Chapter 6: Public Education

6.1 Overview

This chapter discusses issues pertaining to public acceptance of water conservation and runoff reduction measures. Specific information is provided on:

- Evaluation approach, including development of ET controller + education and education-only BMPs
- Customer interaction
- Evaluation results, as measured through responses to pre- and post-intervention customer surveys

More detailed information is provided in Appendix F.

6.2 Evaluation Approach

The public acceptance evaluation was conducted to compare the effectiveness of proposed BMPs for ET controller technology + education and education only. There were three groups of R3 Study participants: 1) participants who had their home irrigation controllers replaced with an ET controller and who received educational materials, 2) participants who received educational materials only, and 3) control groups, who received no interventions. The retrofit participants were selected through random "cold knocking" and through letter solicitations that explained the study. The education group was self and randomly selected. Some of the education group participants voluntarily chose to participate in the study by replying to a letter. However, the majority was randomly selected through a door-to-door campaign.

6.2.1 ET Technology + Education (Retrofit Group)

For the R3 Study, existing sprinkler timers that are set manually by the homeowner were replaced with the radio controlled ET controller systems. Trained technicians were used to ensure successful installation because ET controllers require programming for each valve including area (size of yard or planter per valve), soil type (clay, sand, etc.), and landscape type (turfgrass, shrubbery, etc.). The remaining irrigation system was unchanged, including piping and sprinkler head configuration.

The participating ET technology retrofit group homes received a site evaluation and installation of an ET controller to manage the irrigation system. Additionally, the residents of these homes received information regarding environmentally sensitive landscape practices. The controllers were installed in 112 residential homes, two condominium associations' landscapes, two HOA landscapes, one pool/park setting, and 12 city street landscapes.

Public education materials were also provided, as described in Section 6.2.2.

6.2.2 Education Only

Educational materials were provided to both the retrofit and education-only groups. Public education consisted of an initial informational packet containing three items. The first item was an introductory letter that described the purpose of the packet. The second item was a booklet with irrigation, fertilization, and weed and pest control information. The centerfold of the booklet was a month-by-month guide to irrigating, fertilizing, and pesticide application suitable for posting near the sprinkler timer. Third, each homeowner was supplied a soil probe for measuring the water content of the landscaped soils. In addition to the initial packet, monthly reminders were mailed to each homeowner including landscape maintenance tips about irrigation system, watering schedule, fertilizing, and weed and insect control. Suggested sprinkler run times (for the non-ET sprinkler neighborhood) and fertilizer or pesticide application usage, including non-toxic alternatives, were also provided in the monthly newsletter. A representative collection of the public information tools used for the R3 Study is provided in Exhibits A through D at the end of this section.

6.2.3 Customer Interaction

Home residents were advised that if they had any problems with the controller or if the controller required any adjustments, they should call the water district for assistance. IRWD's customer service department telephone number was left on a sticker on the ET controller. All calls related to the ET controller were logged in separately and routed to the appropriate staff member for assistance. Table 6-1 shows the number of calls that were received from residential residents during the R3 study period.

Table 6-1
Calls from Residential Customers in R3 Study

April 2001	1	August 2001	13	December 2001	1	April 2002	2
May 2001	12	September 2001	4	January 2002	4	May 2002	3
June 2001	7	October 2001	5	February 2002	9	June 2002	6
July 2001	13	November 2001	3	March 2002	4	July 2002	2

Generally, there were four common types of calls: 1) customer misunderstanding the way the ET controllers were supposed to operate, 2) installation-related issues, 3) maintenance or system design issues, and 4) ET controller malfunctioning. These issues were addressed and resolved. (See Appendix F.)

.

6.3 Customer Surveys

This section describes pre-and post-intervention surveys developed to measure public acceptance.

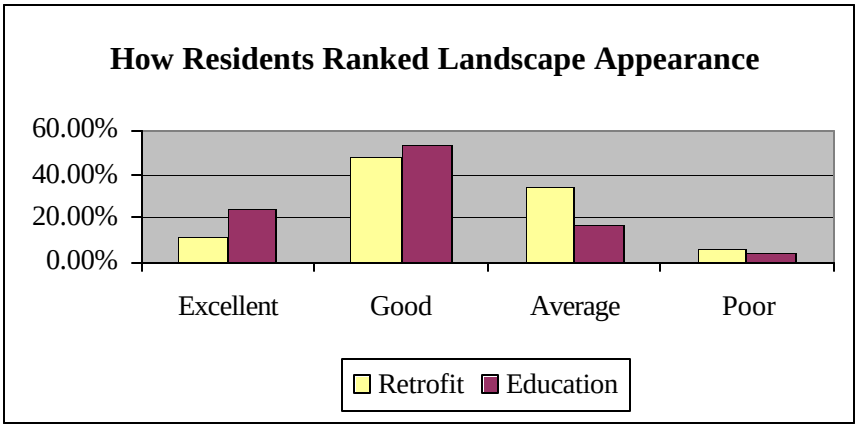
6.3.1 Pre-survey

The purpose of the pre-survey was to determine if the retrofit group and the education group had similar irrigation practices and attitudes. The pre-survey was distributed to the retrofit group while installation of the controller was taking place. Retrofit study participants were asked to fill

out the survey while staff was installing the controller. The education group received their survey as part of the initial educational packet that was randomly distributed to residents. Education group participants were provided a stamped addressed envelope to return their survey to the IRWD. Ninety-seven percent (109/112) of those that received a survey from the retrofit group mailed the survey back. Twenty-four percent (53/225) of residents in the education group mailed back a survey. Pre-survey results are tabulated in Appendix F and summarized below.

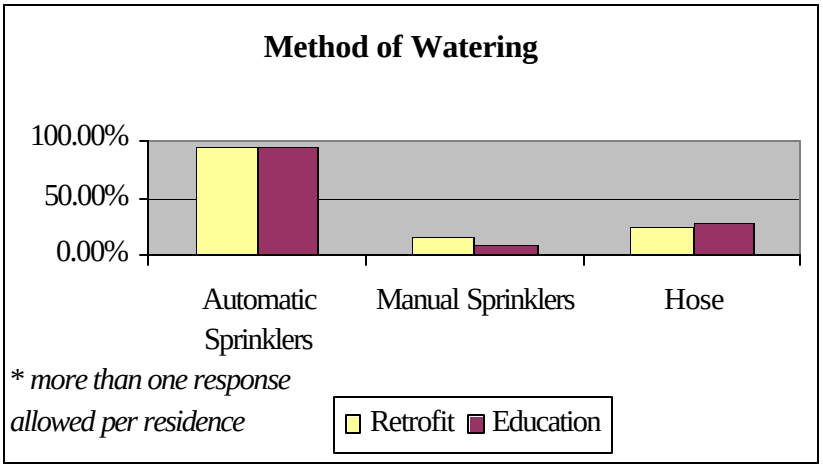
Figure 6-1 shows the responses of both of the groups. Similar responses were given. A majority of the residents in both groups believed that the appearance of the yard is average to good. It should be noted that the "excellent" response was selected by more of the education group than the retrofit group. One possible explanation for this response is that the staff was on-site while people were filling out their survey in the retrofit group.

Figure 6-1



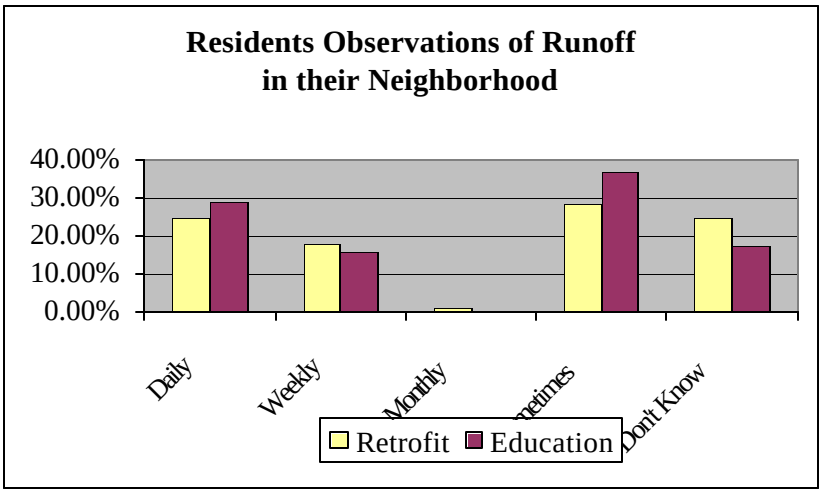
When residents were asked how they watered their lawn, the responses across groups were very similar. The percentage of people in the retrofit and education group that use automatic sprinklers, manual sprinklers, or a hose are similar. The survey shows that the retrofit and education groups have similar watering behaviors. As shown on Figure 6-2, the majority of the participants used automatic sprinklers. This is important because the R3 Study focuses on retrofitting the automatic irrigation controllers as a water management tool.

Figure 6-2



Residents were asked how often they observed runoff in their neighborhood. As presented on Figure 6-3, the data shows that residents in both groups have similar attitudes and views of urban runoff.

Figure 6-3



Residents were asked if they used fertilizers in their landscape, and chemicals to control pests or weeds. As shown on Figure 6-4, fertilizer use in both groups is almost the same. Results for chemical use were also similar for both groups. (See Figure 6-5.)

Figure 6-4

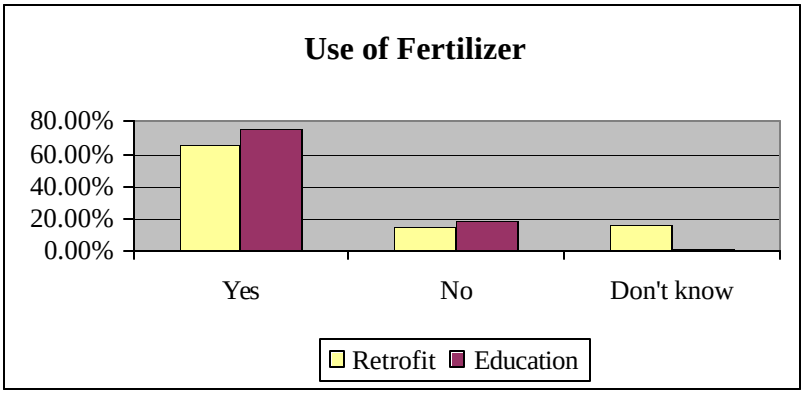
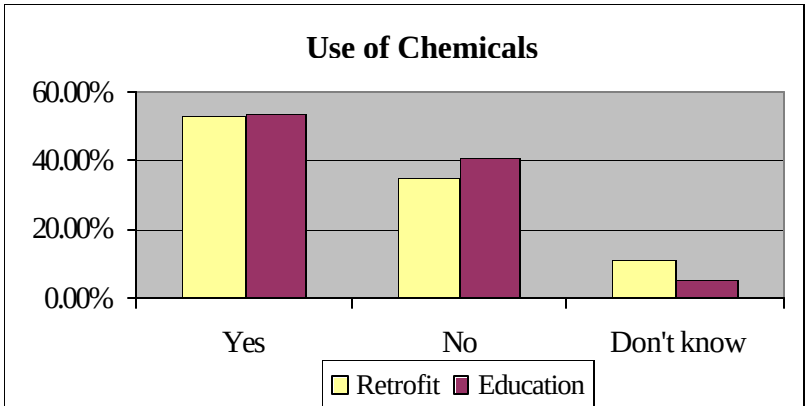


Figure 6-5



The purpose of the post-survey was to determine the attitudes of the study participants towards the ET controller and to determine if the education material had an impact on modifying behavior of the recipients. The post-survey was distributed to both of the groups through the mail. Twenty-three percent (52/225) of the education group participants responded to the survey, and forty-five percent (50/112) of the retrofit group participants responded. Post survey results are tabulated in Appendix F and summarized in the tables and text below.

6.3.2 Post-survey

Table 6-1 summarizes responses of the retrofit group compared to responses from the education group. The majority of the retrofit households acknowledged their satisfaction with the ET controller's performance and agreed that they would recommend the ET controller to their friends. It appears that the residents liked the controller and did not mind having someone else manage their irrigation-watering schedule. Data shows that households accepted the controller as a method of saving water, reducing runoff, and watering their landscapes. The survey shows that twice the number of retrofit households observed a decrease in their water bill than the education households did. A majority of the education households did not observe a change in their water bills. Data appears to show that the appearances of the retrofit landscapes were ranked equally with those landscapes that were part of the education group. It can therefore be concluded that the survey showed that the lower use of water did not create landscapes that were inferior to the education group. The customer's perception of a lower bill is important for the success of any long-term conservation program.

The retrofit and education group were asked if they were willing to pay for an ET controller signal. A majority of the households in both of the groups would not be willing to pay for an ET signal. The ET controller costs approximately $150.00 and the signal fee is $48 per year. The ET controller would be able to save less than 2 ccfs per month, which is a savings of about $14 per year. It appears that the savings in water use per year is not large enough for the water customer to pay for an ET signal.

Table 6-2
ET Controller Selected Responses

Responses to select survey questions	Retrofit group	Education group
Were satisfied with the ET controller	72 percent	n/a
Would recommend use of the ET controller to others	70 percent	n/a
Ranked the appearance of their yard as good to excellent	70 percent	69 percent
Not willing to pay for an ET signal	58 percent	69 percent
Saw decrease in water bills	44 percent	23 percent
Saw water bills unchanged	38 percent	63 percent

6.3.3 Education Only and Retrofit Group Responses

Table 6-3 summarizes the responses to the educational material by the retrofit group compared to the responses by the education group. Samples of these educational materials provided for participants in the R3 Study are presented on the following pages as Exhibit A through Exhibit D. Only half of the education households acknowledged that they sometimes or most of the time would change the settings on their controller according to ET via the monthly letter's (Exhibits A and B) suggested schedule. Monthly mailings also provided monthly landscape maintenance tips (Exhibits C and D). Here, the majority of the households in both of the groups liked the tips on the irrigation checks and fertilization sections. Although most people read these sections, a vast majority (80 percent) of households in both of the groups did not change their use of pesticides, herbicides, or fertilizers.

In addition to the education materials, a soil probe was given to both groups at the beginning of the study. A soil probe is a tool that takes a soil sample and enables the user to see the amount of moisture available to the plants and its depth. This allows the user of the soil probe to determine if the plants require more or less irrigation. More than half of the households in both groups only used the soil probe once or not at all. The majority of the people never used the soil probe at all. From a program point of view, people enjoy the education materials, but they appear to have little effect on modifying behavior.

Table 6-3
Education Material Selected Responses

Responses to select survey questions	Retrofit group	Education group
Have not changed their use of pesticides and herbicides	82 percent	81 percent
Have not changed their use of fertilizers	80 percent	73 percent
Did not use the soil probe or used it only once	76 percent	62 percent
Believed fertilization checks (part of monthly tips) were helpful	58 percent	44 percent
Believed irrigation checks (part of monthly tips) were helpful	42 percent	58 percent

6.4 Conclusions

While there were some customer service-related issues, the response to the ET controller was generally positive with 72 percent of participants indicating that they liked the controllers. This group also found that the controller irrigation either maintained or improved the appearance of their landscape. This is a classic win-win situation. The water district customers receive a desired benefit of a healthy landscape, and the community receives several important environmental benefits from the conservation of valuable and limited water resources and the reduction in dry season urban runoff.

Exhibit A
Monthly Landscape Maintenance Tips Letter Sent to "retrofit" customers in group 1001

May Landscape Maintenance Tips

The weather is getting warmer, the days are longer, and most of your plants are well into their growth stage. This is also the season for weeds and garden pests.

Irrigation System

- Watch for grass or plant growth that blocks sprinkler heads.
- Look for overspray onto streets and sidewalks and realign the sprinkler head.
- Look for dry spots and find the sprinkler problem to fix, such as a clogged head.
- Look for wet spots and potential sprinkler problems, such as a broken head.

Watering Schedule

- The Run-off Study Controller will adjust watering times as the weather changes.

Fertilizing

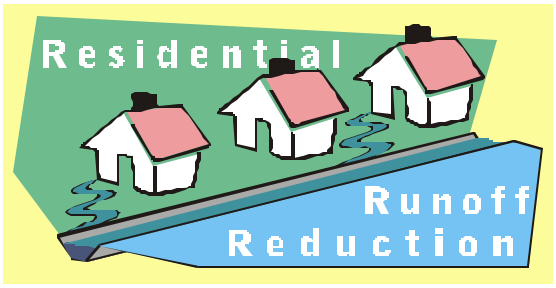
- Time to apply a slow release Nitrogen fertilizer to turf (apply only as directed on the bag or container).
- Keep fertilizer off of sidewalks, patio and streets.
- Do not wash fertilizer into drains or gutters.

Weed and Insect Control

- Watch for aphids and whiteflies. Wash insects off of leaves with a hard spray of water or spray with diluted soap solution.
- Apply mulch to control weeds, improve moisture retention and restore nutrients to the soil.
- Pick weeds now while they're still small.
- Use weed and insect chemicals only as directed on the containers.

This is a guide only. This guide does not hold public agencies responsible for the health and appearance of your home landscape.

Exhibit B
Monthly Landscape Maintenance Tips Letter (Sent to "education only" customers in group 1005)



May Landscape Maintenance Tips

The weather is getting warmer, the days are longer, and most of your plants are well into their growth stage. This is also the season for weeds and garden pests.

Irrigation System

- Watch for grass or plant growth that blocks sprinkler heads.
- Look for overspray onto streets and sidewalks and realign the sprinkler head.
- Look for dry spots and find the sprinkler problem to fix, such as a clogged head.
- Look for wet spots and potential sprinkler problems, such as a broken head.

Watering Schedule

- Start with this suggested schedule:
  Turf: 3 days per week, 3 cycles* of 3 minutes
  Shrubs and groundcover: 2 days per week, 3 cycles* of 3 minutes
- Reduce this amount in shaded areas.
- Use the soil probe to check the level of moisture beneath the surface before you water. If the soil is still moist 2 or more inches below the surface, wait another day to water.

Fertilizing

- Time to apply a slow release Nitrogen fertilizer to turf (apply only as directed on the bag or container).
- Keep fertilizer off of sidewalks, patio and streets.
- Do not wash fertilizer into drains or gutters.

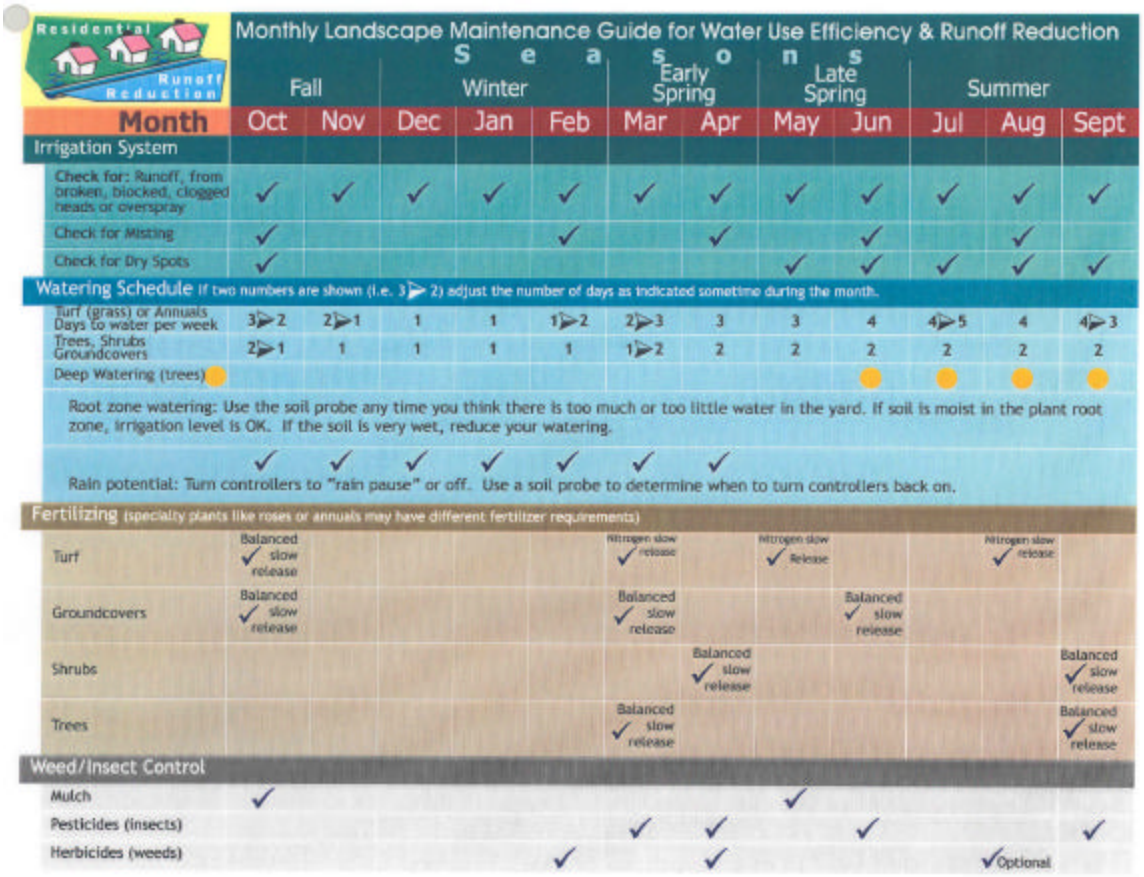
Weed and Insect Control

- Watch for aphids and whiteflies. Wash insects off of leaves with a hard spray of water or spray with diluted soap solution.
- Apply mulch to control weeds, improve moisture retention and restore nutrients to the soil.
- Pick weeds now while they're still small.
- Use weed and insect chemicals only as directed on the containers.

This is a guide only. This guide does not hold public agencies responsible for the health and appearance of your home landscape.

*By "cycling" your irrigation timer to turn on for the suggested number of minutes about an hour apart, you reduce runoff and gain deeper watering and healthier root growth.

Exhibit C
Monthly Landscape Maintenance Calendar (Provided for "retrofit" and "education only" customers)
(Actual size: 8.5 in. x 11in.)



Monthly Landscape Maintenance Guide for Water Use Efficiency & Runoff Reduction

Seasons	Fall		Winter			Early Spring		Late Spring		Summer		
Month	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept
Irrigation System												
Check for: Runoff, from broken, blocked, clogged heads or overspray	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Check for Misting	✓				✓		✓		✓		✓	
Check for Dry Spots	✓							✓	✓	✓	✓	✓
Watering Schedule If two numbers are shown (i.e. 3▶2) adjust the number of days as indicated sometime during the month.												
Turf (grass) or Annuals Days to water per week	3▶2	2▶1	1	1	1▶2	2▶3	3	3	4	4▶5	4	4▶3
Trees, Shrubs Groundcovers	2▶1	1	1	1	1	1▶2	2	2	2	2	2	2
Deep Watering (trees)									●	●	●	●
Root zone watering: Use the soil probe any time you think there is too much or too little water in the yard. If soil is moist in the plant root zone, irrigation level is OK. If the soil is very wet, reduce your watering.												
Rain potential: Turn controllers to "rain pause" or off. Use a soil probe to determine when to turn controllers back on.	✓	✓	✓	✓	✓	✓	✓					
Fertilizing (specialty plants like roses or annuals may have different fertilizer requirements)												
Turf	✓ Balanced slow release					✓ Nitrogen slow release		✓ Nitrogen slow Release			✓ Nitrogen slow release	
Groundcovers	✓ Balanced slow release					✓ Balanced slow release			✓ Balanced slow release			
Shrubs							✓ Balanced slow release					✓ Balanced slow release
Trees						✓ Balanced slow release						✓ Balanced slow release
Weed/Insect Control												
Mulch	✓							✓				
Pesticides (insects)						✓	✓		✓			✓
Herbicides (weeds)					✓		✓				✓ Optional	

Exhibit D
Monthly Landscape Maintenance Guide
Provided for "retrofit" and
"education only" customers
(Actual size 5.5 in. x 8.5 in)