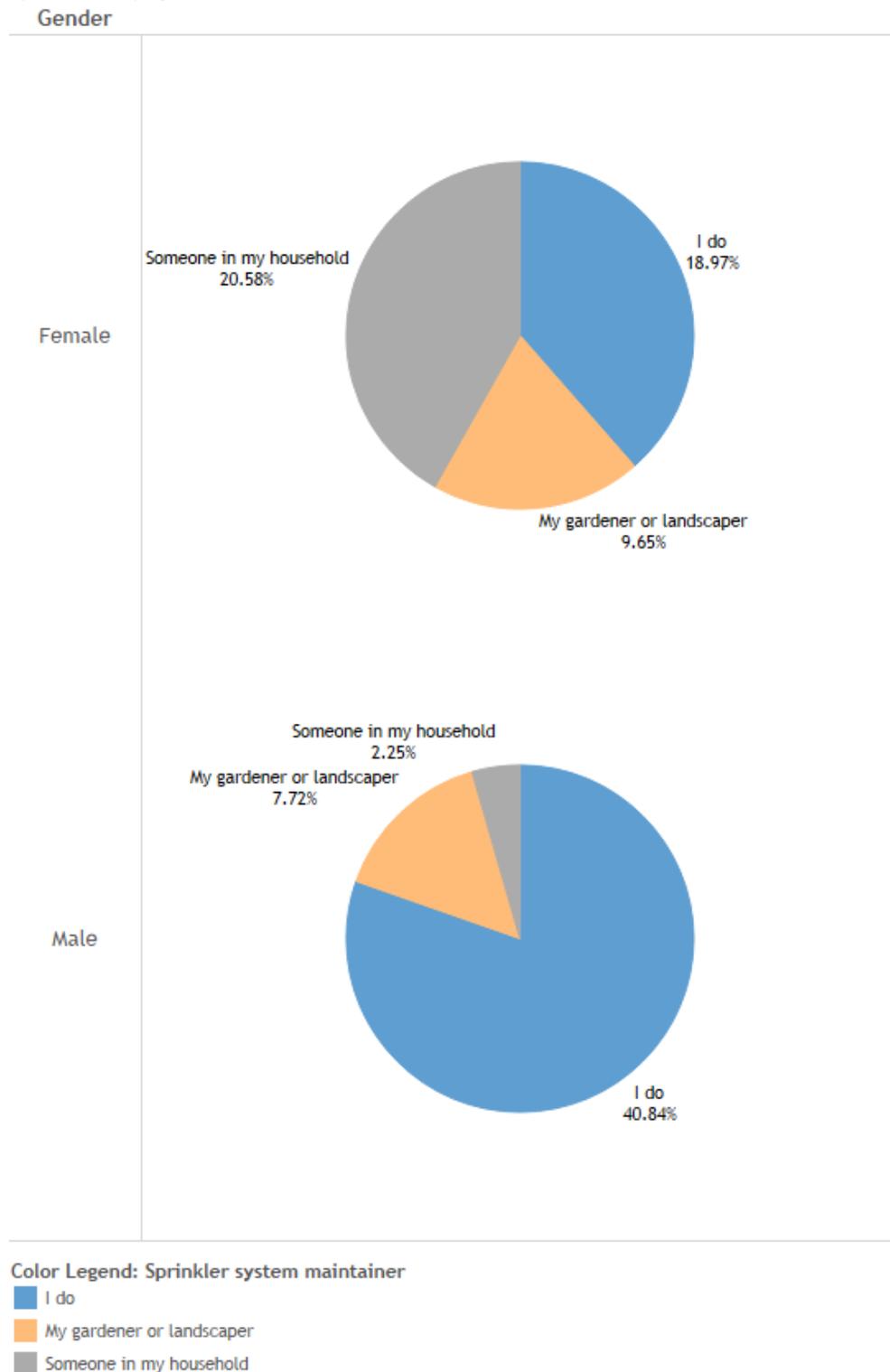
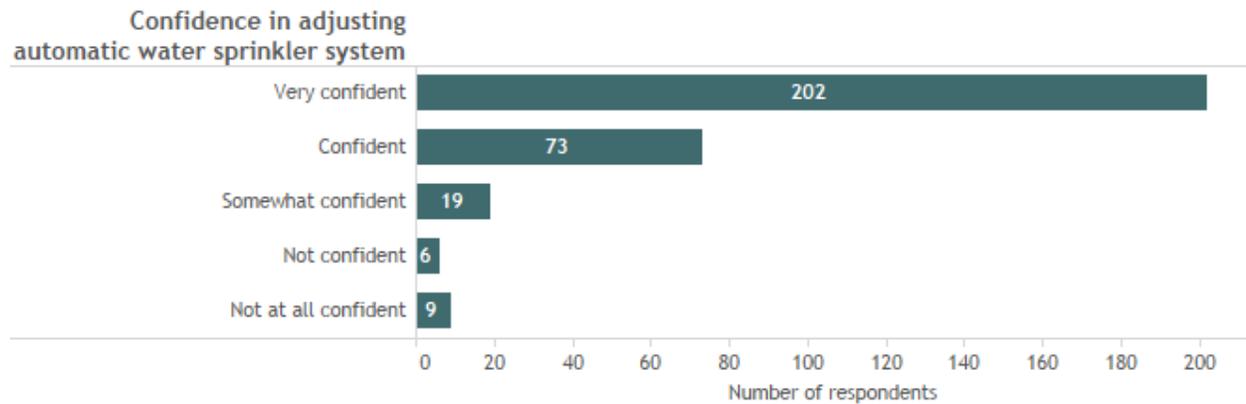


Figure 9. Confidence in adjusting automatic sprinkler system run time



Research has shown that one of the strongest predictors of future behavior is past behavior. In light of this fact, it bodes well for the Overwatering campaign that the phone survey results showed that residents had made adjustments to their sprinkler systems recently, about half of them within the past month and another 36% within the past year. See Figure 9 for more information. Similarly, as can be seen in Figure 10, last time it rained, approximately 74% of the sample made some sort of adjustment to reduce the watering time of their sprinkler system. A majority of these adjustments involved turning sprinklers off until rain stopped. These findings further underscore that Orange County residents have the technical know-how to manage their sprinkler systems and take the initiative to do so.

Figure 10. Last time automatic sprinkler system run time was adjusted

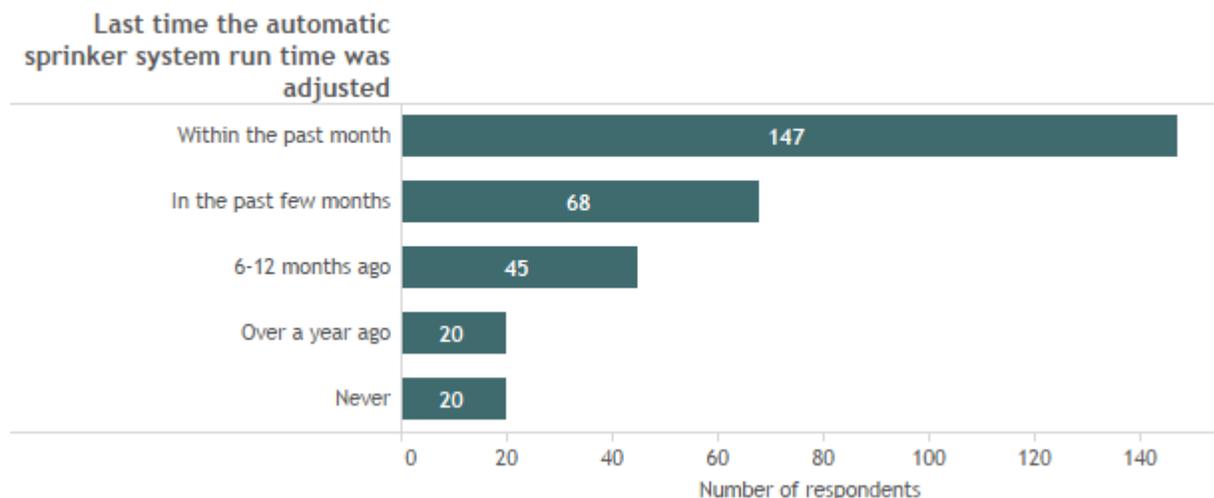
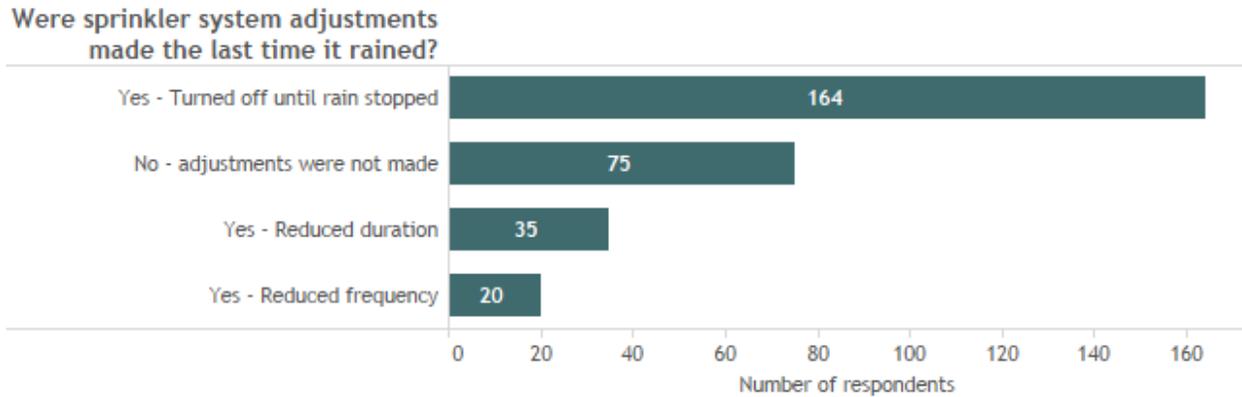


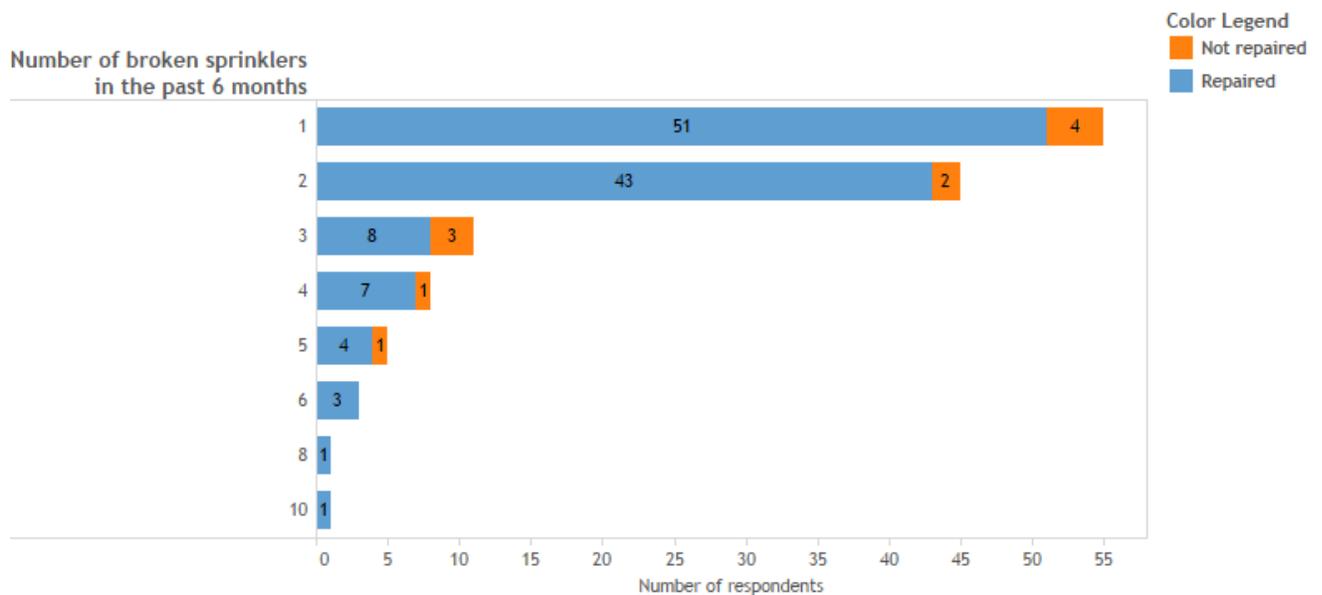
Figure 11. Number of participants who made adjustments made to automatic sprinkler system last time it rained



*If it's broke, they fix it*

A total of 129 residents had at least one broken sprinkler in the past six months. Almost every broken sprinkler was reportedly fixed! See Figure 11 for more details. Furthermore, many residents were do-it-yourself-ers (DIYers): 61% had the broken sprinklers repaired by someone in their household or did it themselves. Most of the remainder hired someone for repairs.

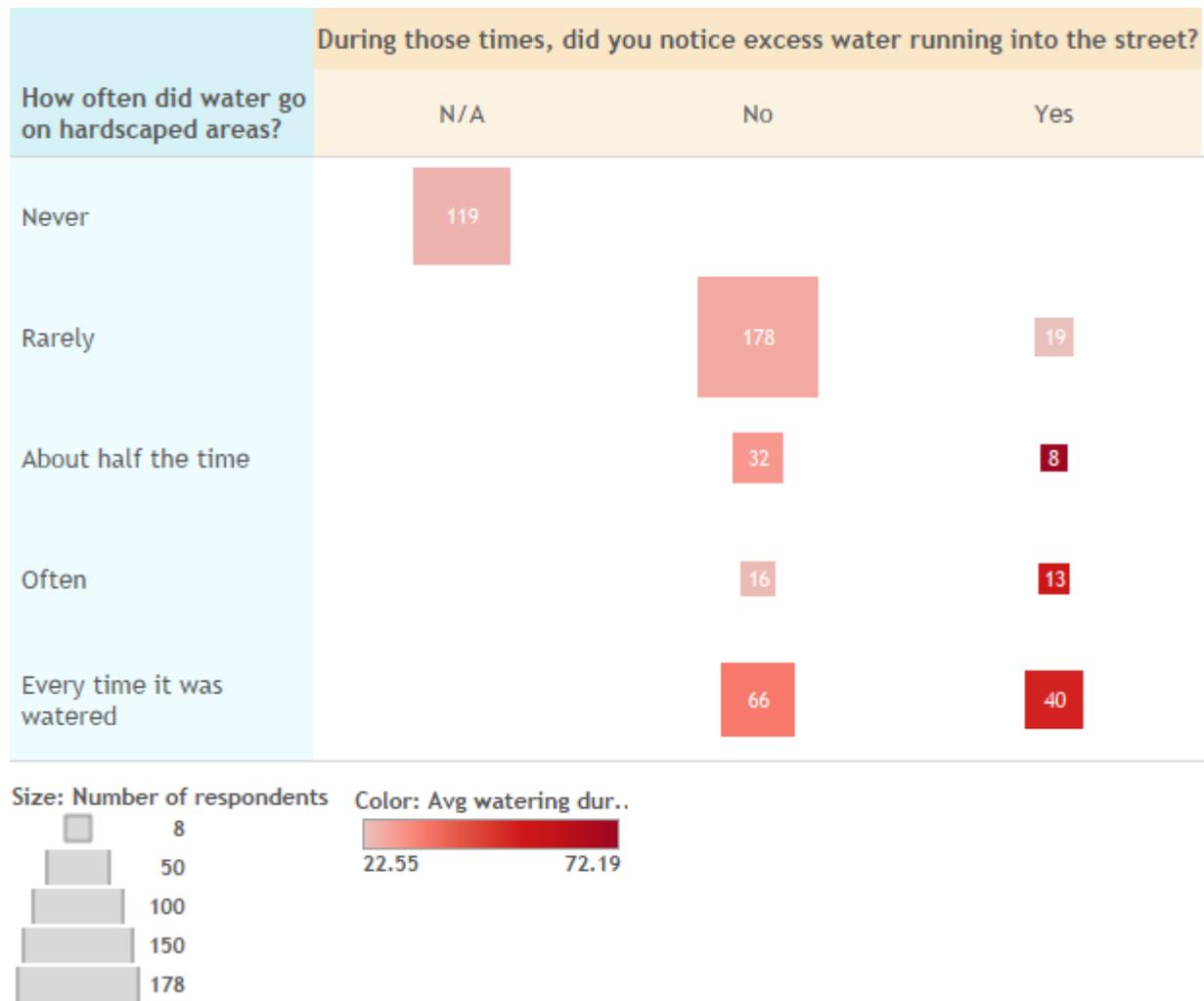
Figure 12. Number of broken sprinklers in past 6 months by number of broken sprinklers repaired in past 6 months



**Don't be THAT guy!**

Zooming back out to all participants, we wanted to find out how often they noticed water going on hardscaped areas. First of all, half the population do not even see their sprinklers running. Approximately 36% of the sample who did noticed water going onto hardscapes at least half the time their sprinklers ran. An additional 40% stated they noticed this “rarely”<sup>4</sup>. Among individuals who noticed water going onto hardscapes at all, 34% stated that they noticed excess water running onto the sidewalk/street. This is a relatively sizeable group (1 in 8 residents); especially considering that half of these reported excess water every time. See Figure 12 for additional information.

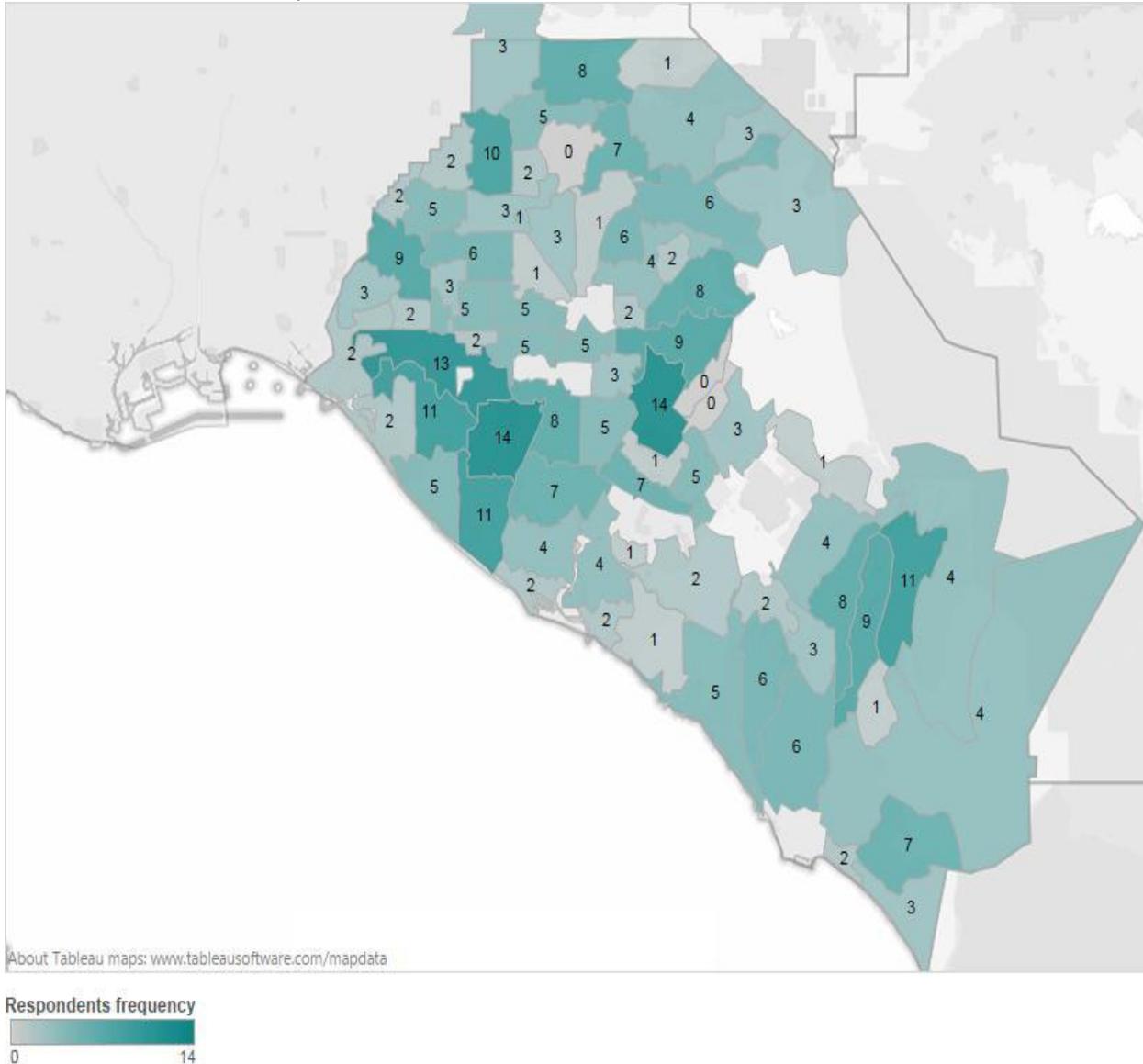
Figure 13. Number of participants who noticed excess water running into the sidewalk/street among those who noticed hardscapes being watered



<sup>4</sup> It is important to note that the majority of people with sprinkler systems (30%) cited that in the past month they “rarely” saw their sprinklers running and 20% indicated that they “never” saw them.

We also examined water running into streets by location. It appeared that the central area of the county had a relatively higher concentration of residents who reported noticing excess water running into the streets. Please refer to Figure 14 for details.

Figure 14. Number of residents who reported noticing excess water running onto sidewalks or streets, by ZIP code.



### Willingness to change

Over half of respondents were at least somewhat willing to reduce watering run time. Also, when examining willingness to reduce watering duration by current watering duration, we see a general trend (Figure 15) whereby those with relatively longer watering times seem to be more willing to reduce watering time.

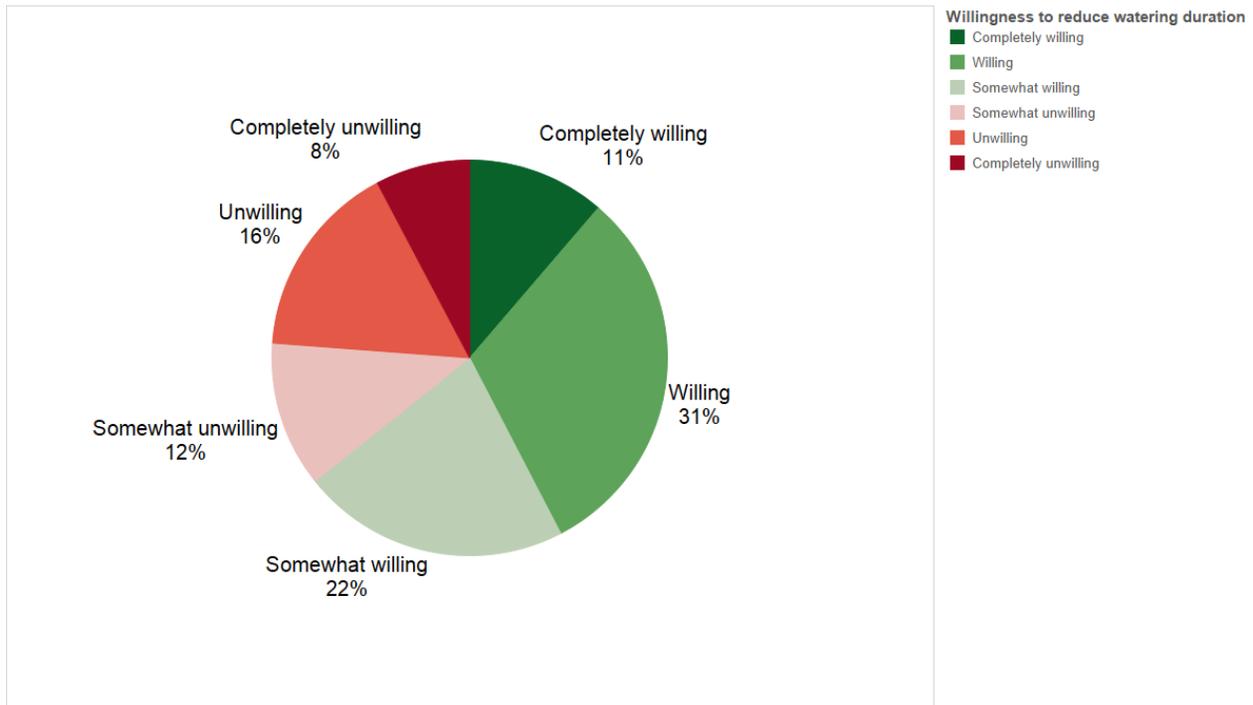
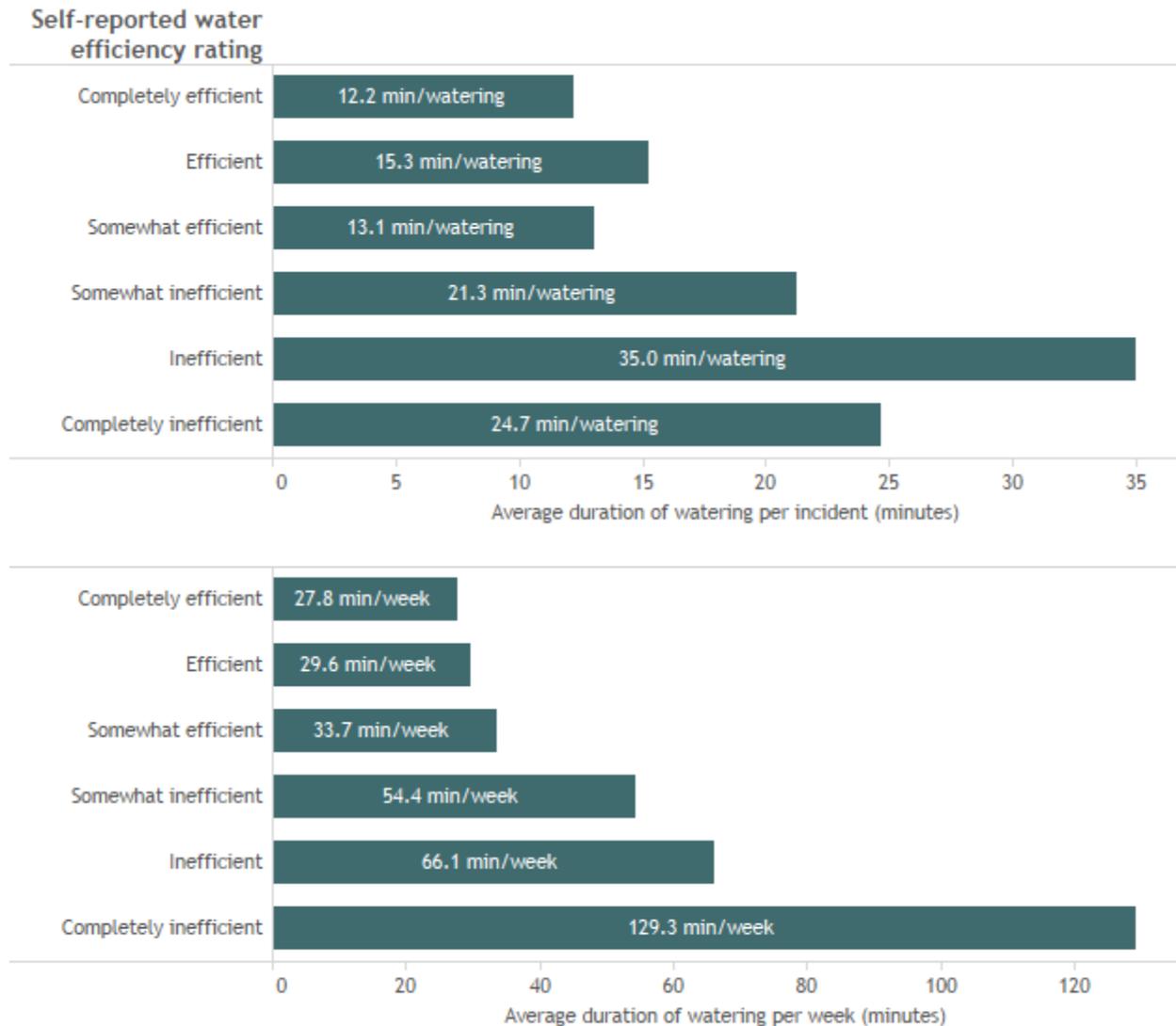


Figure 15. Number of participants willing to reduce watering duration (per incident) by current watering duration

### How efficient do you think you are?

Respondents were asked how efficient they perceived their outdoor lawn/garden watering practices to be. We examined their responses by current water duration as can be seen in Figure 14 on the following page. We see a general trend where watering duration seems to be inversely related to perceptions of efficiency. In other words, those who water for longer don't think they are more efficient, and those who do not water for a long time believe they are efficient. This indicates that OC residents are getting it right: they seem to have accurate insight about their watering practices.

Figure 16. Water efficiency perceptions by current watering duration



*Landscape of the landscape*

Participants reported the make-up of their outdoor areas. On average, nearly half of outdoor spaces (42%) were grass, and approximately 35% were hardscapes. An additional 17% was non-grass vegetation, and of this, just under half was drought-tolerant. Dirt and other landscaping accounted for smaller percentages of outdoor space. See Figure 15 for additional information.

To examine whether watering duration was related to proportion of grass coverage in yards, we also examined watering duration (per session and total per week) by percent of outdoor space that was covered by grass. There was no relationship

between percentage of grass and watering duration. See figures 16a and 16b for details.

Also, we plotted grass coverage by location. No clear pattern of grass coverage was evident. See Figure 17 for details.

Figure 17. Makeup of outdoor spaces

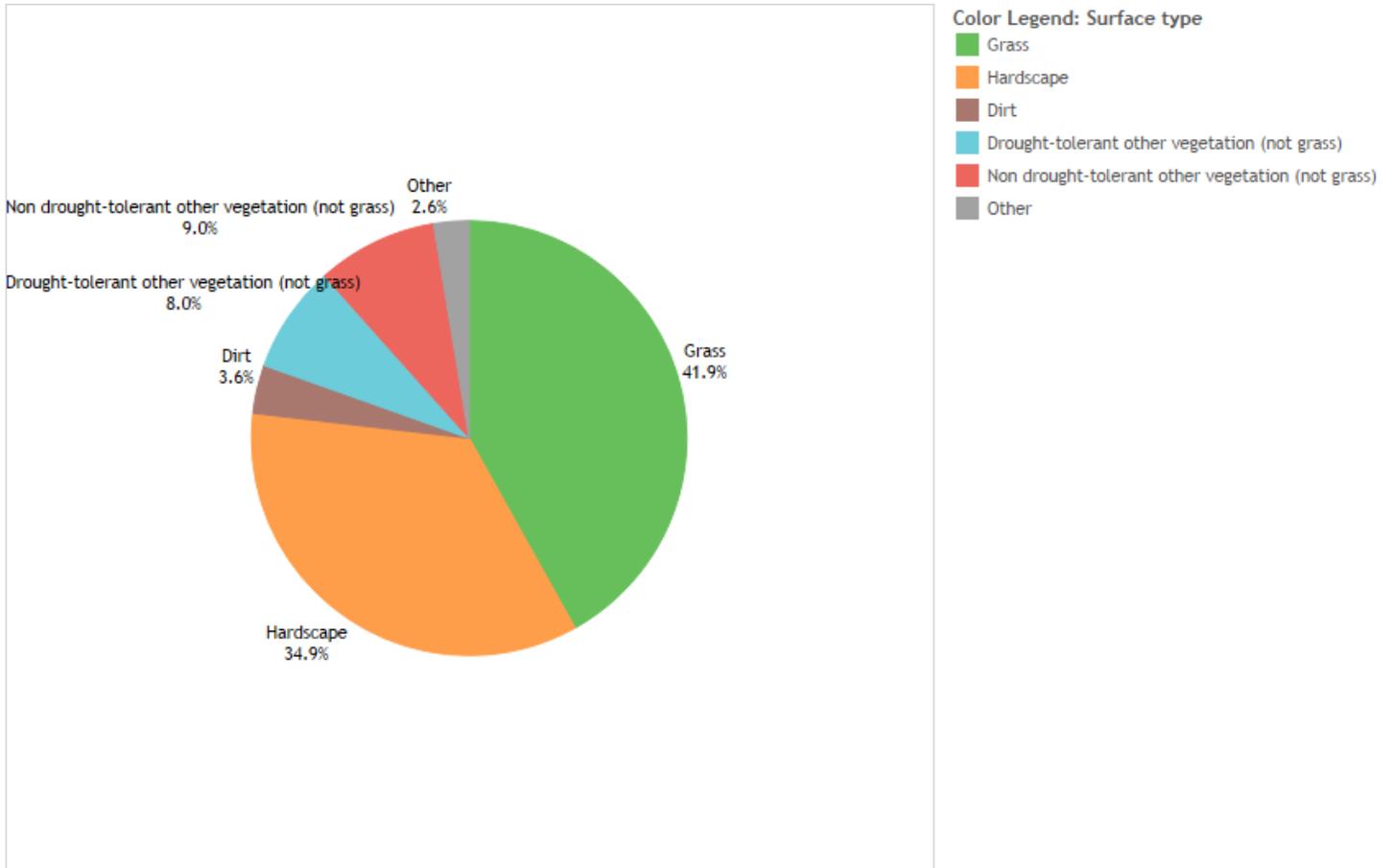


Figure 18a. Average weekly duration of watering (minutes) by percentage of lawn that is grass

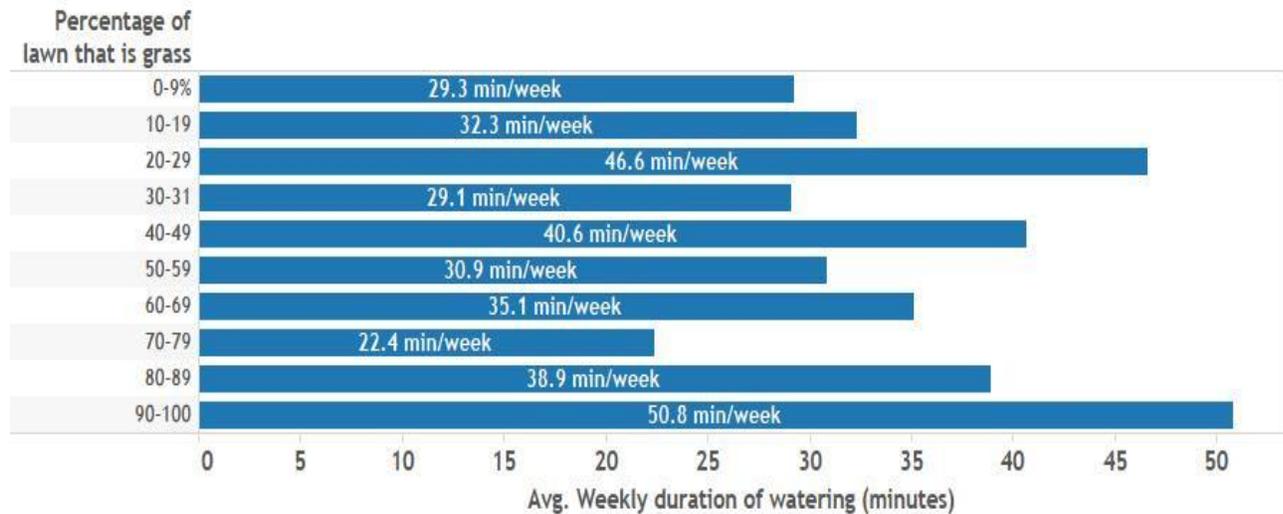


Figure 18b. Average session duration of watering (minutes) by percentage of lawn that is grass

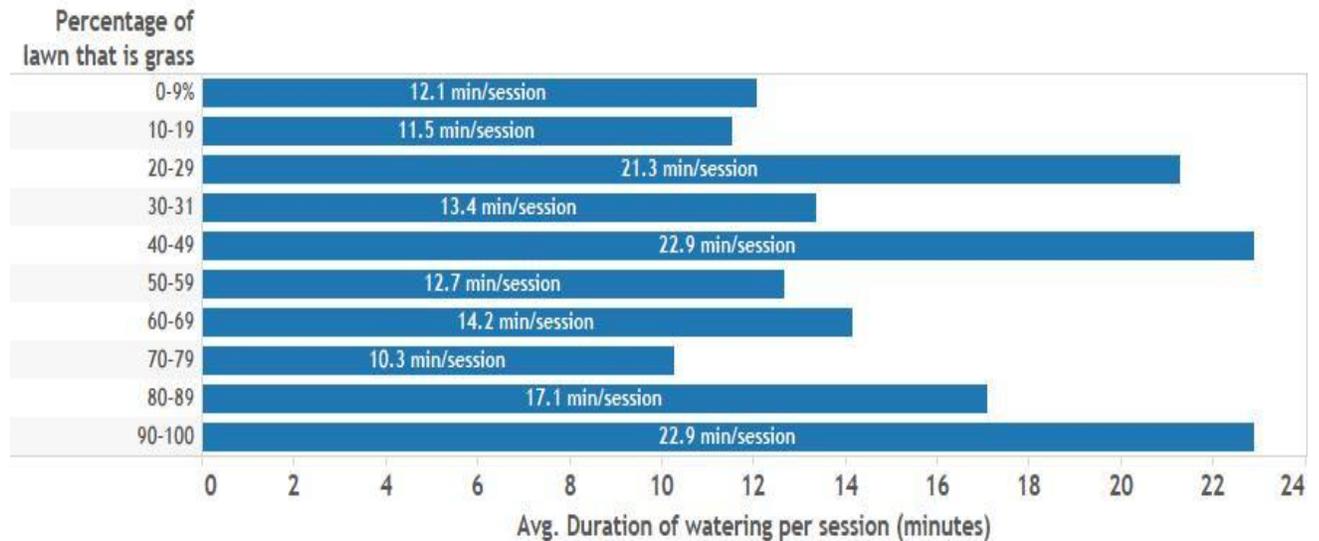
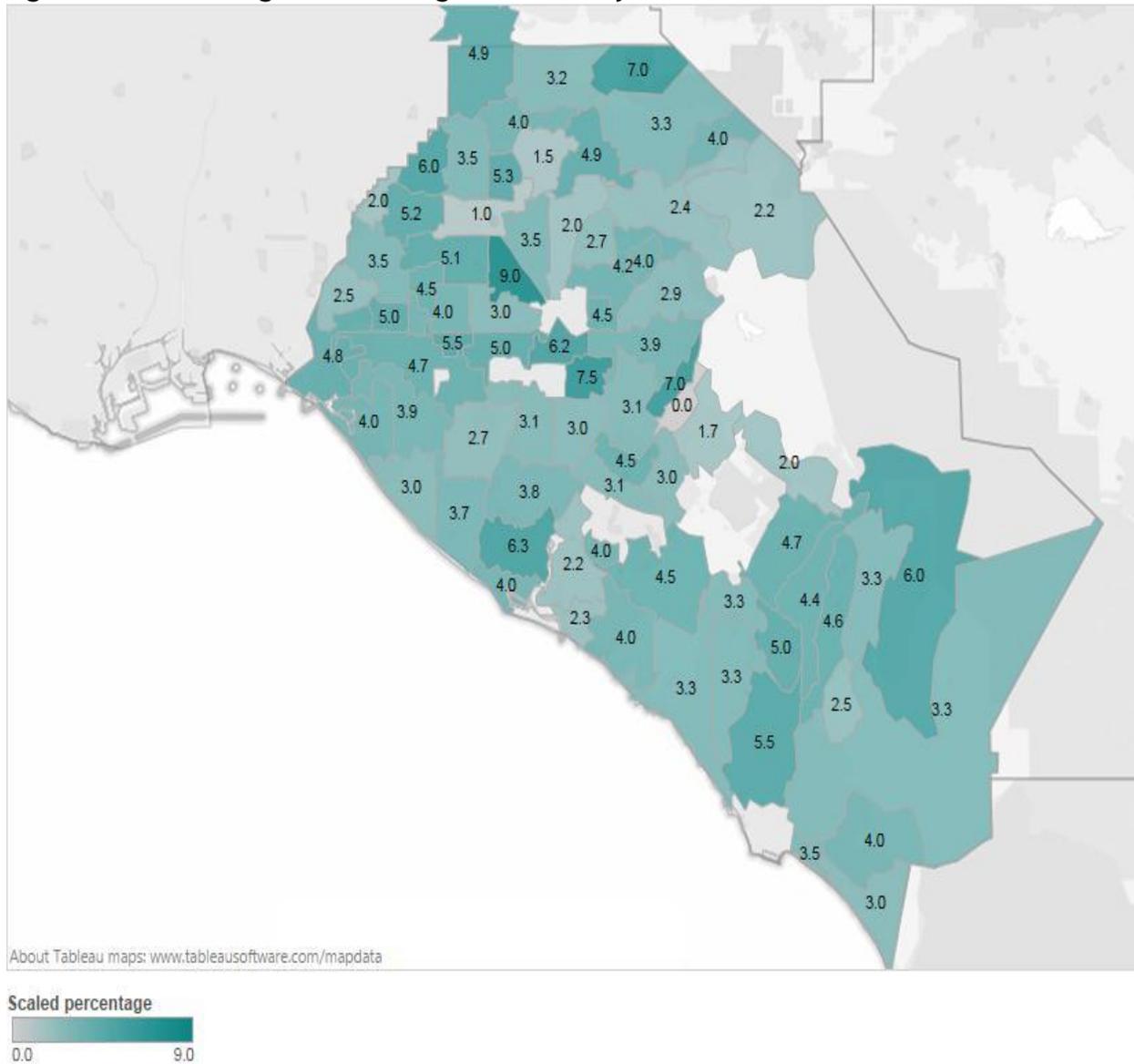


Figure 19. Percentage of lawn in grass scaled by ZIP



### Strengths & Limitations

This project had a number of strengths. First, the sampling procedure provided a representative sample of Orange County residents, so the results are likely to generalize to the Orange County population. As well, the survey was carefully constructed to assess a spectrum of important factors, including contextual issues, current engagement in BMPs, willingness to engage in BMPs in the future, and perceptions related to BMPs. This provides information to guide planning for the Overwatering Campaign, and will serve as a baseline against which Campaign results can be evaluated. The project had a number of limitations as well. First, the survey tool did not assess type of sprinkler system (e.g., drip, rotary, spray), which would have provided additional information about potential impact. Similarly, the survey did

not assess whether sprinkler systems were “smart” sprinklers that have automated functions. This information would have enabled us to better understand the extent to which residents were manually adjusting sprinklers at various times versus relying on “smart” sprinklers to automatically adjust (e.g., turn off when it rains). Future iterations of this type of work should include such questions.

## Conclusions

Below we briefly summarize the key findings of the baseline summary.

- The majority of respondents (78%) used automatic (61%) or manual (17%) sprinkler systems as the primary method to water their outdoor lawns or gardens.
- Regardless of watering method, the average watering duration was approximately 15 minutes per incidence and 34 minutes per week. Most participants (77%) watered 1-4 days/week. Frequency of watering appeared to be inversely related to watering duration.
- Focusing on households with sprinkler systems, when it comes to sprinkler maintenance, Orange County residents are Do-It-Yourselfers: 77% of respondents stated that they themselves or somebody in their households maintained their automatic sprinkler systems. Approximately half of the sample had adjusted their sprinklers in few months preceding the survey. Additionally, all respondents who reported having broken sprinklers in the past six months stated that all sprinklers had been repaired, and over half of these repairs were done by somebody in the respondents’ households. Given these findings, it is not surprising that respondents also reported a high level of confidence in adjusting their sprinkler systems. The evidence points to a DIY sprinkler system audience that has the awareness, technical knowledge, experience, and confidence needed to make direct adjustments to their sprinkler systems as part of the Overwatering campaign.
- Despite having ability for adjusting sprinklers, 26% did not do so the last time it rained.
- Household in the northern central part of the County appear to have hot spots of both watering duration and water running into the street compared to other areas within the County.
- Online outreach will be effective for all age groups, particularly younger ones. Home improvement stores and word-of-mouth are popular sources of information for older age groups. Overwatering campaign, approximately 36% of the total sample noticed water going on hardscapes at least half the time their sprinklers ran. An additional 40% stated they noticed this “rarely”. Among individuals who noticed water going onto hardscapes at all, a total of 80 stated that they noticed excess water running onto the sidewalk/street. Considering that half of these reported seeing excess water running onto the sidewalk/street every time their sprinklers ran, these results highlight the value of honing in on excess water running into the street as a target behavior

as part of the Overwatering Campaign. It is notable that half of all respondents reported not ever seeing their programmed sprinklers running.

- Regarding willingness to change watering behaviors irrespective of watering method, over half of the sample was at least somewhat willing to reduce their watering duration, and willingness rating appeared to roughly correspond to watering duration per watering incident. In other words, those with longer watering times (per incident) tended to have higher willingness ratings.
- Respondents reported how water-efficient they perceived their households to be. Efficiency perceptions appeared to be inversely related to watering duration per week: the more time spent watering, the less efficient respondents rated themselves. This shows that residents seem to have a fairly accurate sense of how water efficient or inefficient they are, and therefore we do not need to spend significant effort convincing them of their inefficiency.
- Participants' outdoor spaces consisted primarily of grass and hardscape. Of non-grass vegetation, just under half was drought-tolerant. Amount of grass in the landscape was not a predictor of how much the respondents watered.
- Internet reigned as the most common source where respondents obtained information about lawn and garden, with 36% of the sample selecting this as an option. The next most common source of lawn and garden information was home improvement stores, reported by 21% of the sample. Additionally, 19% of the sample reported obtaining their information from an "other" source, which open-ended responses revealed was mostly included nurseries and gardeners.

APPENDIX A  
SURVEY TOOL

Orange County Lawn & Garden Care Baseline Resident Phone Survey

**\*\*\*\*See Question 28: Include respondent phone number in their record for follow-up survey!!!!\*\*\*\***

Hello, my name is \_\_\_\_\_ and I'm calling on behalf of the County of Orange. We are conducting a survey of residents in order to improve the community. This is not a sales call. Your responses would be used to compute some statistics for the County to better understand residents' needs and shape future program development. Plus, survey respondents will be entered into a drawing to win \$25 to Orange County's famous waffle house restaurant- Bruxie. This will take \_\_\_ minutes of your time. You may skip any question you are not comfortable with, and your answers will be kept confidential and anonymous.

*If respondent refuses to participate:*

**Ok, I understand you are unable to participate right now. Thank you for your time.**  
*[hang up].*

*If respondent agrees to participate:*

**Great! Thank you so much for your participation. I'm going to start by asking you a few questions about yourself and your household.**

*Unless otherwise indicated, the answer choices will not be read aloud. Questions will be posed in an open-ended fashion and the answer choices listed in all caps are there to help the interviewer code the responses and provide prompting to respondents for clarity as needed. Open-ended questions will yield more accurate information by avoiding leading questions/answer choices.*

**1. What language are you most comfortable speaking?**

ENGLISH  
SPANISH  
VIETNAMESE  
MANDARIN  
KOREAN  
TAGALOG  
OTHER (*DESCRIBE*)

**2. Are you at least 18 years of age?**

YES (*continue*)  
NO (*ask to speak to head of household >=18 years of age*)  
REFUSED (*terminate*)

**3. Are you a resident of Orange County?**

YES (*continue*)

NO (*terminate*)  
Refused (*terminate*)

**4. What is your ZIP code?**

\_\_\_\_\_ (*enter 5-digit ZIP*)

**5. Do you have a lawn or garden at your residence?**

NO (*terminate*)  
YES (*continue*)

**6. What is the primary method you use to water your lawn?**

WATERING CAN  
PROGRAMMABLE OR AUTOMATIC SPRINKLER SYSTEM  
MANUAL SPRINKLER(S) (includes sprinklers embedded in the ground that need to be turned on and off for each use AND sprinkler attachments on hoses)  
HAND HELD HOSE  
I DON'T WATER MY LAWN/GARDEN (*terminate*)

**7. (DISPLAY IF PEOPLE ANSWERED "PROGRAMMABLE OR AUTOMATIC SPRINKLER SYSTEM" FOR QUESTION 6)**

**Who controls or maintains your home's sprinkler system? (SELECT ALL THAT APPLY)**

I DO  
SOMEONE ELSE IN MY HOUSEHOLD  
MY GARDENER/LANDSCAPER  
MY HOA (*terminate*)  
MY LANDLORD (*terminate*)  
OTHER (*terminate*)

*Interviewer, if respondent does not meet eligibility criteria, read the following to terminate call:*

**Thank you for agreeing to participate. Unfortunately, we are only able to include households located in Orange County and we are only able to interview adults over the age of 18 years who have a lawn or garden on their property. At this time, we are unable to continue the interview. Thank you very much for your time.**

*Interviewer, if respondent meets eligibility criteria, read the following before continuing:*

**Great, based on the information you've provided, you are eligible to participate. The next few questions I'll ask you are related to your participation in a number of household activities.**

**8. To what extent do you believe your household's lawn/garden watering practices over the past few months have been water efficient? (read response options aloud)**

COMPLETELY INEFFICIENT      SOMEWHAT SOMEWHAT EFFICIENT      COMPLETELY  
INEFFICIENT                      INEFFICIENT EFFICIENT                      EFFICIENT

**9. How often is your home lawn/garden watered** (either by you, someone in your household or automatic sprinkler system)? (read response options aloud)

DON'T KNOW  
2 MORE TIMES / DAY  
ONCE/DAY  
5-6 DAYS/WEEK  
3-4 DAYS/WEEK  
1-2 DAYS/WEEK  
LESS THAN ONCE/WEEK

**10. What is the duration of watering?**

\_\_\_ MINUTES  
DON'T KNOW

**11. When your lawn has been watered in the past few months, how often did water go on hardscaped areas such as a sidewalk or driveway?** (read response options aloud)

EVERY TIME IT WAS WATERED  
OFTEN  
ABOUT HALF THE TIME  
RARELY  
NEVER  
DON'T KNOW

**12. (DISPLAY IF RESPONSE TO Q11 WAS NOT "NEVER" OR "DON'T KNOW") During those times, did you ever notice excess water running into the street?**

NO  
YES

**13. To what extent do you approve or disapprove when you see water from a hose or sprinkler system overflowing onto the sidewalk/street?** (read response options aloud)

STRONGLY DISAPPROVE    SOMEWHAT    NEITHER APPROVE    SOMEWHAT APPROVE    STRONGLY  
DISAPPROVE                      DISAPPROVE    NOR DISAPPROVE    APPROVE                      APPROVE

**14. (DISPLAY IF Q6 RESPONSE WAS 'PROGRAMMABLE SPRINKLER SYSTEM') How many broken sprinklers have you had on your property in the past 6 months?**

(NUMERIC RESPONSE- 0 AND UP)  
DON'T KNOW

**15. (DISPLAY IF Q14 RESPONSE WAS >0) How many of those broken sprinklers were repaired?**

(NUMERIC RESPONSE - 0 AND UP)  
DON'T KNOW

**16. (DISPLAY IF Q15 RESPONSE WAS >0) How were they repaired?**

HIRED SOMEONE TO REPAIR

MYSELF OR SOMEONE AT MY HOUSEHOLD TOOK CARE OF IT  
SPONTANEOUSLY REPAIRED THEMSELVES  
OTHER  
DON'T KNOW

**17. (DISPLAY IF Q6 RESPONSE WAS 'PROGRAMMABLE SPRINKLER SYSTEM') To what extent are you confident that you or someone in your household could adjust the running time of your sprinkler system? (read response options aloud)**

NOT AT ALL CONFIDENT  
NOT CONFIDENT  
SOMEWHAT CONFIDENT  
CONFIDENT  
VERY CONFIDENT

**18. (DISPLAY IF Q6 RESPONSE WAS 'PROGRAMMABLE SPRINKLER SYSTEM') When is the last time you or someone in your household adjusted your sprinkler system settings? (read response options aloud)**

WITHIN THE	IN THE PAST	6-12	OVER A	NEVER
PAST MONTH	FEW MONTHS	MONTHS AGO	YEAR AGO	

**19. (DISPLAY IF Q6 RESPONSE WAS 'PROGRAMMABLE SPRINKLER SYSTEM') The last time it rained, were any adjustments made to your sprinkler settings?**

YES- THEY WERE ADJUSTED TO WATER FOR LESS TIME (REDUCED DURATION)  
YES- THEY WERE ADJUSTED TO SKIP A WATERING OR TWO (REDUCED FREQUENCY)  
YES- THEY WERE ADJUSTED TO STOP WATERING UNTIL IT STOPPED RAINING (TURNED OFF UNTIL RAIN STOPPED)  
NO ADJUSTMENTS WERE MADE  
OTHER  
DON'T KNOW

**20. (DISPLAY IF Q6 RESPONSE WAS 'PROGRAMMABLE SPRINKLER SYSTEM') In the past month, how many times have you seen your sprinkler system running? (read response options aloud)**

EVERY TIME IT RAN  
OFTEN  
ABOUT HALF THE TIME  
RARELY  
NEVER

**21. How willing are you to reduce your watering run time? (read response options aloud)**

Completely	Unwilling	Somewhat	Somewhat	Willing	Completely
Unwilling		Unwilling	Willing		Willing

**22. Does your hose have a trigger or nozzle attached to it** *(any device that controls the amount of water coming out of the hose)?*

YES

NO

DON'T KNOW

**23. What % of your outdoor space is made up of:**

a. Grass? \_\_\_\_\_

b. Hardscape? \_\_\_\_\_

c. Other vegetation (not grass)? \_\_\_\_\_

Of this other vegetation what, % is

C1. Drought tolerant? \_\_\_\_ C2. Not drought tolerant? \_\_\_\_ C3. Don't know \_\_\_\_

d. Dirt? \_\_\_\_\_

e. Other? \_\_\_\_\_

(NUMERIC RESPONSE- 0 -100 *(Interviewer, ensure that a-e add up to 100. Ensure that C1-C3 add up to 100).*)

DON'T KNOW

**Thank you for your responses. We have less than 1 minute left. For the final questions, I'd like to ask you a little bit about yourself.**

**24. If you wanted information on lawn or garden care, where might you get this information?**

TELEVISION

RADIO

NEWSPAPER

MAGAZINES

INTERNET

EMAIL

SOCIAL MEDIA (E.G., FACEBOOK, TWITTER)

FRIENDS/RELATIVES/NEIGHBORS

HOME IMPROVEMENT STORE

COMMUNITY EVENTS

MAIL

OTHER (DESCRIBE)

NONE OF THE ABOVE

**25. How would you describe your residence?** *(read the responses aloud)*

SINGLE-FAMILY HOME AFFILIATED WITH A HOMEOWNERS ASSOCIATION

SINGLE-FAMILY HOME NOT AFFILIATED WITH A HOMEOWNERS ASSOCIATION

APARTMENT/CONDO/TOWNHOME

MOBILE HOME

OTHER *(DESCRIBE)*

**26. Do you own or rent this residence?**

OWN

RENT

OTHER (*DESCRIBE*)

**27. In what year were you born?**

\_\_\_\_\_ (*enter 4-digit year*)

**28. Agreement to be contacted again**

I would like to get your permission to contact you again later this year as part of a follow-up to Orange County's study of lawn and garden maintenance. The follow-up survey will take about 5 minutes and is a very important part of the project. I would not share your information with anybody outside of the project team. Would it be ok if I called you once more for this purpose?

YES (write in phone number)

NO

**Gift card raffle**

We're done! Thank you for participating in the survey. Would you like to be entered into the raffle to win \$25 to Bruxie, Orange County's famous Waffle restaurant located in the City of Orange? If so, please tell us your first name and best phone number where we can reach you so we can contact you if you win. Your name and phone number will be kept confidential and will not be shared with any 3<sup>rd</sup> parties.

First Name: \_\_\_\_\_ Phone Number: \_\_\_\_\_

*(randomly select 50% of participants and read the following statement)*

**Randomized treatment group assignment**

We are part of the Orange County Stormwater Program and we are running a program that helps Orange County residents manage their lawn and garden. Would you be interested in receiving some information from the program? We would simply be sending a few emails with tips on lawn care. Some emails would also provide information about how you can win prizes like gift cards and garden care items, rebate offers, and other ways to get involved in the program if you are interested. You would not be obligated to participate in anything, just whatever you would find useful to yourself and your household. You could decide to stop receiving emails at any time. Can I get your email for this purpose?

Email: \_\_\_\_\_

**ALL: Thank you very much for your time today, and for your service to the County. Your answers will help in developing programs for Orange County residents in the near future. Have a wonderful day! ☺**

APPENDIX B  
SURVEY AVERAGES/FREQUENCIES

**B.Q1: What language are you most comfortable speaking?**

Language	Frequency	Percentage
English	450	89.1%
Spanish	39	7.7
Vietnamese	6	1.1
Mandarin	1	0.2
Korean	0	0
Tagalog	0	0
Other	8	1.6
Refused	1	0.2

**B.Q6.1: What is the primary method you use to water your lawn?**

Method	Frequency	Percentage
Watering can	4	0.8%
Automatic sprinkler system	311	61.6
Manual sprinklers	82	16.2
Hand held hose	104	20.6
Other	4	0.8

**B.Q6.2: What is the primary method you use to water your lawn? (including terminations)**

Method	Frequency	Percentage
Watering can	4	0.8%
Automatic sprinkler system	311	59.4
Manual sprinklers	82	15.6
Hand held hose	104	19.8
Other	4	0.7
Don't water ( <i>terminated</i> )	19	3.6

**B.Q7.1: Who controls or maintains your home's sprinkler system?**

Controls/maintains	Frequency	Percentage
I do	186	59.8%
Someone else in my household	71	22.8
My gardener	54	17.4
My HOA, landlord, or other	0	0.0

**B.Q7.2:** Who controls or maintains your home's sprinkler system? (including terminations)

Controls/maintains	Frequency	Percentage
I do	186	52.7%
Someone else in my household	71	20.1
My gardener	54	15.3
My HOA, landlord, or other ( <i>terminated</i> )	42	11.9

**B.Q8:** To what extent do you believe your household's lawn/garden watering practices over the past few months have been water efficient?

Beliefs	Frequency	Percentage
Completely inefficient	8	1.6%
Inefficient	15	3.1
Somewhat inefficient	24	4.9
Somewhat efficient	95	19.4
Efficient	224	45.7
Completely efficient	124	25.3

**B.Q9:** How often is your home lawn/garden watered (either by you, someone in your household or automatic sprinkler system)?

How often	Frequency	Percentage
Two times a day	8	1.6%
Once a day	69	13.7
5-6 days a week	15	3.0
3-4 days a week	177	35.0
1-2 days a week	193	38.2
Less than once a week	27	5.3
Don't know/refused	16	3.2

**B.Q10a:** What is the duration of watering per watering incident? (minutes)

Average	Low	High	Median
15.0	1	245	10

**B.Q10b:** Duration of watering per watering incident frequency table

Duration (minutes)	Frequency	Percentage
0-5	158	34.9%
6-10	135	29.8
11-15	61	13.5
16-20	34	7.5
21-30	35	7.7
31-40	5	1.1
41-50	1	0.2
51-100	18	4.0
100+	6	1.3

**B.Q11:** When your lawn has been watered in the past few months, how often did water go on hardscaped areas such as a sidewalk or driveway?

How often	Frequency	Percentage
Every time it was watered	106	21.0%
Often	29	5.7
About half the time	41	8.1
Rarely	197	39.0
Never	119	23.6
Don't know/refused	13	2.6

**B.Q12:** During those times, did you ever notice excess water running into the street?

Noticed	Frequency	Percentage
Yes	80	21.4%
No	292	78.3
Refused	1	0.3

**B.Q13:** To what extent do you approve or disapprove when you see water from a hose or sprinkler system overflowing onto the sidewalk/street?

Extent	Frequency	Percentage
Strongly disapprove	177	35.0%
Disapprove	173	34.3
Somewhat disapprove	67	13.3
Neither approve or disapprove	60	11.9
Somewhat approve	9	1.8
Approve	6	1.2
Strongly approve	4	0.8
Refused	9	1.8

**B.Q14:** How many broken sprinklers have you had on your property in the past 6 months? (n=303)

**B.Q15:** How many of those broken sprinklers were repaired? (n=129)

Number of broken sprinklers per respondent	Number of respondents	Percentage who said yes to having repaired sprinklers	Percentage of sprinklers that got repaired
0	170	N/A	N/A
1	56	93.8	93.8
2	47	91.5	91.5
3	11	72.7	72.7
4	9	77.8	77.8
5+	10	90.0	83.6

**B.Q16:** How were they repaired?

Method	Frequency	Percentage
Hired someone to repair	35	26.9%
Myself or someone at my household took care of it	83	63.8
Spontaneously repaired themselves	2	1.5
Other	8	6.2
Don't know/refused	2	1.5

**B. Q17:** To what extent are you confident that you or someone in your household could adjust the running time of your sprinkler system?

Extent	Frequency	Percentage
Not at all confident	9	2.9%
Not confident	6	1.9
Somewhat confident	19	6.1
Confident	73	23.5
Very confident	202	65.0
Refused	2	0.6

**B. Q18:** When is the last time you or someone in your household adjusted your sprinkler system settings?

When	Frequency	Percentage
Within the past month	147	47.3%
In the past few months	68	21.9
6-12 months ago	45	14.5
Over a year ago	20	6.4
Never	20	6.4
Refused	11	3.5

**B. Q20:** In the past month, how many times have you seen your sprinkler system running?

Times	Frequency	Percentage
Every time it ran	49	15.8%
Often	53	17.0
About half the time	42	13.5
Rarely	94	30.2
Never	64	20.6
Refused	9	2.9

**B. Q21:** How willing are you to reduce your watering run time?

Willingness	Frequency	Percentage
Completely willing	37	7.3%
Unwilling	77	15.2
Somewhat unwilling	57	11.3
Somewhat willing	105	20.8
Willing	149	29.5
Completely willing	54	10.7
Refused	26	5.1

**B. Q22:** Does your hose have a trigger or nozzle attached to it (any device that controls the amount of water coming out of the hose)?

Nozzle	Frequency	Percentage
Yes	422	83.6%
No	71	14.1
Refused	12	2.4

**B. Q23:** What percentage of your outdoor space is made up of:

Material	Average Percentage
Grass	39.7%
Hardscape	35.1
Other vegetation	17.4
Dirt	4.3
Other	3.5

**B.Q24:** If you wanted information on lawn or garden care, where might you get this information?

Media	Frequency	Percentage
Television	8	1.8%
Radio	0	0
Newspaper	6	1.3
Magazine	8	1.8
Internet	178	39.2
Email	0	0
Social media	0	0
Friends	46	10.1
Home improvement store	108	23.8
Community event	2	0.4
Mail	3	0.7
Other	95	20.9

**B.Q25:** How would you describe your residence?

Residence	Frequency	Percentage
Single family home (Homewoners' association)	126	25.6%
Single family home (NO homeowners' association)	325	66.1
Apartment/condo/townhome	22	4.5
Mobile home	13	2.6
Other	5	1.0

**B.Q26: Do you own or rent this residence?**

Ownership	Frequency	Percentage
Own	430	87.4%
Rent	60	12.2
Other	2	0.4

**B.Q27: In what year were you born? (Age; average = 58, Low =18, High =98)**

Age range	Frequency	Percentage
18-19	2	0.5%
20-29	21	5.1
30-39	40	9.7
40-49	75	18.2
50-59	92	22.3
60-69	82	19.9
70-79	60	14.5
80-89	36	8.7
90+	5	1.2

**B.Q28: Gender**

Gender	Frequency	Percentage
Male	250	49.6%
Female	254	50.4