

# Responsive Management™



## **MARKETING AND COMMUNICATIONS PLAN FOR THE CARSON RIVER WATERSHED**

**Conducted for the Carson River Coalition**

**by Responsive Management**

**2016**

# **MARKETING AND COMMUNICATIONS PLAN FOR THE CARSON RIVER WATERSHED**

**2016**

## **Responsive Management National Office**

Mark Damian Duda, Executive Director  
Martin Jones, Senior Research Associate  
Tom Beppler, Research Associate  
Steven J. Bissell, Ph.D., Qualitative Research Associate  
Amanda Center, Research Associate  
Andrea Criscione, Research Associate  
Patrick Doherty, Research Associate  
Gregory L. Hughes, P.E., Research Associate  
Tristan Kirkman, Research Associate  
Claudia Reilly, Survey Center Manager  
Alison Lanier, Business Manager

130 Franklin Street  
Harrisonburg, VA 22801  
540/432-1888  
E-mail: [mark@responsivemanagement.com](mailto:mark@responsivemanagement.com)  
[www.responsivemanagement.com](http://www.responsivemanagement.com)

## **Acknowledgments**

Responsive Management would like to thank Brenda Hunt and Courtney Walker of the Carson Water Subconservancy District (the coordination agency for the Carson River Coalition) for their input, support, and guidance on this project.



## TABLE OF CONTENTS

Introduction and Background on the Plan .....	1
Initial Planning Meeting .....	1
Scientific Survey of Carson River Watershed Residents .....	2
Extensive Crosstabulations of Survey Data .....	2
How to Interpret the Demographic Correlation Graphs .....	2
Statistical Analysis .....	4
Survey Results .....	5
Introduction and Methodology .....	5
Environmental Values .....	5
Knowledge of Watersheds.....	6
Health of the Carson River Watershed.....	7
Activities that Affect Watershed Conservation.....	9
Sources of Information .....	10
Major Findings .....	11
Marketing and Communications Approach.....	12
Process for Plan Development.....	15
How Messaging Can Change Behaviors.....	20
Feasibility of Techniques .....	22
Demographic and Marketing Information for Key Audiences.....	24
Carson River Watershed Survey Respondents .....	24
Hispanic Residents .....	26
Male Residents .....	28
Female Residents.....	30
Residents Younger Than the Median Age (52).....	32
Residents at the Median Age (52) or Older.....	34
Residents Whose Education Level is at Least a Bachelor’s Degree .....	36
Residents Whose Education Level is Less Than a Bachelor’s Degree .....	38
Residents Who Have Lived in the Area for the Median of 15 Years or Longer.....	40
Residents Who Have Lived in the Area Less Than the Median of 15 Years.....	42
Carson City Residents .....	44
Churchill County Residents.....	46
Douglas County Residents .....	48
Lyon County Residents .....	50
Census Data and Population Projections .....	52
Current Census Data.....	52
Population Projections.....	58
Findings and Recommendations.....	62
Message Selection Process.....	62
Awareness.....	64
Attitudes .....	68
Behaviors.....	71
Summary of Statistical Analyses.....	77
Message Delivery Methods .....	80

**TABLE OF CONTENTS (cont.)**

Message Recommendations .....87  
    Overall Marketing Theme .....87  
    Specific Messages .....88  
    Overarching Recommendations .....89  
Product Suggestions .....93  
Evaluation .....100  
    Future Assessments and Grading .....101  
Environmental Education Roundtable .....104  
Sources .....106  
Appendix A: Environmental Education Roundtable Documents .....109  
About Responsive Management .....130

## **INTRODUCTION AND BACKGROUND ON THE PLAN**

This plan was produced for the Carson River Coalition (CRC) by Responsive Management. The CRC is a large stakeholder group that acts as the steering committee for integrated watershed planning and management (the CRC is coordinated by the Carson Water Subconservancy District's Watershed Program). The plan describes the strategies and tactics that will be used to fulfill the following primary objective:

*Increase awareness that human behavior affects watershed health and use education to promote changes in behavior that will ultimately improve habitat, water quality, and water supply to benefit the watershed as a whole.*

The Carson River Watershed is a Priority Watershed under the Nevada Division of Environmental Protection's Nonpoint Source Management Program Update (NDEP 2015). The CRC will undertake outreach and education efforts to implement the Watershed-Literacy Action Plan 2015, along with actions derived from the completed Watershed-Literacy Survey (DEP-S 14-029) and this marketing and communications plan.

Outreach and communication efforts are intended to aid in implementing the vision for environmental stewardship; in other words, taking responsibility for our choices with a commitment to use natural resources effectively, protect our ecosystems, and ensure compliance with environmental requirements, where applicable. This sense of responsibility is a value that can be reflected through the choices of individuals, companies, communities, and government agencies, and shaped by unique environmental, social, and economic interests.

This marketing and communications plan is intended as a planning strategy that the CRC will use to inform planning and campaigns to develop more effective means of outreach. The level of implementation will be dictated by funding, priorities, and encumbrances.

### **INITIAL PLANNING MEETING**

To initiate the project, Responsive Management Executive Director Mark Damian Duda and Business Manager Alison Lanier participated in a conference call with CRC project managers Brenda Hunt and Courtney Walker on January 28, 2016. This teleconference served as an opportunity for the partners to discuss expectations for the draft marketing report.

It was clarified that Responsive Management will provide the whole list of recommended marketing themes and target audiences in the draft report, from which the CRC will select 3-5 of the recommendations for potential implementation over the next few years. The selected topics will be refined into specific messages or taglines upon further coordination by the CRC, if applicable.

## **SCIENTIFIC SURVEY OF CARSON RIVER WATERSHED RESIDENTS**

Responsive Management conducted a scientific survey to obtain current quantitative data regarding Carson River Watershed residents' awareness of local watershed concepts, attitudes toward watershed health, and activities or behaviors that may impact the watershed's environment. The study entailed a telephone survey of Carson River Watershed residents, ages 18 and older.

The telephone survey questionnaire was developed cooperatively by Responsive Management and the CRC. The survey was conducted in June 2015. Responsive Management obtained a total of 846 completed interviews with Carson River Watershed residents. Survey results were weighted by demographic characteristics (age and gender) so that the sample would represent residents in the Carson River Watershed as a whole. The sample was representative of residents from six counties that compose the Carson River Watershed:

- Alpine County, California
- Carson City, Nevada (independent city)
- Churchill County, Nevada
- Douglas County, Nevada
- Lyon County, Nevada
- Storey County, Nevada

The survey results, including extensive crosstabulations among the various respondent groups, are summarized in the report, *Watershed-Literacy Survey of Carson River Watershed Residents*, 2015.

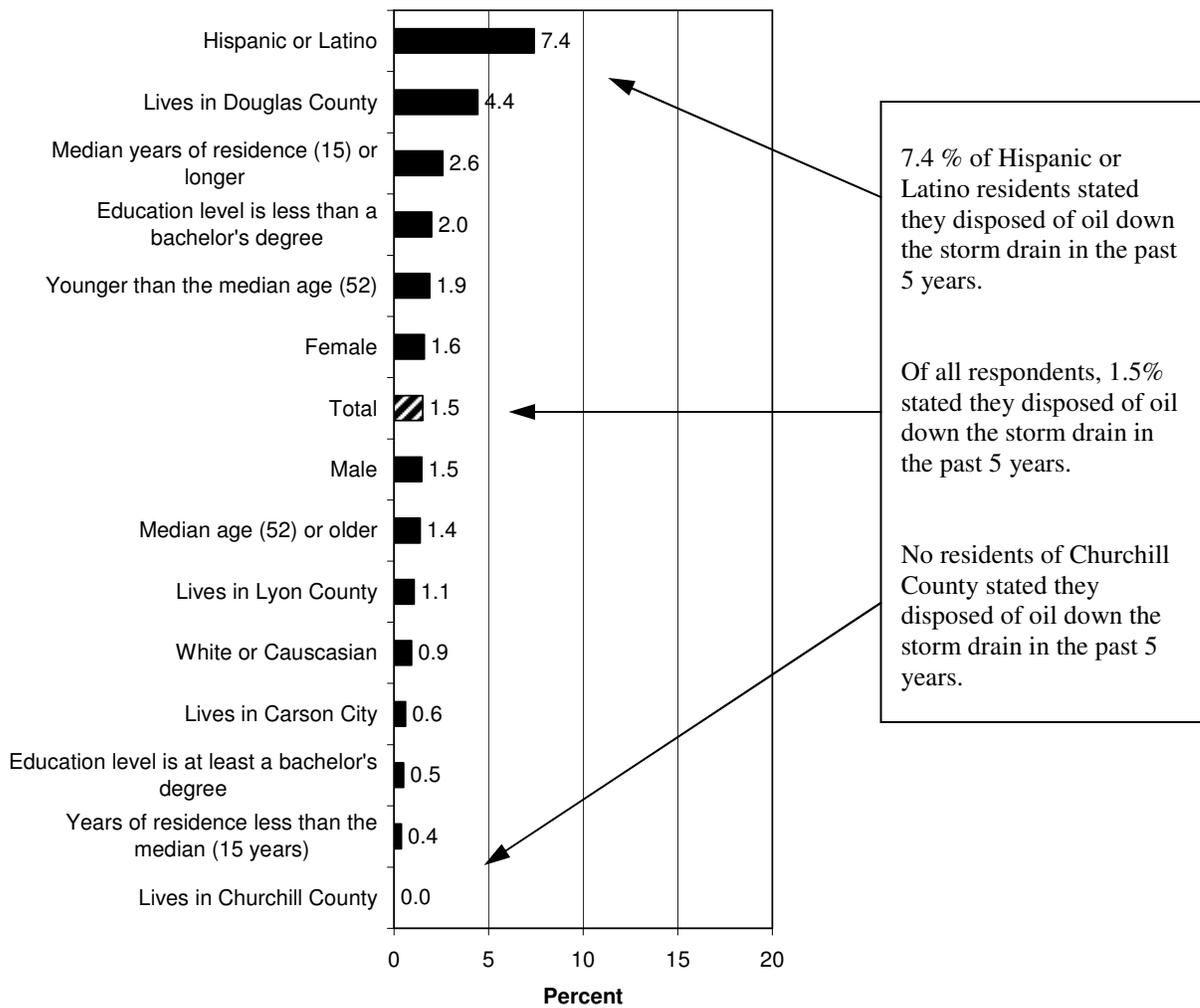
## **EXTENSIVE CROSTABULATIONS OF SURVEY DATA**

In addition to the overall survey results, Responsive Management conducted extensive crosstabulations to compare various subgroups within the data. These crosstabulations provided insights into demographic differences in awareness, attitudes, and behaviors, as well as comparisons among the counties. The respondent groups were analyzed and presented separately in the results.

## **HOW TO INTERPRET THE DEMOGRAPHIC CORRELATION GRAPHS**

Graphs are included that show how various demographic characteristics correlate with various opinions or activities. Each graph shows an overall result, and then it shows the result for that question among various demographic groups. Those groups at the top of the graph have a greater percentage giving a specific response, compared to respondents overall; those groups at the bottom of the graph have a lower percentage giving a specific response, compared to respondents overall. An example of a demographic correlation graph is provided on the following page.

**Percent who have disposed of oil down the storm drain in the past 5 years.**



These demographic correlation graphs are the basis for the initial qualitative review of the project survey. The graphs were used to identify awareness, attitudes, and behaviors—strengths or weaknesses—across all demographics to determine which audiences need what type of information. Once the topics and audiences were identified, statistical analysis was performed to determine any statistically significant variabilities.

## STATISTICAL ANALYSIS

For this report, both parametric and nonparametric analyses were used to examine how the various responses related to behavioral, attitudinal, and demographic characteristics. Because of the use of post-stratification weights upon the data, AM Statistical Software was used for all inferential analyses due to its more appropriate handling of standard errors for complex samples (Hahs-Vaughn, 2005). Comparisons involving only nominal data (e.g., county of residence) were examined using the Generalized Mantel-Haenszel Chi-Square test, and comparisons involving interval data (e.g., age) were examined using regression.

The  $p$ -values reported in the following section indicate the likelihood of the observed data given that no relationship between the noted variables exists within the population. For example, a  $p$ -value of  $<0.01$  would indicate that the likelihood of finding the observed data purely by chance, assuming that no relationship actually existed in the true population, was less than 1%—which would in turn offer meaningful evidence that the observed relationship within the collected data is likely to reflect one that also exists in the population.

For the purposes of this report, an alpha level of 0.05 (5% risk of error) was used as a boundary to determine significance.

## SURVEY RESULTS

The 2015 survey revealed that most residents are unaware of their connection to the Carson River and its watershed. Despite this, fortunately, residents generally value the importance of the watershed's health. Although a majority of survey respondents do not believe they personally affect the health of the Carson River Watershed, a majority nonetheless currently engage in actions that benefit the watershed's environment and/or plan to take or continue taking such actions in the future. These and other findings are summarized below.

### INTRODUCTION AND METHODOLOGY

This study was conducted for the Carson River Coalition (CRC) to determine Carson River Watershed residents' attitudes toward watershed health, knowledge of local watershed concepts, and activities or behaviors that may impact the watershed's environment. The study entailed a telephone survey of Carson River Watershed residents, ages 18 and older.

The telephone survey questionnaire was developed cooperatively by Responsive Management and the CRC. The survey was conducted in June 2015. Responsive Management obtained a total of 846 completed interviews with Carson River Watershed residents. The sample was representative of residents from six counties that compose the Carson River Watershed:

- Alpine County, California
- Carson City, Nevada (independent city)
- Churchill County, Nevada
- Douglas County, Nevada
- Lyon County, Nevada
- Storey County, Nevada

For the survey, telephones were selected as the preferred sampling medium because of the almost universal ownership of telephones among Carson River Watershed residents (both landlines and cell phones were called). The software used for data collection was Questionnaire Programming Language. The analysis of data was performed using Statistical Package for the Social Sciences as well as proprietary software developed by Responsive Management.

### ENVIRONMENTAL VALUES

- First, respondents were asked in an open-ended manner to name the most important environmental issue facing their area of residence. By far the top response was the general category "water-related issue," at 62%.
  - Of the demographic groups, those that most often gave this response are those who live in Churchill County (74%), those with an education of a bachelor's degree or greater (69%), Hispanic or Latino respondents (67%), and female respondents (66%).
  - Of the 62% who selected a water-related issue, over half (57%) named drought or water quantity as their top concern.
- In an open-ended question, respondents were asked what they value most about living in the Carson River Watershed: accessibility, an enjoyable living environment, and the regional economy were most often mentioned.

- Many respondents described access to different things as the most valued aspect of living in the Carson River Watershed. Access to an abundance of clean water; clean air; wildlife (often fish for the purpose of recreation were listed); and access to different types of landscape, such as snowy mountains, desert environments, and active waterways, were all listed.
- Many responses referred to the area's aesthetic appeal. Respondents described the area as beautiful, green, and open. In addition, many respondents felt that the more rural and less populated environment was the most valuable aspect of the area. Respondents reported being pleased with the quiet, small-town feeling of living in the Carson River Watershed.
- Several respondents listed economic reasons as the most valued aspect of living in the watershed. Tax structures were mentioned, as was an overall less expensive cost of living.

## KNOWLEDGE OF WATERSHEDS

- Respondents were asked in an open-ended manner where drainage (such as storm or rainwater) from their property ultimately goes to assess their propensity to identify its Carson River destination. The top responses are “absorbed into the ground/soil” (37%) and “flows into the street” (21%). Only 9% accurately indicated that it ultimately flows into the Carson River, although 5% generally said it flows into a local water body without specifying the name of that water body.
  - Respondents who generally stated that drainage from their property flows into a local water body were asked to name the local water body that received this drainage. Over half (56%) stated the Carson River, with 37% who said they did not know and 7% who gave another water body.
  - Combining these responses, 9% of all respondents named the Carson River without prompting, and another 3% named the Carson River when prompted to specify a water body. The vast majority (87%) did not specify a water body or gave a response not related to a water body.
- Nearly half (49%) of respondents said that groundwater or well water is the source of their tap water; the second most named response is city water (non-specific) at 11%. Only 2% named the Carson River.
- When asked how much they know about watersheds in general, respondents most often answered “a little” (39%) or “nothing at all” (30%).
  - Demographic groups that are more likely to say they know at least a little about watersheds are those with an education level of a bachelor's degree or greater (88% stated this), those who live in Douglas County (78%), and those at or above the median age of 52 (75%).
- While a substantial percentage of respondents correctly indicated they do live in a watershed (38% said they do), a majority of residents say they do not live in a watershed (42%) or they do not know (20%).

## HEALTH OF THE CARSON RIVER WATERSHED

- Respondents are divided on their perceptions of the health of the Carson River Watershed's environment. Slightly more say it is unhealthy (42%) than healthy (38%), with most of the latter saying it is *somewhat* healthy (as opposed to *very* healthy). There is little variation among demographic categories.
- In an open-ended question, respondents were asked to describe the characteristics of a healthy watershed. The four most often mentioned characteristics of a healthy watershed were: 1) plenty of flowing water, 2) a clean watershed free of contaminants and pollutants (mercury, oil, arsenic) that can be used for human consumption and agricultural needs, 3) presence of healthy vegetation and wildlife, and 4) consistent precipitation by way of rain or snowfall.
- Respondents were asked to rate how important the health of the Carson River Watershed's environment is to them, on a scale of 0 to 10, where 0 is not at all important and 10 is extremely important. The mean score was 8.27, with 53% of respondents rating this a 9 or 10. A large majority (83%) rated this 7 or higher.
  - Demographic groups more likely than residents overall to rate the watershed environment's importance a 9 or 10 are those at or above the median age of 52 (62% gave this rating) and female respondents (61%).
- In an open-ended question, respondents who rated the importance of the Carson River Watershed's health a 7 or higher were asked to describe the main reasons the health of the Carson River Watershed is important to them. A majority of respondents either replied that the environment's health was important because 1) it is their residence or 2) should it become contaminated, life would not be able to continue in the environment.
- When asked how much they affect the health of the Carson River Watershed's environment, respondents most commonly answered "a little" (44%), followed by "not at all" (26%).
  - Demographic groups who most often stated they affect the watershed's health a great deal or moderate amount were those who live in Churchill County (36% stated this) and female respondents (31%).
- Respondents most often stated the most important issues that negatively affect the health of the Carson River and its watershed are pollution (27% stated this) and drought (25%).
- Respondents were asked to rate a series of environmental actions on each action's importance to the health of the Carson River Watershed, on a scale of 0 to 10, where 0 is not at all important and 10 is extremely important. Of the actions listed, the highest mean ratings are for reducing polluted runoff (mean rating of 9.0), protection of the river's headwaters (also 9.0), and human efforts to protect or conserve water (8.9).

- The following is a partial list of the environmental actions listed in the survey, presented with the percentage of all respondents who rated the action as very important (9 or 10 rating). Demographic groups who most often gave a 9 or 10 rating are presented below the total.
- Reducing polluted run-off (71% of all respondents rated this 9 or 10)
    - Female (78%)
    - Younger than the median age of 52 (75%)
  - Protection of the river's headwaters (67% of all respondents rated this 9 or 10)
    - Lives in Churchill County (77%)
    - Younger than the median age of 52 (72%)
  - Human efforts to protect or conserve water (68% of all respondents rated this 9 or 10)
    - Lives in Churchill County (81%)
    - Female (78%)
  - Protection of the habitat along the river (56% of all respondents rated this 9 or 10)
    - Years of residence less than the median of 15 years (61%)
    - Female (61%)
  - Watershed outreach and education (56% of all respondents rated this 9 or 10)
    - Female (64%)
    - Lives in Churchill County (61%)
  - Addressing invasive species (49% of all respondents rated this 9 or 10)
    - Years of residence less than the median of 15 years (54%)
    - Hispanic or Latino (53%)
  - Floodplain conservation (42% of all respondents rated this 9 or 10)
    - Median age of 52 or older (50%)
    - Lives in Douglas County (50%)
    - Education level is at least a bachelor's degree (46%)
- Respondents most often stated the primary source of polluted run-off into the Carson River and its watershed are humans/people without further elaborating (28% stated this), farming/agriculture (17%), and industrial/commercial development or practices (15%).
- Two-thirds (67%) of respondents stated that yard and land maintenance practices affect the health of the Carson River and the watershed's environment.
- Of the demographic groups, those who most often stated this are those who live in Churchill County (85%) and female respondents (75%).

## ACTIVITIES THAT AFFECT WATERSHED CONSERVATION

- Respondents were asked to name the single most important action they can take to help protect or improve the health of the Carson River and its watershed's environment. Over three-quarters (76%) named a specific action; awareness and education were most often listed. Respondents felt that becoming more cognizant of their own usage and behavior was key in protecting the river and the watershed.
  - Of those who named an action, 85% state they are currently taking this action (that is, 65% of the total sample).
    - Demographic groups who most often stated they currently take action to help improve the health of the Carson River Watershed are Hispanic or Latino respondents (75%), those with an education level of at least a bachelor's degree (72%), and female respondents (70%).
  - Of those who named an action, 92% state they plan to take or continue taking this action in the next 5 years (that is, 70% of the total sample).
    - Demographic groups who most often stated they plan to take action in the next 5 years are those with an education level of at least a bachelor's degree (78%), those younger than the median age of 52 (75%), and Hispanic or Latino respondents (75%).
- Respondents were asked if they had taken specific actions within the past 5 years that affect the health of the Carson River Watershed. Of the positive actions listed, the highest percentages were for "picked up their pet's waste" (among pet owners) (87% of pet owners had taken this action), "cleaned their watercraft or waders to avoid spreading aquatic invasive species" (among boat owners) (73%), "modified outdoor irrigation to reduce water use" (among those who own a yard or lawn) (71%), and "removed any noxious or invasive weeds on their property" (among those who own a yard or lawn) (70%). Regarding the two negative actions listed, 41% of car owners washed their car in the driveway and 2% of all respondents disposed of oil down the storm drain within the past 5 years.

The following is a partial list of the personal actions listed in the survey, presented with the total percentage of respondents who had taken this action within the past 5 years.

Demographic groups who had most often taken this action are presented below the total.

- Replaced turf with landscaping that uses less water (40% of those who own property with landscaping have done this)
  - Hispanic or Latino (46%)
  - Median age (52) or older (43%)
  - Female (43%)
- Replaced appliances or water fixtures with ones that reduce water usage (67% of all respondents have done this)
  - Younger than the median age of 52 (78%)
  - Hispanic or Latino (77%)
  - Lives in Churchill County (75%)

- Disposed of oil down the storm drain (2% of all respondents have done this)
    - Hispanic or Latino (7%)
    - Lives in Douglas County (4%)
    - Median years of residence (15) or longer (3%)
  - Reduced fertilizer use (63% of those who own a yard or lawn have done this)
    - Education level is at least a bachelor's degree (68%)
    - Lives in Douglas County (67%)
    - Hispanic or Latino (66%)
  - Picked up their pet's waste (87% of pet owners have done this)
    - Female (91%)
    - Lives in Carson City (90%)
    - White or Caucasian (89%)
  - Washed their car in the driveway (41% of car owners have done this)
    - Lives in Lyon County (55%)
    - Lives in Douglas County (48%)
    - Younger than the median age of 52 (48%)
- Next, respondents were asked if they are very likely to take these specific actions in the next 5 years. The highest percentages were for “continue to pick up their pet's waste” (among pet owners) (87% of pet owners plan to do this), “remove noxious or invasive weeds on their property” (among those who own a yard or lawn) (84%), and “clean their watercraft or waders to avoid spreading aquatic invasive species” (among boat owners) (81%).
- A strong majority (82%) of respondents state there is nothing that prevents them from personally taking action to improve the health of the Carson River and the watershed's environment. Those who did state they are prevented from taking action were asked in an open-ended question to list any barriers; respondents most frequently reported problems associated with age or health and a lack of knowledge on existing issues or ways to resolve issues.

## SOURCES OF INFORMATION

- When asked where they get their information on local watershed or water quality issues, respondents most often stated newspapers (36% of respondents stated this), TV (22%), and websites (19%).
- Of the 7% who get their information from a government agency or office, the most often cited government sources were their local government (46% stated this) and the Carson Water Subconservancy District (23%).

**MAJOR FINDINGS**

- The category “water-related issue” is by far the most important environmental issue to Carson River watershed residents.
- Most residents are unaware that drainage from their property flows into the Carson River.
- Nearly half (49%) of respondents said that groundwater or well water is the source of their tap water; the second most named response is city water (non-specific) at 11%. Only 2% named the Carson River.
- A majority of residents claim to know little or nothing about watersheds in general. Also, a majority are unaware that they currently live in a watershed.
- Residents are divided on their perceptions of the health of the Carson River watershed, with nearly equal numbers saying it is healthy or unhealthy.
- The health of the Carson River watershed’s environment is very important to most residents.
- A majority of residents think they have little or no impact on the health of the Carson River and its watershed.
- In contrast to the previous finding, two-thirds of residents believe that lawn maintenance practices affect the health of the Carson River watershed.
- The factors rated as most important regarding the health of the Carson River watershed are the reduction of polluted run-off, protection of the river’s headwaters, and efforts to conserve water.
- A majority of Carson River watershed residents currently take actions that benefit the watershed’s environment (such as minimizing pollution or conserving water) and plan to continue these actions in the future.
- Although Hispanic or Latino residents indicate lower awareness of the Carson River watershed than other demographic groups, these residents are the most likely to take action to improve the health of the watershed.
- Residents most often get their information on local watershed or water quality issues from newspapers, followed by TV and websites.

## MARKETING AND COMMUNICATIONS APPROACH

This section provides an overview of the approach the CRC should adopt to develop a full plan to market and communicate conservation information to the relevant audiences and inspire behavioral change among watershed residents. Findings from the research, including behavioral tendencies among certain demographics, can be used to guide a marketing effort, but it is essential that the CRC first assess its organizational capabilities and identify specific goals for desired outcomes. The survey data and other research discussed in this document make up the foundations for the full plan. While the steps outlined in this section detail the process for developing the plan, the final marketing and communications effort will be the result of careful planning, introspection, and coordination on the part of the CRC.

As noted in this report, the CRC has a variety of communications options at their disposal. For example, the partners may communicate with watershed residents through in-house owned media such as websites, blogs, or social media accounts, as well as publications, news releases, and organization staff. Such owned media may be the most efficient avenues for communicating to target audiences, although it may also amount mostly to simple output, that is, information distributed with little knowledge of whether it is effective. Another important potential drawback to keep in mind regarding owned media is that, like advertising, it may not be trusted by those it is intended to reach. This appears especially true in the counties that make up the Carson River Watershed where newspapers are the most important source of information on the watershed.

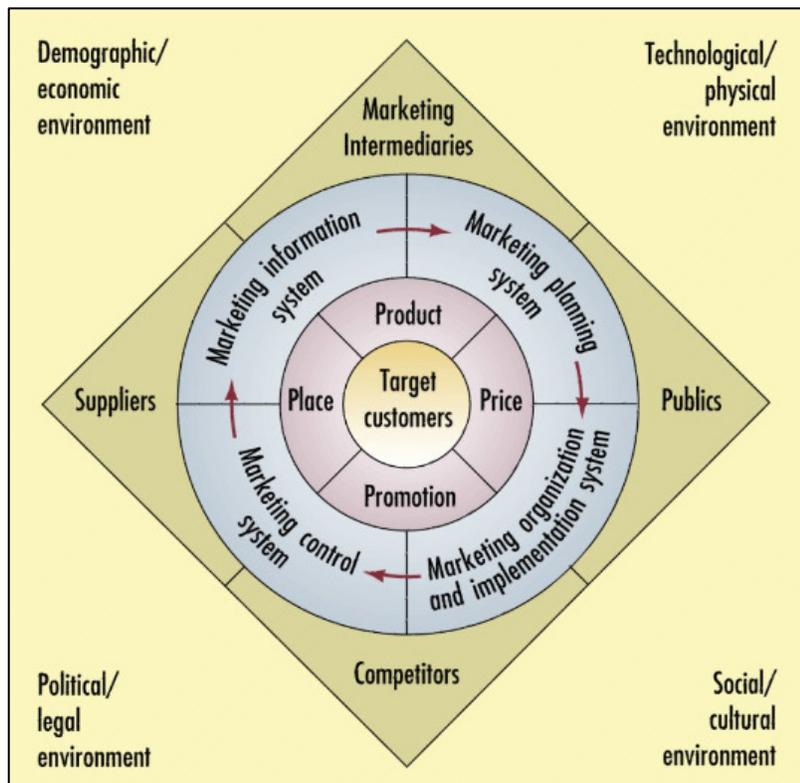
The ultimate goal is to convert owned media to earned media, the result of residents deciding to support a cause or embrace a campaign. Media is “earned” when objective third parties are persuaded to write favorably about an organization or campaign. Earned media translates into positive publicity and may be the result of initial news releases, story pitches, press conferences, blogs, or social networking. The benefit of earned media is that it is most credible to average citizens, in that non-biased sources are influencing people and encouraging them to talk and share information about an organization or campaign. Awareness and interest generated by earned media can be highly influential and valuable.

The importance of following through on the marketing and communications strategies discussed here also cannot be overstated. Often the implementation of a marketing or communications plan does not occur in full because the process is viewed by staff as being too overwhelming. It is therefore recommended that the CRC address various outreach components through prioritization. First, determine what can be accomplished easily and take the necessary steps to implement these tasks. Next, determine priorities that may require a higher level of time, effort, and funding. Accomplishing these tasks, even if it takes a period of a year or more, will help pave the way for lower priority items that depend on the implementation of the higher priority items. Progress is achieved as each item in the plan is addressed and completed. Initial accomplishments will help build momentum and sustain the desire to advance and improve.

A marketing or systematic communications approach leads to the most effective decisions and the development of the most appropriate programs, products, or services (in this case, a campaign or series of outreach efforts to generate awareness and inspire behavioral or attitudinal change).

Within the context of conservation and natural resource management, marketing is the deliberate and orderly step-by-step process of first defining what exactly is to be achieved; understanding and defining different groups of constituents (markets) through research; and then tailoring programs, products, or services to meet those needs through the manipulation of the marketing mix: product, price, place, and promotion (see Figure 1).

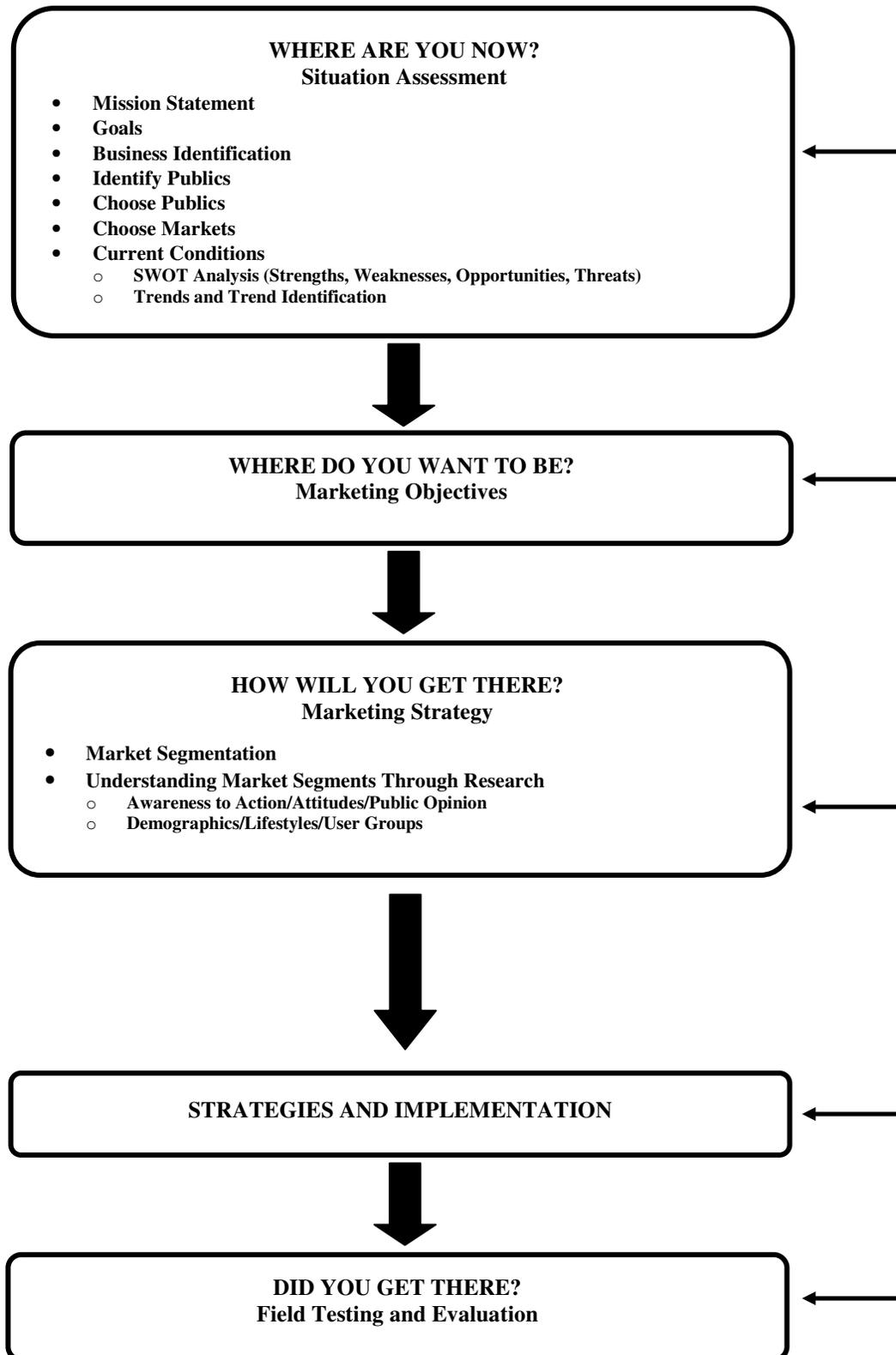
**Figure 1. Marketing/Communications Matrix.**



Source: Kotler, 2002.

The purpose of marketing and communications in the context of the Carson River awareness and conservation effort is to both better meet the goals of the agencies and organizations and to better meet the needs of watershed residents and constituents by providing them with beneficial programs, information, or services. Again, while the information in this section provides a roadmap of sorts to guide the CRC in the development phase, the ultimate strength of the plan depends on long-term commitment, organized and deliberate planning based on current research, and consistent assessment and evaluation.

**Figure 2. Marketing/Systematic Communications Process Model.**



## **PROCESS FOR PLAN DEVELOPMENT**

There are four major steps in marketing and communications planning: analyzing opportunities, developing strategies, planning programs, and managing efforts (Kotler, 2002). This process follows the standard format for good planning (see Figure 2 on the previous page).

It asks the following questions:

1. Where are we now? (Situation assessment)
2. Where do we want to be? (Opportunities and objectives)
3. How will we get there? (Strategies and program planning)
4. Did we get there? (Evaluation)

The initial effort will require the CRC to look inward by assessing organizational capabilities, resources, shortcomings, and essential needs.

### **SITUATION ASSESSMENT: WHERE ARE WE NOW?**

For a situation assessment, the organization takes a careful look at where it is now.

#### **Identifying Publics**

There is no such thing as the general public. The research in this report clearly indicates that people's relation to the Carson River Watershed is affected by a variety of factors, including age, race, and gender, among other variables. A list of one's publics is important in identifying one's place in a particular market.

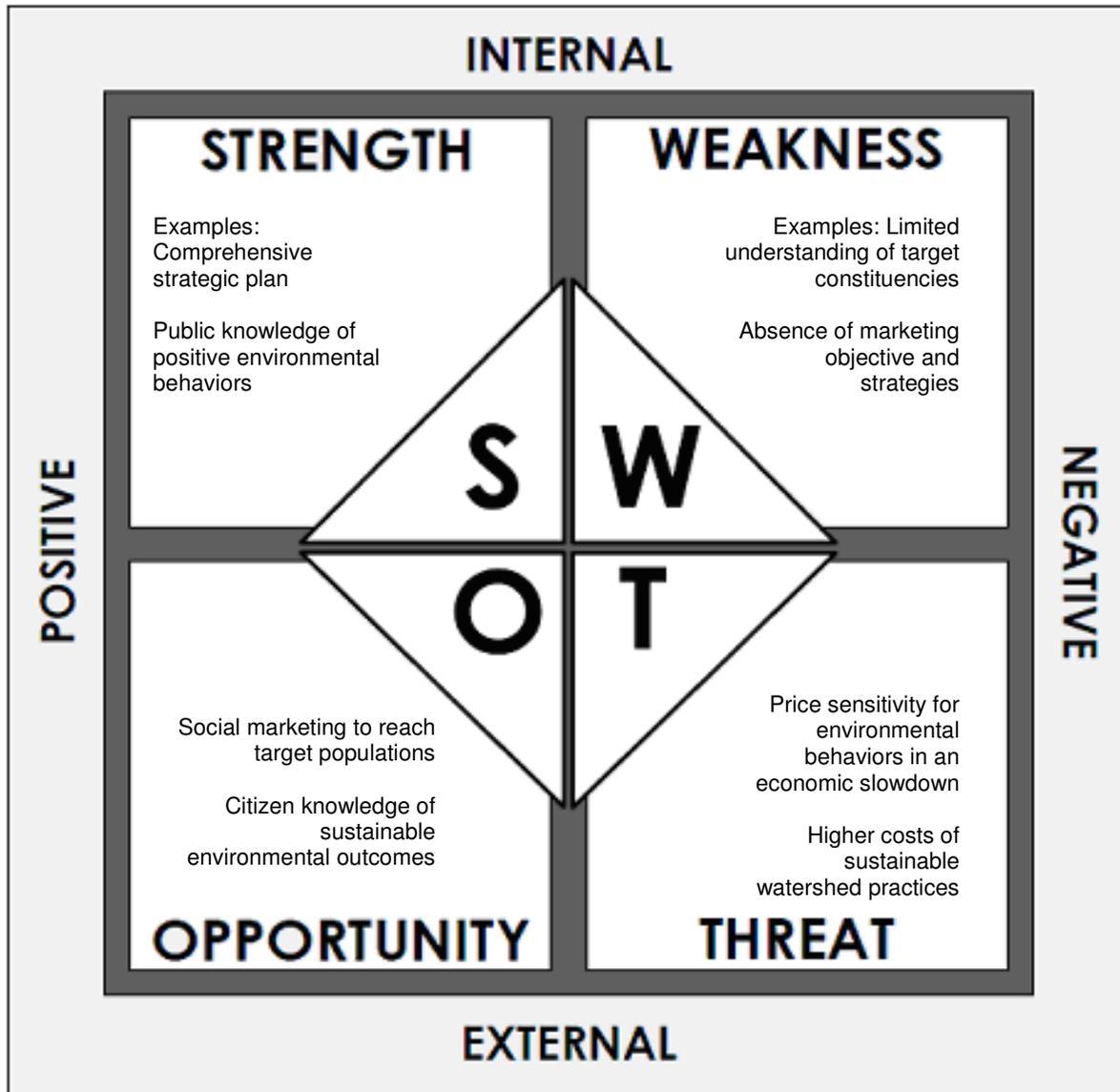
#### **Choosing Publics**

A commonly heard phrase in marketing is that "You can't be all things to all people." Marketing and a systematic communications process means making choices, and making choices means deciding specifically which groups will be targeted at any given time, with timing being different for different target markets (audiences). Different markets require different strategies. It is all right to choose more than one market to target, but it is important to keep in mind each group may require different strategies.

#### **Current Conditions**

The trend identification portion of the marketing process allows an organization to become proactive rather than reactive. A SWOT (Strengths, Weaknesses, Opportunities, and Threats) analysis is a strategic assessment of an organization's current conditions, including internal organizational strengths and weaknesses, and external opportunities and threats (see Figure 3 on the next page). The SWOT analysis helps identify conditions that influence the success fulfillment of marketing objectives. The analysis is used to determine marketing strategies by capitalizing on strengths, minimizing weaknesses, utilizing opportunities, and mitigating threats.

**Figure 3. SWOT Analysis Model.**



*Source: Adapted from a model by SmartDraw.com*

### **SWOT Analysis—Carson River Coalition**

While a detailed evaluation of the CRC is not within the scope of this initial planning effort, it is nonetheless a recommended process in which the CRC can evaluate current internal and external conditions prior to developing marketing and communications strategies. The resulting bullet point lists, offered as examples, may assist planning efforts with an understanding of the “big picture” by compiling extraneous facts into an easily understandable visual model.

The following items are suggested for consideration:

### **Strengths**

The CRC should take stock of existing resources.

- Motivated staff with substantial professional experience
- CRC is in charge of a resource that is valued by its residents
- Technical resources, including the CRC website and social media
- Administrative and internal support
- Existing partnerships

### **Weaknesses**

The CRC should assess any limitations that apply.

- Staff turnover
- Lack of adequate resources for communications
- A need for the CRC to track who they are reaching
- A need to improve communications in general at the organization
- Lack of experience in outreach methods
- A need to improve and/or drive traffic to the CRC website
- Organization branding issues

### **Opportunities**

- The marketing and communications plan will be a roadmap for change and improvements
- Social media including Facebook, Twitter, Instagram, blogs, and YouTube
- Management and some degree of coordination is already in place
- Existing relationships with local news outlets

### **Threats**

- Diminished funds for marketing and communications
- Difficulty in changing entrenched behavior
- Low levels of awareness among residents
- Lack of effective coordination, cooperation, and communications among partners

## **MARKETING/COMMUNICATIONS OBJECTIVES: WHERE DO WE WANT TO BE?**

Once an organization identifies where it is on its marketing and communications, the next step is to decide where it wants to be. In this phase of the planning, the CRC should develop specific objectives directed toward the accomplishment of goals—these should be specific and measurable statements of what, when, and how much will be achieved (Crowe, 1983). It is important to note where this objective setting is placed in the marketing process—at the end of the situation assessment. This is because realistic objectives cannot be set until there is a thorough understanding of where the organization is presently. In other words, the CRC should carefully note current knowledge and attitudinal levels, conservation behaviors, and other essential baseline information against which future progress may be measured. After completing

a comprehensive situation analysis, the organization is now ready to set informed, measurable objectives for evaluative results.

For the marketing/communications plan to be effective, it must both set and serve specific, firm objectives. Key elements to consider in defining marketing/communications objectives include identifying a target audience (public), determining the organization's public image or how the organization wants to be perceived by the public, developing attainable timelines, and defining metrics to evaluate the results. Marketing/communications objectives are a major touchstone for the overall marketing/communications plan; the marketing/communications plan will be written with clearly defined objectives in mind, and ultimately, marketing and communications efforts will be evaluated against these criteria.

Objectives should be clearly defined and communicated. Many programs and initiatives fail from the start because objectives are not agreed upon and written down by those involved. Perhaps the best example of obtuse objectives occurs when it comes to "informing and educating" a market about environmental/water conservation issues. Informing and educating a target market is a laudable goal but not a feasible objective. In the objective portion of the marketing process, "informing and educating" the public needs to be refined to something more specific, such as increasing factual knowledge, increasing concern, altering opinions, changing attitudes, or altering behavior. Taking the time to complete a situation assessment is extremely valuable. After all, if an organization does not know where it is or where it wants to be, how will it get there?

### **MARKETING/COMMUNICATIONS STRATEGY: HOW WILL WE GET THERE?**

At this point, the plan has identified where the organization is and where it wants to be. The "marketing strategy" section of the plan identifies how it will get there.

#### **Market Segmentation**

First, the market should be segmented; this section of the marketing/communications plan identifies the specific market segment(s). Who are they exactly? Recall that there is no such thing as a general public. Additionally, what are the demographics of the market segment? What do they want and what do they need? What are their attitudes and opinions about the topic under consideration? It is important to understand that marketing is not a "one size fits all" effort. It is clear from the research that marketing efforts need to be tailored to provide specific information or motivation to specific groups.

By targeting specific groups with specific messages, marketing efforts will become more effective and their outcomes can be more effectively measured. Outcome evaluation and program success can be measured by comparing awareness, attitudes, and behaviors before and after implementation of these efforts. Limitations in time, budgets, and staffing require that the CRC identify the highest priority audiences.

This plan contains detailed quantitative information on the full range of potential target markets within the Carson River Watershed and should be used to set specific marketing and communications objectives.

### **Media (Journalists)**

Because the media plays an essential role in communicating to the recommended target audiences, the CRC should focus on cultivating solid and positive relationships with these organizations and individuals. Specifically, the CRC will need to consider the following media groups when implementing the recommendations in the plan:

- **Traditional Media:** newspapers, magazines, television
- **Online Media:** blogs, newsletters, online editions of newspapers and magazines
- **Special Interest Media:** environmental, health-based, and nature-based media

### **Demographic Locations**

Beyond individual groups, geography plays an important role in segmenting audiences—regional delineations throughout the Carson River Watershed have implications on demographics and, consequently, the manner in which the CRC communicates with the audiences in each area. Projections of the population and demographic characteristics of each county can be found on pages 58–61 of this report.

## HOW MESSAGING CAN CHANGE BEHAVIORS

Ample literature exists exploring the process through which people may be motivated to change their behavior or engage in certain actions, with much of this research focusing on behavioral changes relating to conservation or environmental issues specifically. Such information provides useful context for the ways in which the proposed data collection and outreach tasks may facilitate the desired changes in behavior among Carson River Watershed residents.

First, Heberlein in his book, *Navigating Environmental Attitudes* (2012), warns against the expectation of consistency in a person's attitudes, noting that while attitudes may tend toward consistency, they are not strictly bound by this. Heberlein further notes that attitudes based on direct experience tend to be the strongest and most stable. In line with this, Heberlein states that strong attitudes may be especially resistant to change because they are based on direct experience, identities, and values. Finally, using data from several experimental studies, Heberlein asserts that merely providing the public with information (i.e., educational outreach) is unlikely to produce changes in behavior on its own.

This latter observation, in fact, is in direct agreement with research findings from Schultz (2011), which likewise indicate that education through messaging or outreach alone is generally insufficient for causing changes in conservation behaviors. Schultz finds that motivation, rather than information and education, is the primary cause of changes in conservation behaviors; accordingly, he recommends that messages intended to change behaviors focus on or otherwise include a motivational component designed to move the recipient to action. According to Stern (2000), some of the most prominent motivating elements include self-interest, social responsibility, and self-transcendent values.

In separate research, Schultz (2001) also found that individuals who perceive themselves as being connected to and a part of nature tend to be more likely to engage in various conservation actions and behaviors—this concept may be applied to messages that present an opportunity to reinforce such feelings of interconnectedness.

Expounding on the development of effective messages, Cialdini (2003) provides some critical insights into how outreach messages ought to be framed. Specifically, Cialdini recommends that messages avoid depicting problematic behaviors as frequent or commonplace: in doing so, such messages may inadvertently reinforce the idea that numerous people are engaging in a problematic behavior, thereby subtly communicating the behavior as socially normal. (This principle may be relevant to messages that attempt to discourage washing cars in the driveway, disposing of oil down a storm drain, or wasting water: depicting such behavior as rampant or especially common may weaken the argument against it, as individuals may perceive such behavior to be a social norm or even acceptable.)

The point regarding the effect of perceived social norms is based on a study carried out by Cialdini *et al.* (1990) in which two separate groups of participants were given the opportunity to litter in either a pristine environment or an environment already covered in litter. As predicted, participants were far more likely to litter in the latter setting, thereby adhering to the social norm suggested by the state of the environment. In a later experiment, Cialdini *et al.* (2006) examined

the effect of wording on a sign posted in Arizona's Petrified Forest National Park, which mentioned that the everyday theft of petrified wood from the forest resulted in a total of "14 tons a year, mostly a small piece at a time." To test the effect of messages that avoided communicating the extent of the theft by visitors, researchers erected other signs that simply instructed park visitors not to steal the wood. Later, it was determined that these instructively phrased signs resulted in significant decreases in the theft of the wood, in stark contrast to the signs which communicated theft as a social norm.

It must be noted that social norms may also be effective at reinforcing *positive* behavior, as was found in a study conducted by Ferraro *et al.* (2013) exploring how best to encourage water conservation behaviors. In the experiment, researchers distributed two types of messages to residents of Cobb County, Georgia: the first message type only included information on how to conserve water, while the second type included the same information but added a "socially normative" component comparing the recipient's water usage with median county water usage rates for the previous year (in this way, the recipient was able to compare his or her behavior to the behavior of the wider community). The researchers report that the socially normative messages strongly appealed to high-use consumers, and that water consumption rates were more likely to decrease among those who received the messages containing the social norm component.

The perceived achievability of the actions communicated in outreach messages may also influence likely receptivity and compliance. On this point, Costanzo *et al.* (1986) found that messages communicating "single, achievable, specific actions" are generally more likely to facilitate changes in behavior than are more generalized or vague exhortations ("Protect the environment" and "Save the planet" are given as examples of the latter).

As a case illustrating the relative effectiveness of messages characterized by focus and brevity, one may refer to the National Safe Boating Council's "Wear It!" campaign: this initiative, intended to increase rates of life jacket use among boaters, employs simple, direct messaging. Indicators of program effectiveness are encouraging. In recent years, more states have adopted the campaign materials, and boating fatalities nationwide have trended downward (U.S. Coast Guard, 2014). Additionally, the most recent "Wear It!" campaign evaluation found that boaters in locations with high campaign activity, compared to boaters in locations with no campaign activity, were significantly more likely to wear life jackets always or most of the time (Paul Werth Associates, 2014).

Other literature provides insights into the manner in which outreach and education may be distributed, and this information may help refine certain approaches to the proposed research objectives pertaining to public engagement and awareness.

Building on theoretical foundations in psychology, marketing, and social science research, McKenzie-Mohr and Smith (1999) propose a "community-based social marketing" approach to fostering sustainable behaviors. Community-based social marketing proceeds from the understanding that the most effective delivery of outreach will come from the community level. A central aspect of this approach is the removal of barriers that prevent engagement or participation in an activity, while at the same time emphasizing or enhancing benefits of the activity.

McKenzie-Mohr and Smith outline five major steps of the community-based marketing approach: 1) Selecting a behavior to target; 2) identifying barriers to and benefits of the behavior; 3) developing a strategy that both reduces barriers to the behavior and increases perceived benefits of the behavior; 4) implementing a pilot approach to the strategy; and 5) continually evaluating the strategy once it has been fully implemented. Following primary data collection using surveys and, potentially, this process may be usefully applied to the distribution of messages targeting resident groups.

Jensen (2010) provides an overview of how the University of Minnesota's Sea Grant Program incorporated certain aspects of the community-based marketing approach into its adoption of the "Stop Aquatic Hitchhikers" program, an initiative sponsored by the national Aquatic Nuisance Species Task Force, the U.S. Fish and Wildlife Service, and the U.S. Coast Guard to raise awareness of invasive species among boaters and other recreationists. As program coordinator, Jensen examined survey data indicating the most effective delivery modes for information as well as chief motivations for taking action on the invasive species issue. Signs, billboards, and stickers produced for the program also took into account the social norm principle by incorporating images of boaters checking their vessels for invasive species. The investigation of incentives for the desired behavior identified laws and regulations, enforcement activities, and fines. Evaluation components included a literature review, direct observation, interviews, focus groups, and survey questionnaires, with the latter determining that, after program implementation, overwhelming majorities of boaters in Minnesota indicated that they would be very likely to take action to prevent the spread of aquatic invasive species.

## FEASIBILITY OF TECHNIQUES

Surveys and focus groups are commonly used tools for gauging the human dimensions component of resource management, as they provide detailed, timely, and scientifically sound data. These methods are also routinely used to aid in the discipline of communications, particularly in the evaluation of campaign efforts and strategies.

In one pertinent case study, Landers *et al.* (2006) implemented a campaign to reduce nutrient pollution affecting the Chesapeake Bay. The campaign was designed to convince residents of the Washington, D.C. area to fertilize their lawns in the fall, rather than in the spring (when runoff had the greatest potential to flow into the Bay). One of the innovations of the campaign was to reframe the environmental issue of Chesapeake Bay protection as an appeal to ensure the availability of seafood from the Bay (it was hypothesized that this approach would resonate better with the urban D.C. audience). A 2004 pre-campaign telephone survey of watershed area homeowners established that while residents expressed concern about Bay protection, few engaged in direct actions to ensure the sustainability of the Bay.

Campaign materials implemented included paid television and print ads, media stories in various outlets, posters, brochures, lawn signs, decals, door hangers, and restaurant coasters (campaign partners included lawn care companies as well as seafood restaurants). A post-campaign telephone survey conducted in 2005 found that 72% of respondents could recall a major theme of the campaign. Comparisons of treatment and non-treatment groups revealed that 46% of those not exposed to the campaign planned to fertilize their lawn in the spring, compared to only 40% of those who were exposed to the campaign (though notable, this difference was not statistically

significant). However, the data also suggested that the campaign may have influenced some individuals to stop fertilizing their lawns altogether.

A similar study was conducted by Responsive Management (2003) for the Georgia Department of Natural Resources' Pollution Prevention Assistance Division. This research, implemented to better understand Georgia residents' attitudes and opinions toward water resource issues in the state, examined residents' willingness to participate in water conservation measures, incentives and constraints to water conservation in Georgia, and the educational messages to which the Georgia public was likely to respond in a statewide water conservation campaign. There were three phases to the project: a series of pre-survey focus groups with Georgia residents, a telephone survey of the Georgia public, and a series of post-survey focus groups with Georgia residents.

Results from the study demonstrated that a majority of the Georgia public was concerned about water resource issues, although there was greater concern for water *quality* over water *quantity*. The implication was that an effective water conservation campaign would need to tie water quality to water quantity in order to elevate overall awareness and concern about water conservation in Georgia. Additionally, the data suggested that Georgia residents needed to be informed about household activities that consumed more water than residents thought.

## DEMOGRAPHIC AND MARKETING INFORMATION FOR KEY AUDIENCES

The following tables provide a summation of the 2015 project survey results, presented for all survey respondents as well as for key demographic groups. For the total sample of respondents and each demographic group, the tables below and on the following pages present (a) demographic characteristics and (b) responses to key questions related to awareness, attitudes, and behaviors regarding the Carson River Watershed.

### CARSON RIVER WATERSHED SURVEY RESPONDENTS: DEMOGRAPHICS AND CHARACTERISTICS

Gender	
Male	51%
Female	49%

Age*	
Mean	51.3 years
Median	52 years

Education Level	
Professional or doctorate degree	3%
Master's degree	6%
Bachelor's degree	20%
Associate's or trade school degree	15%
Some college or trade school	23%
High school graduate	29%
Not a high school graduate	2%

County of Residence	
Alpine County, CA	0.6%
Carson City, NV (Independent City)	35.4%
Churchill County, NV	18.5%
Douglas County, NV	25.0%
Lyon County, NV	19.7%
Storey County, NV	0.8%

Race/Ethnic Background	
White / Caucasian	82.4%
Hispanic / Latino	9.6%
Native American / Alaskan native	1.8%
East Asian	0.4%

Years of Residence (Mean = 17.4; Median = 15)	
50 years or more	2%
41-50 years	4%
31-40 years	8%
21-30 years	18%
16-20 years	14%
11-15 years	17%
6-10 years	16%
0-5 years	21%

**Note: "Other/don't know/none of the above/refused" removed; results may not sum to 100%.**

**\*Survey was administered to those ages 18 and older.**

## CARSON RIVER WATERSHED SURVEY RESPONDENTS: KEY MARKETING INFORMATION

Percent of Carson River Watershed residents who named water-related issues as the most important environmental issue facing their area of residence.	<ul style="list-style-type: none"> <li>○ 62%</li> </ul>
Percent of Carson River Watershed residents who stated that drainage from their property flows into the Carson River.	<ul style="list-style-type: none"> <li>○ 9% (unprompted)</li> <li>○ 3% (when prompted to specify a water body)</li> </ul>
Percent of Carson River Watershed residents who stated that they live in a watershed.	<ul style="list-style-type: none"> <li>○ 38%</li> </ul>
Mean rating of importance of the health of the Carson River Watershed's environment, on a scale of 0 to 10 (percent who rated the importance a 9 or 10).	<ul style="list-style-type: none"> <li>○ 8.3 (53% rated 9 or 10)</li> </ul>
Top 5 environmental actions according to their ratings of importance to the Carson River Watershed's environment (mean rating on a scale of 0 to 10).	<ul style="list-style-type: none"> <li>○ Reducing polluted runoff (9.0)</li> <li>○ Protection of the river's headwaters (9.0)</li> <li>○ Human efforts to protect or conserve water (8.9)</li> <li>○ Protection of habitat along the river (8.6)</li> <li>○ Watershed outreach and education (8.3)</li> </ul>
Percent of Carson River Watershed residents who stated that yard and land maintenance practices affect the Carson River Watershed's environment.	<ul style="list-style-type: none"> <li>○ 67%</li> </ul>
Percent of Carson River Watershed residents who are currently taking action to benefit the Carson River Watershed's environment.	<ul style="list-style-type: none"> <li>○ 65%</li> </ul>
Percent of Carson River Watershed residents who plan to continue taking action to benefit the Carson River Watershed's environment over the next 5 years.	<ul style="list-style-type: none"> <li>○ 70%</li> </ul>
Percent of Carson River Watershed residents who took the listed actions over the past 5 years that are beneficial to the Carson River Watershed's environment.	<ul style="list-style-type: none"> <li>○ Picked up their pet's waste (87% of pet owners)</li> <li>○ Cleaned their watercraft or waders to avoid spreading aquatic invasive species (73% of boat owners)</li> <li>○ Modified outdoor irrigation to reduce water usage (71% of those who own a lawn)</li> <li>○ Removed any noxious or invasive weeds on their property (70% of those who own a lawn)</li> <li>○ Replaced any major appliances or water fixtures with ones that reduce water usage (67%)</li> <li>○ Reduced fertilizer use (63% of those who own a lawn)</li> <li>○ Redirected their gutter downspout to help water their landscaping (54% of those who own property with landscaping)</li> <li>○ Replaced turf with landscaping that uses less water (39% of those who own property with landscaping)</li> <li>○ Participated in a watershed related work day, field trip, workshop, or public meeting, or contacted an elected official about watershed issues (19%)</li> </ul>
Percent of Carson River Watershed residents who took the listed actions over the past 5 years that are detrimental to the Carson River Watershed's environment.	<ul style="list-style-type: none"> <li>○ Washed their car in their driveway (41% of car owners)</li> <li>○ Disposed of oil down the storm drain (2%)</li> </ul>
Top sources of information on local watershed or water quality issues.	<ul style="list-style-type: none"> <li>○ Newspapers (36%)</li> <li>○ TV (22%)</li> <li>○ Websites (19%)</li> </ul>

**CARSON RIVER WATERSHED—HISPANIC RESIDENTS:  
DEMOGRAPHICS AND CHARACTERISTICS**

**10% of Carson River Watershed survey respondents were Hispanic or Latino.**

Gender	
Male	41%
Female	59%

Age*	
Mean	36.0 years
Median	32 years

Education Level	
Professional or doctorate degree	0%
Master's degree	0%
Bachelor's degree	22%
Associate's or trade school degree	6%
Some college or trade school	5%
High school graduate	66%
Not a high school graduate	2%

County of Residence	
Alpine County, CA	0%
Carson City, NV (Independent City)	68%
Churchill County, NV	3%
Douglas County, NV	11%
Lyon County, NV	19%
Storey County, NV	0%

Race/Ethnic Background	
White / Caucasian	7%
Hispanic / Latino	100%
Native American / Alaskan native	1%
East Asian	0%

Years of Residence (Mean = 15.0; Median = 16)	
50 years or more	1%
41-50 years	0%
31-40 years	2%
21-30 years	37%
16-20 years	13%
11-15 years	5%
6-10 years	15%
0-5 years	28%

**Note: “Other/don’t know/none of the above/refused” removed; results may not sum to 100%.**

**\*Survey was administered to those ages 18 and older.**

**CARSON RIVER WATERSHED—HISPANIC RESIDENTS:  
KEY MARKETING INFORMATION**

Percent who named water-related issues as the most important environmental issue facing their area of residence.	<ul style="list-style-type: none"> <li>○ 67%</li> </ul>
Percent who stated that drainage from their property flows into the Carson River.	<ul style="list-style-type: none"> <li>○ 1% (unprompted)</li> <li>○ 1% (when prompted to specify a water body)</li> </ul>
Percent who stated that they live in a watershed.	<ul style="list-style-type: none"> <li>○ 13%</li> </ul>
Percent who rated the health of the Carson River Watershed’s environment as very important (rating of 9 or 10 out of 10).	<ul style="list-style-type: none"> <li>○ 28%</li> </ul>
Percent who rate the following environmental actions as very important to the Carson River Watershed’s environment (rating of 9 or 10 out of 10):	<ul style="list-style-type: none"> <li>○ Reducing polluted runoff (66%)</li> <li>○ Protection of the river’s headwaters (61%)</li> <li>○ Human efforts to protect or conserve water (65%)</li> <li>○ Protection of habitat along the river (56%)</li> <li>○ Watershed outreach and education (57%)</li> <li>○ Addressing invasive species (53%)</li> <li>○ Floodplain conservation (31%)</li> </ul>
Percent who stated that yard and land maintenance practices affect the Carson River Watershed’s environment.	<ul style="list-style-type: none"> <li>○ 35%</li> </ul>
Percent who are currently taking action to benefit the Carson River Watershed’s environment.	<ul style="list-style-type: none"> <li>○ 75%</li> </ul>
Percent who plan to take or continue taking action to benefit the Carson River Watershed’s environment over the next 5 years.	<ul style="list-style-type: none"> <li>○ 75%</li> </ul>
Percent who took the following actions over the past 5 years that are beneficial to the Carson River Watershed’s environment:	<ul style="list-style-type: none"> <li>○ Picked up their pet’s waste (80% of pet owners)</li> <li>○ Cleaned their watercraft or waders to avoid spreading aquatic invasive species (89% of boat owners)</li> <li>○ Modified outdoor irrigation to reduce water usage (69% of those who own a lawn)</li> <li>○ Replaced any major appliances or water fixtures with ones that reduce water usage (77%)</li> <li>○ Reduced fertilizer use (66% of those who own a lawn)</li> <li>○ Replaced turf with landscaping that uses less water (46% of those who own property with landscaping)</li> </ul>
Percent who took the following actions over the past 5 years that are detrimental to the Carson River Watershed’s environment:	<ul style="list-style-type: none"> <li>○ Washed their car in their driveway (34% of car owners)</li> <li>○ Disposed of oil down the storm drain (7%)</li> </ul>
Top sources of information on local watershed or water quality issues.	<ul style="list-style-type: none"> <li>○ Newspapers (30%)</li> <li>○ Websites (24%)</li> <li>○ Water utility (13%)</li> </ul>

## CARSON RIVER WATERSHED—MALE RESIDENTS: DEMOGRAPHICS AND CHARACTERISTICS

**51% of Carson River Watershed survey respondents were male.**

Gender	
Male	100%
Female	0%

Age*	
Mean	51.0 years
Median	53 years

Education Level	
Professional or doctorate degree	4%
Master's degree	6%
Bachelor's degree	20%
Associate's or trade school degree	12%
Some college or trade school	24%
High school graduate	31%
Not a high school graduate	3%

County of Residence	
Alpine County, CA	0%
Carson City, NV (Independent City)	33%
Churchill County, NV	14%
Douglas County, NV	29%
Lyon County, NV	23%
Storey County, NV	1%

Race/Ethnic Background	
White / Caucasian	83%
Hispanic / Latino	8%
Native American / Alaskan native	1%
East Asian	0%

Years of Residence (Mean = 17.7; Median = 15)	
50 years or more	3%
41-50 years	4%
31-40 years	9%
21-30 years	16%
16-20 years	14%
11-15 years	21%
6-10 years	15%
0-5 years	19%

**Note: “Other/don’t know/none of the above/refused” removed; results may not sum to 100%.**

**\*Survey was administered to those ages 18 and older.**

**CARSON RIVER WATERSHED—MALE RESIDENTS:  
KEY MARKETING INFORMATION**

Percent who named water-related issues as the most important environmental issue facing their area of residence.	<ul style="list-style-type: none"> <li>○ 58%</li> </ul>
Percent who stated that drainage from their property flows into the Carson River.	<ul style="list-style-type: none"> <li>○ 14% (unprompted)</li> <li>○ 5% (when prompted to specify a water body)</li> </ul>
Percent who stated that they live in a watershed.	<ul style="list-style-type: none"> <li>○ 44%</li> </ul>
Percent who rated the health of the Carson River Watershed’s environment as very important (rating of 9 or 10 out of 10).	<ul style="list-style-type: none"> <li>○ 45%</li> </ul>
Percent who rate the following environmental actions as very important to the Carson River Watershed’s environment (rating of 9 or 10 out of 10):	<ul style="list-style-type: none"> <li>○ Reducing polluted runoff (63%)</li> <li>○ Protection of the river’s headwaters (64%)</li> <li>○ Human efforts to protect or conserve water (58%)</li> <li>○ Protection of habitat along the river (52%)</li> <li>○ Watershed outreach and education (48%)</li> <li>○ Addressing invasive species (47%)</li> <li>○ Floodplain conservation (43%)</li> </ul>
Percent who stated that yard and land maintenance practices affect the Carson River Watershed’s environment.	<ul style="list-style-type: none"> <li>○ 59%</li> </ul>
Percent who are currently taking action to benefit the Carson River Watershed’s environment.	<ul style="list-style-type: none"> <li>○ 59%</li> </ul>
Percent who plan to take or continue taking action to benefit the Carson River Watershed’s environment over the next 5 years.	<ul style="list-style-type: none"> <li>○ 67%</li> </ul>
Percent who took the following actions over the past 5 years that are beneficial to the Carson River Watershed’s environment:	<ul style="list-style-type: none"> <li>○ Picked up their pet’s waste (83% of pet owners)</li> <li>○ Cleaned their watercraft or waders to avoid spreading aquatic invasive species (65% of boat owners)</li> <li>○ Modified outdoor irrigation to reduce water usage (69% of those who own a lawn)</li> <li>○ Replaced any major appliances or water fixtures with ones that reduce water usage (66%)</li> <li>○ Reduced fertilizer use (61% of those who own a lawn)</li> <li>○ Replaced turf with landscaping that uses less water (36% of those who own property with landscaping)</li> </ul>
Percent who took the following actions over the past 5 years that are detrimental to the Carson River Watershed’s environment:	<ul style="list-style-type: none"> <li>○ Washed their car in their driveway (47% of car owners)</li> <li>○ Disposed of oil down the storm drain (2%)</li> </ul>
Top sources of information on local watershed or water quality issues.	<ul style="list-style-type: none"> <li>○ Newspapers (39%)</li> <li>○ TV (21%)</li> <li>○ Websites (17%)</li> </ul>

## CARSON RIVER WATERSHED—FEMALE RESIDENTS: DEMOGRAPHICS AND CHARACTERISTICS

**49% of Carson River Watershed survey respondents were female.**

Gender	
Male	0%
Female	100%

Age*	
Mean	51.6 years
Median	52 years

Education Level	
Professional or doctorate degree	2%
Master's degree	7%
Bachelor's degree	20%
Associate's or trade school degree	19%
Some college or trade school	22%
High school graduate	29%
Not a high school graduate	1%

County of Residence	
Alpine County, CA	1%
Carson City, NV (Independent City)	38%
Churchill County, NV	23%
Douglas County, NV	20%
Lyon County, NV	16%
Storey County, NV	1%

Race/Ethnic Background	
White / Caucasian	82%
Hispanic / Latino	11%
Native American / Alaskan native	3%
East Asian	1%

Years of Residence (Mean = 17.1; Median = 15)	
50 years or more	2%
41-50 years	4%
31-40 years	7%
21-30 years	20%
16-20 years	14%
11-15 years	13%
6-10 years	18%
0-5 years	22%

**Note: “Other/don’t know/none of the above/refused” removed; results may not sum to 100%.**

**\*Survey was administered to those ages 18 and older.**

**CARSON RIVER WATERSHED—FEMALE RESIDENTS:  
KEY MARKETING INFORMATION**

Percent who named water-related issues as the most important environmental issue facing their area of residence.	<ul style="list-style-type: none"> <li>○ 66%</li> </ul>
Percent who stated that drainage from their property flows into the Carson River.	<ul style="list-style-type: none"> <li>○ 5% (unprompted)</li> <li>○ 2% (when prompted to specify a water body)</li> </ul>
Percent who stated that they live in a watershed.	<ul style="list-style-type: none"> <li>○ 31%</li> </ul>
Percent who rated the health of the Carson River Watershed's environment as very important (rating of 9 or 10 out of 10).	<ul style="list-style-type: none"> <li>○ 61%</li> </ul>
Percent who rate the following environmental actions as very important to the Carson River Watershed's environment (rating of 9 or 10 out of 10):	<ul style="list-style-type: none"> <li>○ Reducing polluted runoff (78%)</li> <li>○ Protection of the river's headwaters (70%)</li> <li>○ Human efforts to protect or conserve water (78%)</li> <li>○ Protection of habitat along the river (61%)</li> <li>○ Watershed outreach and education (64%)</li> <li>○ Addressing invasive species (50%)</li> <li>○ Floodplain conservation (41%)</li> </ul>
Percent who stated that yard and land maintenance practices affect the Carson River Watershed's environment.	<ul style="list-style-type: none"> <li>○ 75%</li> </ul>
Percent who are currently taking action to benefit the Carson River Watershed's environment.	<ul style="list-style-type: none"> <li>○ 70%</li> </ul>
Percent who plan to take or continue taking action to benefit the Carson River Watershed's environment over the next 5 years.	<ul style="list-style-type: none"> <li>○ 72%</li> </ul>
Percent who took the following actions over the past 5 years that are beneficial to the Carson River Watershed's environment:	<ul style="list-style-type: none"> <li>○ Picked up their pet's waste (91% of pet owners)</li> <li>○ Cleaned their watercraft or waders to avoid spreading aquatic invasive species (83% of boat owners)</li> <li>○ Modified outdoor irrigation to reduce water usage (73% of those who own a lawn)</li> <li>○ Replaced any major appliances or water fixtures with ones that reduce water usage (68%)</li> <li>○ Reduced fertilizer use (64% of those who own a lawn)</li> <li>○ Replaced turf with landscaping that uses less water (43% of those who own property with landscaping)</li> </ul>
Percent who took the following actions over the past 5 years that are detrimental to the Carson River Watershed's environment:	<ul style="list-style-type: none"> <li>○ Washed their car in their driveway (34% of car owners)</li> <li>○ Disposed of oil down the storm drain (2%)</li> </ul>
Top sources of information on local watershed or water quality issues.	<ul style="list-style-type: none"> <li>○ Newspapers (33%)</li> <li>○ TV (23%)</li> <li>○ Websites (21%)</li> </ul>

**CARSON RIVER WATERSHED—RESIDENTS YOUNGER THAN THE MEDIAN AGE  
(52):**

**DEMOGRAPHICS AND CHARACTERISTICS**

**45% of Carson River Watershed survey respondents were younger than the median age of 52 years.**

Gender	
Male	49%
Female	51%

Age*	
Mean	34.4 years
Median	35 years

Education Level	
Professional or doctorate degree	1%
Master's degree	3%
Bachelor's degree	20%
Associate's or trade school degree	16%
Some college or trade school	17%
High school graduate	40%
Not a high school graduate	3%

County of Residence	
Alpine County, CA	1%
Carson City, NV (Independent City)	35%
Churchill County, NV	21%
Douglas County, NV	22%
Lyon County, NV	22%
Storey County, NV	0%

Race/Ethnic Background	
White / Caucasian	77%
Hispanic / Latino	18%
Native American / Alaskan native	2%
East Asian	0%

Years of Residence (Mean = 14.3; Median = 12)	
50 years or more	0%
41-50 years	3%
31-40 years	4%
21-30 years	18%
16-20 years	14%
11-15 years	16%
6-10 years	19%
0-5 years	26%

**Note: “Other/don’t know/none of the above/refused” removed; results may not sum to 100%.**

**\*Survey was administered to those ages 18 and older.**

**CARSON RIVER WATERSHED—RESIDENTS YOUNGER THAN THE MEDIAN AGE  
(52):**

**KEY MARKETING INFORMATION**

Percent who named water-related issues as the most important environmental issue facing their area of residence.	<ul style="list-style-type: none"> <li>○ 60%</li> </ul>
Percent who stated that drainage from their property flows into the Carson River.	<ul style="list-style-type: none"> <li>○ 12% (unprompted)</li> <li>○ 2% (when prompted to specify a water body)</li> </ul>
Percent who stated that they live in a watershed.	<ul style="list-style-type: none"> <li>○ 36%</li> </ul>
Percent who rated the health of the Carson River Watershed's environment as very important (rating of 9 or 10 out of 10).	<ul style="list-style-type: none"> <li>○ 45%</li> </ul>
Percent who rate the following environmental actions as very important to the Carson River Watershed's environment (rating of 9 or 10 out of 10):	<ul style="list-style-type: none"> <li>○ Reducing polluted runoff (75%)</li> <li>○ Protection of the river's headwaters (72%)</li> <li>○ Human efforts to protect or conserve water (71%)</li> <li>○ Protection of habitat along the river (57%)</li> <li>○ Watershed outreach and education (59%)</li> <li>○ Addressing invasive species (51%)</li> <li>○ Floodplain conservation (35%)</li> </ul>
Percent who stated that yard and land maintenance practices affect the Carson River Watershed's environment.	<ul style="list-style-type: none"> <li>○ 65%</li> </ul>
Percent who are currently taking action to benefit the Carson River Watershed's environment.	<ul style="list-style-type: none"> <li>○ 67%</li> </ul>
Percent who plan to take or continue taking action to benefit the Carson River Watershed's environment over the next 5 years.	<ul style="list-style-type: none"> <li>○ 75%</li> </ul>
Percent who took the following actions over the past 5 years that are beneficial to the Carson River Watershed's environment:	<ul style="list-style-type: none"> <li>○ Picked up their pet's waste (87% of pet owners)</li> <li>○ Cleaned their watercraft or waders to avoid spreading aquatic invasive species (91% of boat owners)</li> <li>○ Modified outdoor irrigation to reduce water usage (71% of those who own a lawn)</li> <li>○ Replaced any major appliances or water fixtures with ones that reduce water usage (78%)</li> <li>○ Reduced fertilizer use (66% of those who own a lawn)</li> <li>○ Replaced turf with landscaping that uses less water (35% of those who own property with landscaping)</li> </ul>
Percent who took the following actions over the past 5 years that are detrimental to the Carson River Watershed's environment:	<ul style="list-style-type: none"> <li>○ Washed their car in their driveway (48% of car owners)</li> <li>○ Disposed of oil down the storm drain (2%)</li> </ul>
Top sources of information on local watershed or water quality issues.	<ul style="list-style-type: none"> <li>○ Websites (29%)</li> <li>○ Newspapers (29%)</li> <li>○ TV (25%)</li> </ul>

**CARSON RIVER WATERSHED—RESIDENTS AT THE MEDIAN AGE (52) OR OLDER:**

**DEMOGRAPHICS AND CHARACTERISTICS**

**55% of Carson River Watershed survey respondents were at the median age (52) or older.**

Gender	
Male	51%
Female	49%

Age*	
Mean	66.5 years
Median	64 years

Education Level	
Professional or doctorate degree	5%
Master's degree	9%
Bachelor's degree	20%
Associate's or trade school degree	16%
Some college or trade school	27%
High school graduate	22%
Not a high school graduate	2%

County of Residence	
Alpine County, CA	1%
Carson City, NV (Independent City)	35%
Churchill County, NV	17%
Douglas County, NV	29%
Lyon County, NV	17%
Storey County, NV	2%

Race/Ethnic Background	
White / Caucasian	92%
Hispanic / Latino	3%
Native American / Alaskan native	2%
East Asian	0%

Years of Residence (Mean = 20.1; Median = 17)	
50 years or more	4%
41-50 years	6%
31-40 years	10%
21-30 years	20%
16-20 years	14%
11-15 years	15%
6-10 years	15%
0-5 years	16%

**Note: “Other/don’t know/none of the above/refused” removed; results may not sum to 100%.**

**\*Survey was administered to those ages 18 and older.**

## CARSON RIVER WATERSHED— RESIDENTS AT THE MEDIAN AGE (52) OR OLDER:

### KEY MARKETING INFORMATION

Percent who named water-related issues as the most important environmental issue facing their area of residence.	<ul style="list-style-type: none"> <li>○ 64%</li> </ul>
Percent who stated that drainage from their property flows into the Carson River.	<ul style="list-style-type: none"> <li>○ 8% (unprompted)</li> <li>○ 4% (when prompted to specify a water body)</li> </ul>
Percent who stated that they live in a watershed.	<ul style="list-style-type: none"> <li>○ 40%</li> </ul>
Percent who rated the health of the Carson River Watershed's environment as very important (rating of 9 or 10 out of 10).	<ul style="list-style-type: none"> <li>○ 62%</li> </ul>
Percent who rate the following environmental actions as very important to the Carson River Watershed's environment (rating of 9 or 10 out of 10):	<ul style="list-style-type: none"> <li>○ Reducing polluted runoff (71%)</li> <li>○ Protection of the river's headwaters (67%)</li> <li>○ Human efforts to protect or conserve water (69%)</li> <li>○ Protection of habitat along the river (59%)</li> <li>○ Watershed outreach and education (59%)</li> <li>○ Addressing invasive species (51%)</li> <li>○ Floodplain conservation (50%)</li> </ul>
Percent who stated that yard and land maintenance practices affect the Carson River Watershed's environment.	<ul style="list-style-type: none"> <li>○ 72%</li> </ul>
Percent who are currently taking action to benefit the Carson River Watershed's environment.	<ul style="list-style-type: none"> <li>○ 67%</li> </ul>
Percent who plan to take or continue taking action to benefit the Carson River Watershed's environment over the next 5 years.	<ul style="list-style-type: none"> <li>○ 68%</li> </ul>
Percent who took the following actions over the past 5 years that are beneficial to the Carson River Watershed's environment:	<ul style="list-style-type: none"> <li>○ Picked up their pet's waste (88% of pet owners)</li> <li>○ Cleaned their watercraft or waders to avoid spreading aquatic invasive species (58% of boat owners)</li> <li>○ Modified outdoor irrigation to reduce water usage (73% of those who own a lawn)</li> <li>○ Replaced any major appliances or water fixtures with ones that reduce water usage (59%)</li> <li>○ Reduced fertilizer use (61% of those who own a lawn)</li> <li>○ Replaced turf with landscaping that uses less water (43% of those who own property with landscaping)</li> </ul>
Percent who took the following actions over the past 5 years that are detrimental to the Carson River Watershed's environment:	<ul style="list-style-type: none"> <li>○ Washed their car in their driveway (37% of car owners)</li> <li>○ Disposed of oil down the storm drain (1%)</li> </ul>
Top sources of information on local watershed or water quality issues.	<ul style="list-style-type: none"> <li>○ Newspapers (45%)</li> <li>○ TV (22%)</li> <li>○ Friends / family / word-of-mouth (11%)</li> </ul>

**CARSON RIVER WATERSHED—RESIDENTS WHOSE EDUCATION LEVEL IS AT  
LEAST A BACHELOR’S DEGREE:**

**DEMOGRAPHICS AND CHARACTERISTICS**

**28% of Carson River Watershed survey respondents had an education level of at least a bachelor’s degree.**

Gender	
Male	52%
Female	48%

Age*	
Mean	55.3 years
Median	57 years

Education Level	
Professional or doctorate degree	9%
Master's degree	22%
Bachelor's degree	70%
Associate's or trade school degree	0%
Some college or trade school	0%
High school graduate	0%
Not a high school graduate	0%

County of Residence	
Alpine County, CA	1%
Carson City, NV (Independent City)	40%
Churchill County, NV	10%
Douglas County, NV	35%
Lyon County, NV	13%
Storey County, NV	1%

Race/Ethnic Background	
White / Caucasian	82%
Hispanic / Latino	7%
Native American / Alaskan native	1%
East Asian	1%

Years of Residence (Mean = 18.1; Median = 16)	
50 years or more	2%
41-50 years	3%
31-40 years	6%
21-30 years	27%
16-20 years	15%
11-15 years	18%
6-10 years	10%
0-5 years	18%

**Note: “Other/don’t know/none of the above/refused” removed; results may not sum to 100%.**

**\*Survey was administered to those ages 18 and older.**

**CARSON RIVER WATERSHED— RESIDENTS WHOSE EDUCATION LEVEL IS AT  
LEAST A BACHELOR’S DEGREE:  
KEY MARKETING INFORMATION**

Percent who named water-related issues as the most important environmental issue facing their area of residence.	<ul style="list-style-type: none"> <li>○ 69%</li> </ul>
Percent who stated that drainage from their property flows into the Carson River.	<ul style="list-style-type: none"> <li>○ 13% (unprompted)</li> <li>○ 5% (when prompted to specify a water body)</li> </ul>
Percent who stated that they live in a watershed.	<ul style="list-style-type: none"> <li>○ 47%</li> </ul>
Percent who rated the health of the Carson River Watershed’s environment as very important (rating of 9 or 10 out of 10).	<ul style="list-style-type: none"> <li>○ 57%</li> </ul>
Percent who rate the following environmental actions as very important to the Carson River Watershed’s environment (rating of 9 or 10 out of 10):	<ul style="list-style-type: none"> <li>○ Reducing polluted runoff (66%)</li> <li>○ Protection of the river’s headwaters (61%)</li> <li>○ Human efforts to protect or conserve water (62%)</li> <li>○ Protection of habitat along the river (51%)</li> <li>○ Watershed outreach and education (53%)</li> <li>○ Addressing invasive species (41%)</li> <li>○ Floodplain conservation (46%)</li> </ul>
Percent who stated that yard and land maintenance practices affect the Carson River Watershed’s environment.	<ul style="list-style-type: none"> <li>○ 72%</li> </ul>
Percent who are currently taking action to benefit the Carson River Watershed’s environment.	<ul style="list-style-type: none"> <li>○ 72%</li> </ul>
Percent who plan to take or continue taking action to benefit the Carson River Watershed’s environment over the next 5 years.	<ul style="list-style-type: none"> <li>○ 78%</li> </ul>
Percent who took the following actions over the past 5 years that are beneficial to the Carson River Watershed’s environment:	<ul style="list-style-type: none"> <li>○ Picked up their pet’s waste (88% of pet owners)</li> <li>○ Cleaned their watercraft or waders to avoid spreading aquatic invasive species (78% of boat owners)</li> <li>○ Modified outdoor irrigation to reduce water usage (74% of those who own a lawn)</li> <li>○ Replaced any major appliances or water fixtures with ones that reduce water usage (70%)</li> <li>○ Reduced fertilizer use (68% of those who own a lawn)</li> <li>○ Replaced turf with landscaping that uses less water (42% of those who own property with landscaping)</li> </ul>
Percent who took the following actions over the past 5 years that are detrimental to the Carson River Watershed’s environment:	<ul style="list-style-type: none"> <li>○ Washed their car in their driveway (37% of car owners)</li> <li>○ Disposed of oil down the storm drain (1%)</li> </ul>
Top sources of information on local watershed or water quality issues.	<ul style="list-style-type: none"> <li>○ Newspapers (42%)</li> <li>○ TV (21%)</li> <li>○ Websites (21%)</li> </ul>

**CARSON RIVER WATERSHED—RESIDENTS WHOSE EDUCATION LEVEL IS  
LESS THAN A BACHELOR’S DEGREE:  
DEMOGRAPHICS AND CHARACTERISTICS**

**70% of Carson River Watershed survey respondents had an education level less than a bachelor’s degree.**

Gender	
Male	50%
Female	50%

Age*	
Mean	49.6 years
Median	51 years

Education Level	
Professional or doctorate degree	0%
Master's degree	0%
Bachelor's degree	0%
Associate's or trade school degree	22%
Some college or trade school	33%
High school graduate	42%
Not a high school graduate	3%

County of Residence	
Alpine County, CA	1%
Carson City, NV (Independent City)	34%
Churchill County, NV	22%
Douglas County, NV	21%
Lyon County, NV	22%
Storey County, NV	1%

Race/Ethnic Background	
White / Caucasian	84%
Hispanic / Latino	11%
Native American / Alaskan native	2%
East Asian	0%

Years of Residence (Mean = 17.2; Median = 15)	
50 years or more	3%
41-50 years	4%
31-40 years	9%
21-30 years	15%
16-20 years	14%
11-15 years	16%
6-10 years	19%
0-5 years	22%

**Note: “Other/don’t know/none of the above/refused” removed; results may not sum to 100%.**

**\*Survey was administered to those ages 18 and older.**

**CARSON RIVER WATERSHED— RESIDENTS WHOSE EDUCATION LEVEL IS  
LESS THAN A BACHELOR’S DEGREE:**

**KEY MARKETING INFORMATION**

Percent who named water-related issues as the most important environmental issue facing their area of residence.	<ul style="list-style-type: none"> <li>○ 60%</li> </ul>
Percent who stated that drainage from their property flows into the Carson River.	<ul style="list-style-type: none"> <li>○ 8% (unprompted)</li> <li>○ 2% (when prompted to specify a water body)</li> </ul>
Percent who stated that they live in a watershed.	<ul style="list-style-type: none"> <li>○ 35%</li> </ul>
Percent who rated the health of the Carson River Watershed’s environment as very important (rating of 9 or 10 out of 10).	<ul style="list-style-type: none"> <li>○ 52%</li> </ul>
Percent who rate the following environmental actions as very important to the Carson River Watershed’s environment (rating of 9 or 10 out of 10):	<ul style="list-style-type: none"> <li>○ Reducing polluted runoff (73%)</li> <li>○ Protection of the river’s headwaters (70%)</li> <li>○ Human efforts to protect or conserve water (71%)</li> <li>○ Protection of habitat along the river (59%)</li> <li>○ Watershed outreach and education (57%)</li> <li>○ Addressing invasive species (52%)</li> <li>○ Floodplain conservation (40%)</li> </ul>
Percent who stated that yard and land maintenance practices affect the Carson River Watershed’s environment.	<ul style="list-style-type: none"> <li>○ 66%</li> </ul>
Percent who are currently taking action to benefit the Carson River Watershed’s environment.	<ul style="list-style-type: none"> <li>○ 62%</li> </ul>
Percent who plan to take or continue taking action to benefit the Carson River Watershed’s environment over the next 5 years.	<ul style="list-style-type: none"> <li>○ 67%</li> </ul>
Percent who took the following actions over the past 5 years that are beneficial to the Carson River Watershed’s environment:	<ul style="list-style-type: none"> <li>○ Picked up their pet’s waste (87% of pet owners)</li> <li>○ Cleaned their watercraft or waders to avoid spreading aquatic invasive species (72% of boat owners)</li> <li>○ Modified outdoor irrigation to reduce water usage (71% of those who own a lawn)</li> <li>○ Replaced any major appliances or water fixtures with ones that reduce water usage (66%)</li> <li>○ Reduced fertilizer use (60% of those who own a lawn)</li> <li>○ Replaced turf with landscaping that uses less water (40% of those who own property with landscaping)</li> </ul>
Percent who took the following actions over the past 5 years that are detrimental to the Carson River Watershed’s environment:	<ul style="list-style-type: none"> <li>○ Washed their car in their driveway (42% of car owners)</li> <li>○ Disposed of oil down the storm drain (2%)</li> </ul>
Top sources of information on local watershed or water quality issues.	<ul style="list-style-type: none"> <li>○ Newspapers (34%)</li> <li>○ TV (23%)</li> <li>○ Websites (18%)</li> </ul>

**CARSON RIVER WATERSHED—RESIDENTS WHO HAVE LIVED IN THE AREA  
FOR THE MEDIAN OF 15 YEARS OR LONGER  
DEMOGRAPHICS AND CHARACTERISTICS**

**52% of Carson River Watershed survey respondents had lived in the area for the median of 15 years or longer.**

Gender	
Male	52%
Female	48%

Age*	
Mean	54.3 years
Median	56 years

Education Level	
Professional or doctorate degree	2%
Master's degree	7%
Bachelor's degree	22%
Associate's or trade school degree	12%
Some college or trade school	28%
High school graduate	27%
Not a high school graduate	3%

County of Residence	
Alpine County, CA	0%
Carson City, NV (Independent City)	42%
Churchill County, NV	21%
Douglas County, NV	26%
Lyon County, NV	10%
Storey County, NV	1%

Race/Ethnic Background	
White / Caucasian	84%
Hispanic / Latino	9%
Native American / Alaskan native	1%
East Asian	0%

Years of Residence (Mean = 26.9; Median = 24)	
50 years or more	4%
41-50 years	7%
31-40 years	15%
21-30 years	35%
16-20 years	27%
11-15 years	11%
6-10 years	0%
0-5 years	0%

**Note: “Other/don’t know/none of the above/refused” removed; results may not sum to 100%.**

**\*Survey was administered to those ages 18 and older.**

## CARSON RIVER WATERSHED—RESIDENTS WHO HAVE LIVED IN THE AREA FOR THE MEDIAN OF 15 YEARS OR LONGER

### KEY MARKETING INFORMATION

Percent who named water-related issues as the most important environmental issue facing their area of residence.	<ul style="list-style-type: none"> <li>○ 57%</li> </ul>
Percent who stated that drainage from their property flows into the Carson River.	<ul style="list-style-type: none"> <li>○ 8% (unprompted)</li> <li>○ 4% (when prompted to specify a water body)</li> </ul>
Percent who stated that they live in a watershed.	<ul style="list-style-type: none"> <li>○ 43%</li> </ul>
Percent who rated the health of the Carson River Watershed's environment as very important (rating of 9 or 10 out of 10).	<ul style="list-style-type: none"> <li>○ 52%</li> </ul>
Percent who rate the following environmental actions as very important to the Carson River Watershed's environment (rating of 9 or 10 out of 10):	<ul style="list-style-type: none"> <li>○ Reducing polluted runoff (68%)</li> <li>○ Protection of the river's headwaters (67%)</li> <li>○ Human efforts to protect or conserve water (67%)</li> <li>○ Protection of habitat along the river (52%)</li> <li>○ Watershed outreach and education (53%)</li> <li>○ Addressing invasive species (43%)</li> <li>○ Floodplain conservation (42%)</li> </ul>
Percent who stated that yard and land maintenance practices affect the Carson River Watershed's environment.	<ul style="list-style-type: none"> <li>○ 67%</li> </ul>
Percent who are currently taking action to benefit the Carson River Watershed's environment.	<ul style="list-style-type: none"> <li>○ 62%</li> </ul>
Percent who plan to take or continue taking action to benefit the Carson River Watershed's environment over the next 5 years.	<ul style="list-style-type: none"> <li>○ 66%</li> </ul>
Percent who took the following actions over the past 5 years that are beneficial to the Carson River Watershed's environment:	<ul style="list-style-type: none"> <li>○ Picked up their pet's waste (87% of pet owners)</li> <li>○ Cleaned their watercraft or waders to avoid spreading aquatic invasive species (66% of boat owners)</li> <li>○ Modified outdoor irrigation to reduce water usage (72% of those who own a lawn)</li> <li>○ Replaced any major appliances or water fixtures with ones that reduce water usage (66%)</li> <li>○ Reduced fertilizer use (62% of those who own a lawn)</li> <li>○ Replaced turf with landscaping that uses less water (38% of those who own property with landscaping)</li> </ul>
Percent who took the following actions over the past 5 years that are detrimental to the Carson River Watershed's environment:	<ul style="list-style-type: none"> <li>○ Washed their car in their driveway (40% of car owners)</li> <li>○ Disposed of oil down the storm drain (3%)</li> </ul>
Top sources of information on local watershed or water quality issues.	<ul style="list-style-type: none"> <li>○ Newspapers (45%)</li> <li>○ TV (20%)</li> <li>○ Websites (16%)</li> </ul>

**CARSON RIVER WATERSHED—RESIDENTS WHO HAVE LIVED IN THE AREA  
LESS THAN THE MEDIAN OF 15 YEARS  
DEMOGRAPHICS AND CHARACTERISTICS**

**48% of Carson River Watershed survey respondents had lived in the area less than the median of 15 years.**

Gender	
Male	49%
Female	51%

Age*	
Mean	48.1 years
Median	49 years

Education Level	
Professional or doctorate degree	3%
Master's degree	5%
Bachelor's degree	19%
Associate's or trade school degree	20%
Some college or trade school	18%
High school graduate	33%
Not a high school graduate	2%

County of Residence	
Alpine County, CA	1%
Carson City, NV (Independent City)	28%
Churchill County, NV	17%
Douglas County, NV	24%
Lyon County, NV	30%
Storey County, NV	1%

Race/Ethnic Background	
White / Caucasian	81%
Hispanic / Latino	10%
Native American / Alaskan native	3%
East Asian	1%

Years of Residence (Mean = 7.1; Median = 7)	
50 years or more	0%
41-50 years	0%
31-40 years	0%
21-30 years	0%
16-20 years	0%
11-15 years	23%
6-10 years	34%
0-5 years	43%

**Note: "Other/don't know/none of the above/refused" removed; results may not sum to 100%.**

**\*Survey was administered to those ages 18 and older.**

## CARSON RIVER WATERSHED—RESIDENTS WHO HAVE LIVED IN THE AREA LESS THAN THE MEDIAN OF 15 YEARS

### KEY MARKETING INFORMATION

Percent who named water-related issues as the most important environmental issue facing their area of residence.	<ul style="list-style-type: none"> <li>○ 65%</li> </ul>
Percent who stated that drainage from their property flows into the Carson River.	<ul style="list-style-type: none"> <li>○ 11% (unprompted)</li> <li>○ 2% (when prompted to specify a water body)</li> </ul>
Percent who stated that they live in a watershed.	<ul style="list-style-type: none"> <li>○ 33%</li> </ul>
Percent who rated the health of the Carson River Watershed's environment as very important (rating of 9 or 10 out of 10).	<ul style="list-style-type: none"> <li>○ 54%</li> </ul>
Percent who rate the following environmental actions as very important to the Carson River Watershed's environment (rating of 9 or 10 out of 10):	<ul style="list-style-type: none"> <li>○ Reducing polluted runoff (74%)</li> <li>○ Protection of the river's headwaters (66%)</li> <li>○ Human efforts to protect or conserve water (69%)</li> <li>○ Protection of habitat along the river (61%)</li> <li>○ Watershed outreach and education (59%)</li> <li>○ Addressing invasive species (54%)</li> <li>○ Floodplain conservation (42%)</li> </ul>
Percent who stated that yard and land maintenance practices affect the Carson River Watershed's environment.	<ul style="list-style-type: none"> <li>○ 67%</li> </ul>
Percent who are currently taking action to benefit the Carson River Watershed's environment.	<ul style="list-style-type: none"> <li>○ 68%</li> </ul>
Percent who plan to take or continue taking action to benefit the Carson River Watershed's environment over the next 5 years.	<ul style="list-style-type: none"> <li>○ 74%</li> </ul>
Percent who took the following actions over the past 5 years that are beneficial to the Carson River Watershed's environment:	<ul style="list-style-type: none"> <li>○ Picked up their pet's waste (88% of pet owners)</li> <li>○ Cleaned their watercraft or waders to avoid spreading aquatic invasive species (82% of boat owners)</li> <li>○ Modified outdoor irrigation to reduce water usage (70% of those who own a lawn)</li> <li>○ Replaced any major appliances or water fixtures with ones that reduce water usage (69%)</li> <li>○ Reduced fertilizer use (64% of those who own a lawn)</li> <li>○ Replaced turf with landscaping that uses less water (41% of those who own property with landscaping)</li> </ul>
Percent who took the following actions over the past 5 years that are detrimental to the Carson River Watershed's environment:	<ul style="list-style-type: none"> <li>○ Washed their car in their driveway (42% of car owners)</li> <li>○ Disposed of oil down the storm drain (0%)</li> </ul>
Top sources of information on local watershed or water quality issues.	<ul style="list-style-type: none"> <li>○ Newspapers (26.7%)</li> <li>○ TV (25%)</li> <li>○ Websites (22%)</li> </ul>

**CARSON RIVER WATERSHED—CARSON CITY RESIDENTS:  
DEMOGRAPHICS AND CHARACTERISTICS**

**35% of Carson River Watershed survey respondents lived in Carson City.**

Gender	
Male	46%
Female	54%

Age*	
Mean	53.2 years
Median	52 years

Education Level	
Professional or doctorate degree	3%
Master's degree	6%
Bachelor's degree	24%
Associate's or trade school degree	13%
Some college or trade school	27%
High school graduate	26%
Not a high school graduate	2%

County of Residence	
Alpine County, CA	0%
Carson City, NV (Independent City)	100%
Churchill County, NV	0%
Douglas County, NV	0%
Lyon County, NV	0%
Storey County, NV	0%

Race/Ethnic Background	
White / Caucasian	71%
Hispanic / Latino	19%
Native American / Alaskan native	3%
East Asian	1%

Years of Residence (Mean = 19.3; Median = 18)	
50 years or more	2%
41-50 years	5%
31-40 years	10%
21-30 years	25%
16-20 years	12%
11-15 years	16%
6-10 years	13%
0-5 years	17%

**Note: “Other/don’t know/none of the above/refused” removed; results may not sum to 100%.**

**\*Survey was administered to those ages 18 and older.**

**CARSON RIVER WATERSHED—CARSON CITY RESIDENTS:  
KEY MARKETING INFORMATION**

Percent who named water-related issues as the most important environmental issue facing their area of residence.	<ul style="list-style-type: none"> <li>○ 60%</li> </ul>
Percent who stated that drainage from their property flows into the Carson River.	<ul style="list-style-type: none"> <li>○ 10% (unprompted)</li> <li>○ 3% (when prompted to specify a water body)</li> </ul>
Percent who stated that they live in a watershed.	<ul style="list-style-type: none"> <li>○ 36%</li> </ul>
Percent who rated the health of the Carson River Watershed’s environment as very important (rating of 9 or 10 out of 10).	<ul style="list-style-type: none"> <li>○ 52%</li> </ul>
Percent who rate the following environmental actions as very important to the Carson River Watershed’s environment (rating of 9 or 10 out of 10):	<ul style="list-style-type: none"> <li>○ Reducing polluted runoff (69%)</li> <li>○ Protection of the river’s headwaters (66%)</li> <li>○ Human efforts to protect or conserve water (64%)</li> <li>○ Protection of habitat along the river (56%)</li> <li>○ Watershed outreach and education (54%)</li> <li>○ Addressing invasive species (45%)</li> <li>○ Floodplain conservation (37%)</li> </ul>
Percent who stated that yard and land maintenance practices affect the Carson River Watershed’s environment.	<ul style="list-style-type: none"> <li>○ 72%</li> </ul>
Percent who are currently taking action to benefit the Carson River Watershed’s environment.	<ul style="list-style-type: none"> <li>○ 66%</li> </ul>
Percent who plan to take or continue taking action to benefit the Carson River Watershed’s environment over the next 5 years.	<ul style="list-style-type: none"> <li>○ 71%</li> </ul>
Percent who took the following actions over the past 5 years that are beneficial to the Carson River Watershed’s environment:	<ul style="list-style-type: none"> <li>○ Picked up their pet’s waste (90% of pet owners)</li> <li>○ Cleaned their watercraft or waders to avoid spreading aquatic invasive species (70% of boat owners)</li> <li>○ Modified outdoor irrigation to reduce water usage (73% of those who own a lawn)</li> <li>○ Replaced any major appliances or water fixtures with ones that reduce water usage (65%)</li> <li>○ Reduced fertilizer use (66% of those who own a lawn)</li> <li>○ Replaced turf with landscaping that uses less water (42% of those who own property with landscaping)</li> </ul>
Percent who took the following actions over the past 5 years that are detrimental to the Carson River Watershed’s environment:	<ul style="list-style-type: none"> <li>○ Washed their car in their driveway (28% of car owners)</li> <li>○ Disposed of oil down the storm drain (1%)</li> </ul>
Top sources of information on local watershed or water quality issues.	<ul style="list-style-type: none"> <li>○ Newspapers (31%)</li> <li>○ TV (20%)</li> <li>○ Websites (18%)</li> </ul>

**CARSON RIVER WATERSHED—CHURCHILL COUNTY RESIDENTS:  
DEMOGRAPHICS AND CHARACTERISTICS**

**18% of Carson River Watershed survey respondents lived in Churchill County.**

Gender	
Male	37%
Female	63%

Age*	
Mean	46.4 years
Median	48 years

Education Level	
Professional or doctorate degree	1%
Master's degree	4%
Bachelor's degree	11%
Associate's or trade school degree	29%
Some college or trade school	23%
High school graduate	32%
Not a high school graduate	1%

County of Residence	
Alpine County, CA	0%
Carson City, NV (Independent City)	0%
Churchill County, NV	100%
Douglas County, NV	0%
Lyon County, NV	0%
Storey County, NV	0%

Race/Ethnic Background	
White / Caucasian	98%
Hispanic / Latino	1%
Native American / Alaskan native	1%
East Asian	0%

Years of Residence (Mean = 21.6; Median = 17)	
50 years or more	6%
41-50 years	6%
31-40 years	12%
21-30 years	9%
16-20 years	19%
11-15 years	15%
6-10 years	22%
0-5 years	11%

**Note: “Other/don’t know/none of the above/refused” removed; results may not sum to 100%.**

**\*Survey was administered to those ages 18 and older.**

**CARSON RIVER WATERSHED—CHURCHILL COUNTY RESIDENTS:  
KEY MARKETING INFORMATION**

Percent who named water-related issues as the most important environmental issue facing their area of residence.	<ul style="list-style-type: none"> <li>○ 74%</li> </ul>
Percent who stated that drainage from their property flows into the Carson River.	<ul style="list-style-type: none"> <li>○ 1% (unprompted)</li> <li>○ 0% (when prompted to specify a water body)</li> </ul>
Percent who stated that they live in a watershed.	<ul style="list-style-type: none"> <li>○ 40%</li> </ul>
Percent who rated the health of the Carson River Watershed's environment as very important (rating of 9 or 10 out of 10).	<ul style="list-style-type: none"> <li>○ 49%</li> </ul>
Percent who rate the following environmental actions as very important to the Carson River Watershed's environment (rating of 9 or 10 out of 10):	<ul style="list-style-type: none"> <li>○ Reducing polluted runoff (70%)</li> <li>○ Protection of the river's headwaters (77%)</li> <li>○ Human efforts to protect or conserve water (81%)</li> <li>○ Protection of habitat along the river (51%)</li> <li>○ Watershed outreach and education (61%)</li> <li>○ Addressing invasive species (50%)</li> <li>○ Floodplain conservation (38%)</li> </ul>
Percent who stated that yard and land maintenance practices affect the Carson River Watershed's environment.	<ul style="list-style-type: none"> <li>○ 85%</li> </ul>
Percent who are currently taking action to benefit the Carson River Watershed's environment.	<ul style="list-style-type: none"> <li>○ 68%</li> </ul>
Percent who plan to take or continue taking action to benefit the Carson River Watershed's environment over the next 5 years.	<ul style="list-style-type: none"> <li>○ 71%</li> </ul>
Percent who took the following actions over the past 5 years that are beneficial to the Carson River Watershed's environment:	<ul style="list-style-type: none"> <li>○ Picked up their pet's waste (81% of pet owners)</li> <li>○ Cleaned their watercraft or waders to avoid spreading aquatic invasive species (78% of boat owners)</li> <li>○ Modified outdoor irrigation to reduce water usage (73% of those who own a lawn)</li> <li>○ Replaced any major appliances or water fixtures with ones that reduce water usage (75%)</li> <li>○ Reduced fertilizer use (54% of those who own a lawn)</li> <li>○ Replaced turf with landscaping that uses less water (39% of those who own property with landscaping)</li> </ul>
Percent who took the following actions over the past 5 years that are detrimental to the Carson River Watershed's environment:	<ul style="list-style-type: none"> <li>○ Washed their car in their driveway (42% of car owners)</li> <li>○ Disposed of oil down the storm drain (0%)</li> </ul>
Top sources of information on local watershed or water quality issues.	<ul style="list-style-type: none"> <li>○ Newspapers (38%)</li> <li>○ TV (29%)</li> <li>○ Websites (28%)</li> </ul>

## CARSON RIVER WATERSHED—DOUGLAS COUNTY RESIDENTS: DEMOGRAPHICS AND CHARACTERISTICS

**25% of Carson River Watershed survey respondents lived in Douglas County.**

Gender	
Male	59%
Female	41%

Age*	
Mean	52.6 years
Median	55 years

Education Level	
Professional or doctorate degree	4%
Master's degree	10%
Bachelor's degree	27%
Associate's or trade school degree	11%
Some college or trade school	19%
High school graduate	26%
Not a high school graduate	4%

County of Residence	
Alpine County, CA	0%
Carson City, NV (Independent City)	0%
Churchill County, NV	0%
Douglas County, NV	100%
Lyon County, NV	0%
Storey County, NV	0%

Race/Ethnic Background	
White / Caucasian	90%
Hispanic / Latino	4%
Native American / Alaskan native	2%
East Asian	0%

Years of Residence (Mean = 16.0; Median = 15)	
50 years or more	1%
41-50 years	2%
31-40 years	5%
21-30 years	22%
16-20 years	17%
11-15 years	18%
6-10 years	10%
0-5 years	25%

**Note: “Other/don’t know/none of the above/refused” removed; results may not sum to 100%.**

**\*Survey was administered to those ages 18 and older.**

**CARSON RIVER WATERSHED—DOUGLAS COUNTY RESIDENTS:  
KEY MARKETING INFORMATION**

Percent who named water-related issues as the most important environmental issue facing their area of residence.	<ul style="list-style-type: none"> <li>○ 60%</li> </ul>
Percent who stated that drainage from their property flows into the Carson River.	<ul style="list-style-type: none"> <li>○ 8% (unprompted)</li> <li>○ 3% (when prompted to specify a water body)</li> </ul>
Percent who stated that they live in a watershed.	<ul style="list-style-type: none"> <li>○ 39%</li> </ul>
Percent who rated the health of the Carson River Watershed's environment as very important (rating of 9 or 10 out of 10).	<ul style="list-style-type: none"> <li>○ 56%</li> </ul>
Percent who rate the following environmental actions as very important to the Carson River Watershed's environment (rating of 9 or 10 out of 10):	<ul style="list-style-type: none"> <li>○ Reducing polluted runoff (71%)</li> <li>○ Protection of the river's headwaters (69%)</li> <li>○ Human efforts to protect or conserve water (65%)</li> <li>○ Protection of habitat along the river (60%)</li> <li>○ Watershed outreach and education (54%)</li> <li>○ Addressing invasive species (49%)</li> <li>○ Floodplain conservation (50%)</li> </ul>
Percent who stated that yard and land maintenance practices affect the Carson River Watershed's environment.	<ul style="list-style-type: none"> <li>○ 63%</li> </ul>
Percent who are currently taking action to benefit the Carson River Watershed's environment.	<ul style="list-style-type: none"> <li>○ 61%</li> </ul>
Percent who plan to take or continue taking action to benefit the Carson River Watershed's environment over the next 5 years.	<ul style="list-style-type: none"> <li>○ 70%</li> </ul>
Percent who took the following actions over the past 5 years that are beneficial to the Carson River Watershed's environment:	<ul style="list-style-type: none"> <li>○ Picked up their pet's waste (89% of pet owners)</li> <li>○ Cleaned their watercraft or waders to avoid spreading aquatic invasive species (75% of boat owners)</li> <li>○ Modified outdoor irrigation to reduce water usage (70% of those who own a lawn)</li> <li>○ Replaced any major appliances or water fixtures with ones that reduce water usage (63%)</li> <li>○ Reduced fertilizer use (67% of those who own a lawn)</li> <li>○ Replaced turf with landscaping that uses less water (42% of those who own property with landscaping)</li> </ul>
Percent who took the following actions over the past 5 years that are detrimental to the Carson River Watershed's environment:	<ul style="list-style-type: none"> <li>○ Washed their car in their driveway (48% of car owners)</li> <li>○ Disposed of oil down the storm drain (4%)</li> </ul>
Top sources of information on local watershed or water quality issues.	<ul style="list-style-type: none"> <li>○ Newspapers (48%)</li> <li>○ TV (23%)</li> <li>○ Websites (17%)</li> </ul>

**CARSON RIVER WATERSHED—LYON COUNTY RESIDENTS:  
DEMOGRAPHICS AND CHARACTERISTICS**

**20% of Carson River Watershed survey respondents lived in Lyon County.**

Gender	
Male	60%
Female	40%

Age*	
Mean	50.2 years
Median	51 years

Education Level	
Professional or doctorate degree	2%
Master's degree	4%
Bachelor's degree	14%
Associate's or trade school degree	13%
Some college or trade school	22%
High school graduate	42%
Not a high school graduate	3%

County of Residence	
Alpine County, CA	0%
Carson City, NV (Independent City)	0%
Churchill County, NV	0%
Douglas County, NV	0%
Lyon County, NV	100%
Storey County, NV	0%

Race/Ethnic Background	
White / Caucasian	79%
Hispanic / Latino	9%
Native American / Alaskan native	2%
East Asian	1%

Years of Residence (Mean = 11.9; Median = 10)	
50 years or more	0%
41-50 years	1%
31-40 years	5%
21-30 years	9%
16-20 years	10%
11-15 years	19%
6-10 years	26%
0-5 years	31%

**Note: “Other/don’t know/none of the above/refused” removed; results may not sum to 100%.**

**\*Survey was administered to those ages 18 and older.**

**CARSON RIVER WATERSHED—LYON COUNTY RESIDENTS:  
KEY MARKETING INFORMATION**

Percent who named water-related issues as the most important environmental issue facing their area of residence.	<ul style="list-style-type: none"> <li>○ 57%</li> </ul>
Percent who stated that drainage from their property flows into the Carson River.	<ul style="list-style-type: none"> <li>○ 17% (unprompted)</li> <li>○ 3% (when prompted to specify a water body)</li> </ul>
Percent who stated that they live in a watershed.	<ul style="list-style-type: none"> <li>○ 39%</li> </ul>
Percent who rated the health of the Carson River Watershed's environment as very important (rating of 9 or 10 out of 10).	<ul style="list-style-type: none"> <li>○ 48%</li> </ul>
Percent who rate the following environmental actions as very important to the Carson River Watershed's environment (rating of 9 or 10 out of 10):	<ul style="list-style-type: none"> <li>○ Reducing polluted runoff (74%)</li> <li>○ Protection of the river's headwaters (56%)</li> <li>○ Human efforts to protect or conserve water (64%)</li> <li>○ Protection of habitat along the river (57%)</li> <li>○ Watershed outreach and education (58%)</li> <li>○ Addressing invasive species (51%)</li> <li>○ Floodplain conservation (42%)</li> </ul>
Percent who stated that yard and land maintenance practices affect the Carson River Watershed's environment.	<ul style="list-style-type: none"> <li>○ 49%</li> </ul>
Percent who are currently taking action to benefit the Carson River Watershed's environment.	<ul style="list-style-type: none"> <li>○ 66%</li> </ul>
Percent who plan to take or continue taking action to benefit the Carson River Watershed's environment over the next 5 years.	<ul style="list-style-type: none"> <li>○ 67%</li> </ul>
Percent who took the following actions over the past 5 years that are beneficial to the Carson River Watershed's environment:	<ul style="list-style-type: none"> <li>○ Picked up their pet's waste (87% of pet owners)</li> <li>○ Cleaned their watercraft or waders to avoid spreading aquatic invasive species (62% of boat owners)</li> <li>○ Modified outdoor irrigation to reduce water usage (69% of those who own a lawn)</li> <li>○ Replaced any major appliances or water fixtures with ones that reduce water usage (68%)</li> <li>○ Reduced fertilizer use (58% of those who own a lawn)</li> <li>○ Replaced turf with landscaping that uses less water (30% of those who own property with landscaping)</li> </ul>
Percent who took the following actions over the past 5 years that are detrimental to the Carson River Watershed's environment:	<ul style="list-style-type: none"> <li>○ Washed their car in their driveway (55% of car owners)</li> <li>○ Disposed of oil down the storm drain (1%)</li> </ul>
Top sources of information on local watershed or water quality issues.	<ul style="list-style-type: none"> <li>○ Newspapers (27%)</li> <li>○ TV (20%)</li> <li>○ Websites (14%)</li> </ul>

## CENSUS DATA AND POPULATION PROJECTIONS

For any marketing and communications plan it is essential to understand the demographic makeup of the target population. Therefore, this section presents the following data for residents of the Carson River Watershed:

- (a) pie graphs reflecting current demographic data, and
- (b) trend graphs reflecting population and demographic projections.

### CURRENT CENSUS DATA

The graphs shown were built from the American Community Survey population estimates for the year 2014, as reported by the U.S. Census Bureau.

The age group distribution of the combined Carson River Watershed counties is modestly older than that of Nevada and the United States as a whole. This is reflected in the Watershed's higher estimated median age (44) than that of Nevada (37) or the U.S. (37).

The gender split of the Watershed (49% female) is not notably different than that of Nevada (50% female) or the U.S. (51% female).

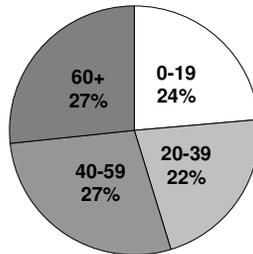
Among those who are age 25 or older, about 20% of those in the Carson River Watershed have an education level of a bachelor's degree or higher, compared to about 23% of those in Nevada and about 29% of those in the U.S. A similar pattern is observed when examining those who are age 18 or older: 18% of individuals in the Watershed have a bachelor's degree or higher, compared to 19% of those in Nevada and 25% of those in the U.S. However, the portion of individuals who have some college experience or have an Associate's degree in the Carson River Watershed (25+: 39% / 18+: 37%) is modestly larger than that of Nevada (34% / 33%) or the U.S. (29% / 30%).

The portion of Hispanic residents in the Carson River Watershed (16%) is similar to that of the U.S. as a whole (17%), but notably smaller than the portion of Hispanic residents in greater Nevada (27%).

The following pages show pie graphs reflecting this demographic information. (For convenience the Carson River Watershed is referred to as the CR Watershed on the graphs.)

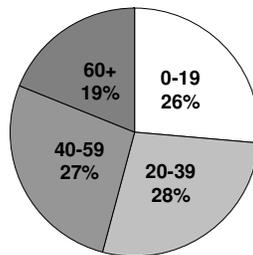
### CR Watershed Population Age Groups, 2014

Estimated Median Age: 44



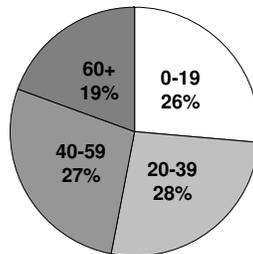
### Nevada Population Age Groups, 2014

Estimated Median Age: 37

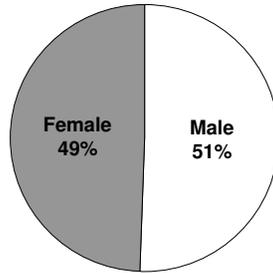


### National Population Age Groups, 2014

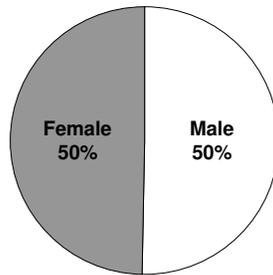
Estimated Median Age: 37



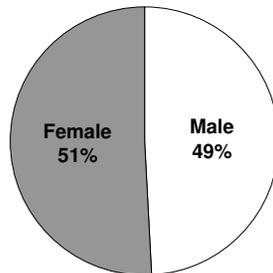
### CR Watershed Population Gender Split, 2014



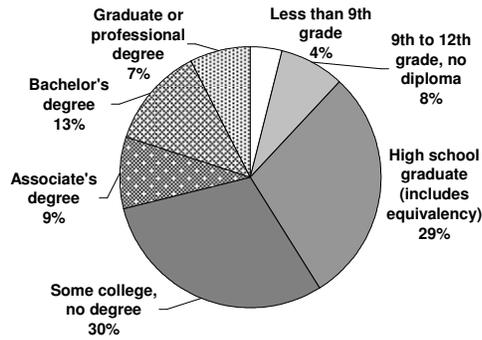
### Nevada Population Gender Split, 2014



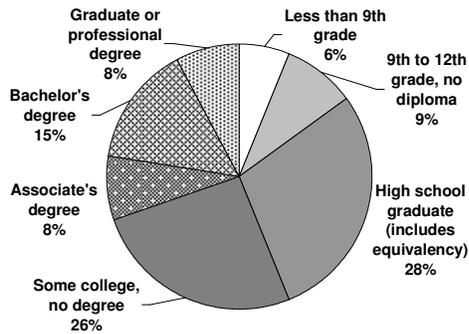
### National Population Gender Split, 2014



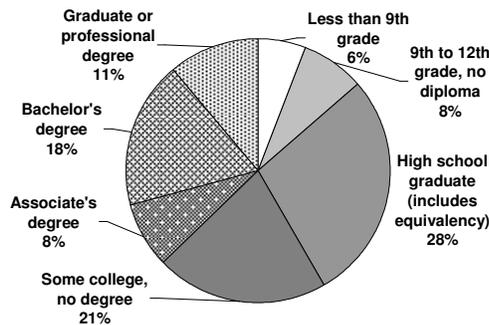
### 25+ CR Watershed Population Educational Breakdown, 2014



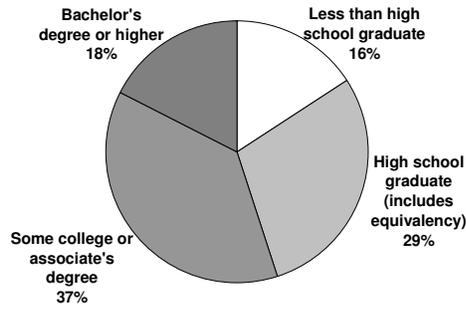
### 25+ Nevada Population Educational Breakdown, 2014



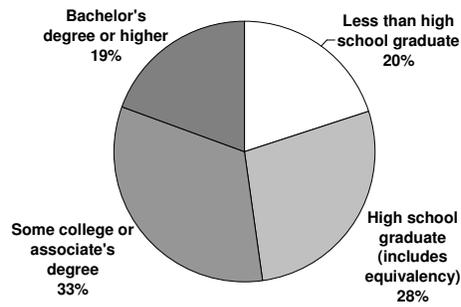
### 25+ National Population Educational Breakdown, 2014



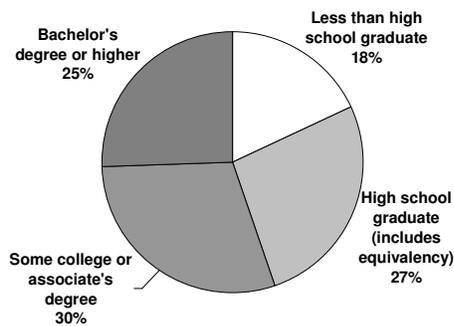
### 18+ CR Watershed Population Educational Breakdown, 2014



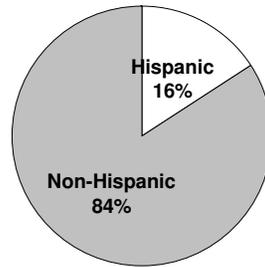
### 18+ Nevada Population Educational Breakdown, 2014



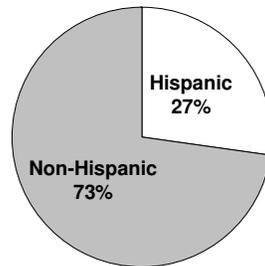
### 18+ National Population Educational Breakdown, 2014



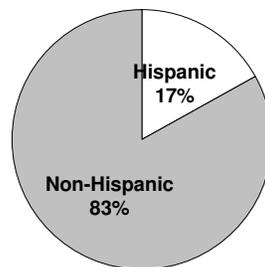
### CR Watershed Hispanic Population Breakdown, 2014



### Nevada Hispanic Population Breakdown, 2014



### National Hispanic Population Breakdown, 2014



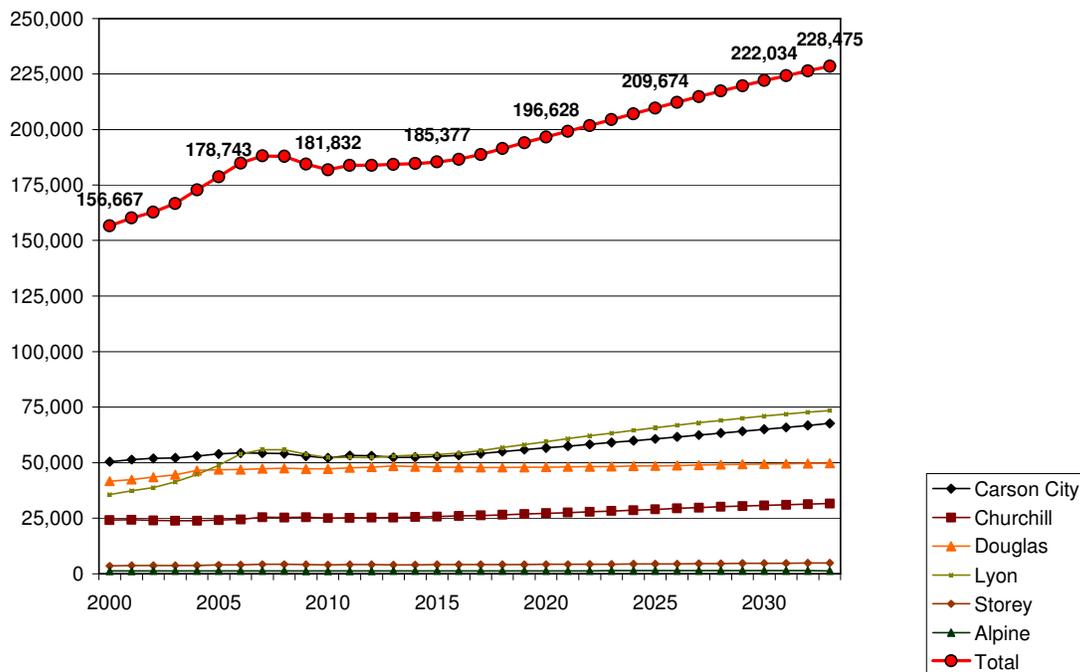
## POPULATION PROJECTIONS

The following figures show the estimated demographic trends of the 6 counties in the Carson River Watershed from 2000 to 2033, as published by the Nevada State Demographer's Office (2014) and the California State Department of Finance (2013, 2014). Estimations for the total population of the combined Carson River Watershed counties show a steady rise from 2015 to 2033, with the total population increasing by about 12,000 persons every 5 years and the majority of these gains being in Carson City and Lyon County.

The population of Hispanic residents in the Watershed also shows a steady rise from 2015 to 2033, with the total population increasing by about 5,000 persons every 5 years and the majority of these gains being again in Carson City and Lyon County. Accordingly, Hispanic residents are also predicted to make up an increasingly large portion of the Carson River Watershed (from about 15% in 2015 to about 22% in 2033), particularly in Carson City.

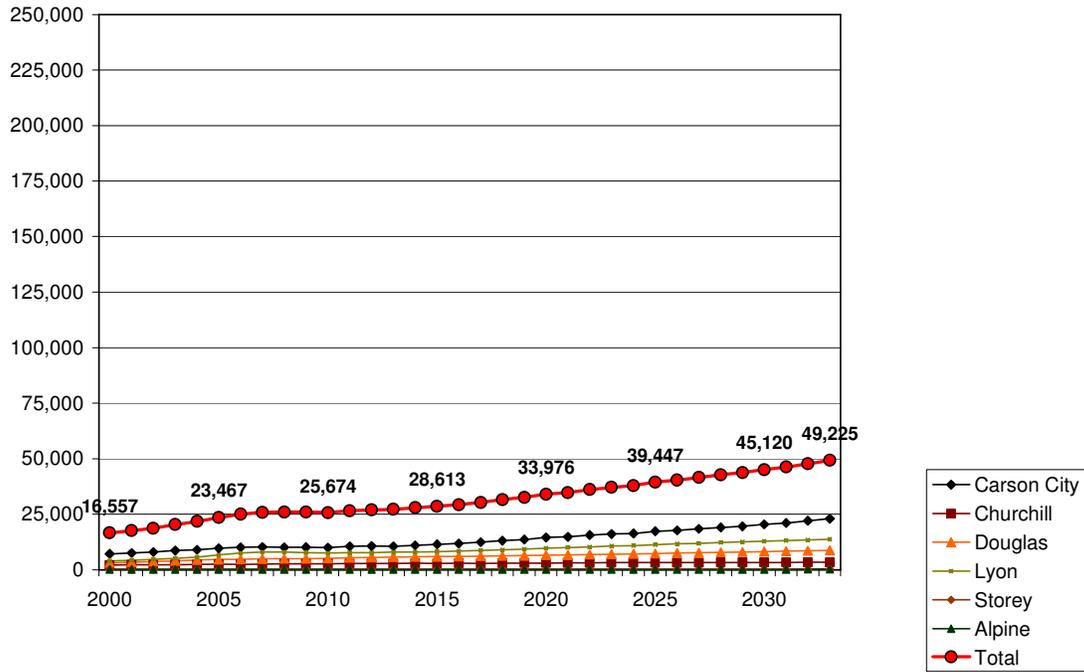
Projections of the age categories of the Watershed indicate a relatively flat and stable trend from 2015 to 2033, with the portion of older individuals increasing only modestly over the noted time period.

**Total Population**

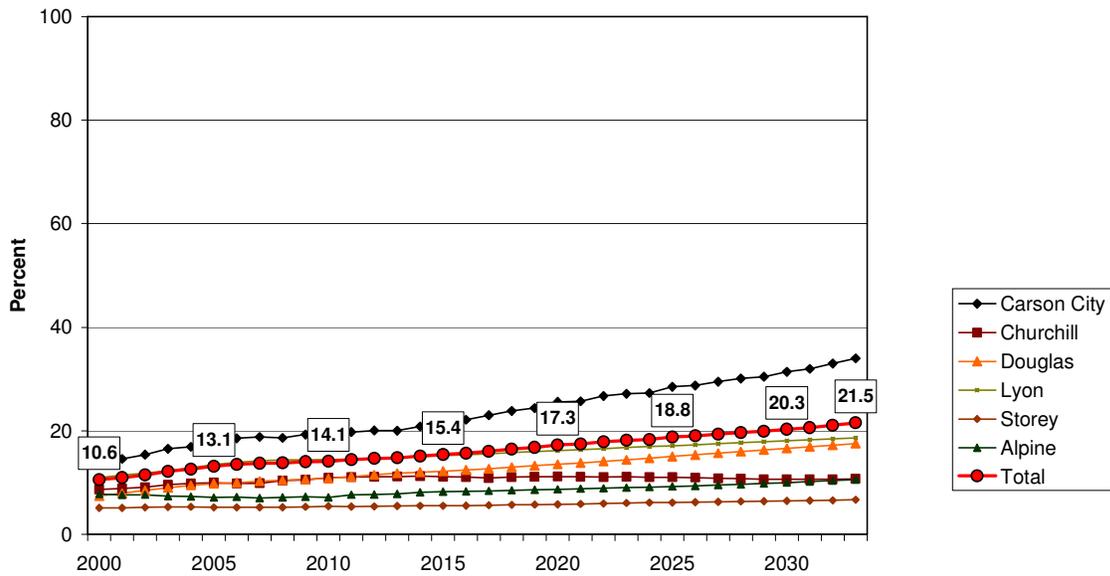


**Disclaimer:** When examining the data, the Nevada State Demographer's Office states "these estimates and projections may not add up to the total for the state and the county [due to] minor rounding differences," though they conclude that such differences are likely to be minor and do not have a significant impact on overall population distributions. Additionally, as cautioned by the California State Department of Finance, these projections "involve the use of assumptions about future events that may or may not occur... [and] may not accurately project the future population[s]. These projections should be used with an awareness of the inherent limitations of population projections in general and with an understanding of [their] procedures and assumptions." (Specific methodology relating to the formation of these estimations can be found in the relevant source publications).

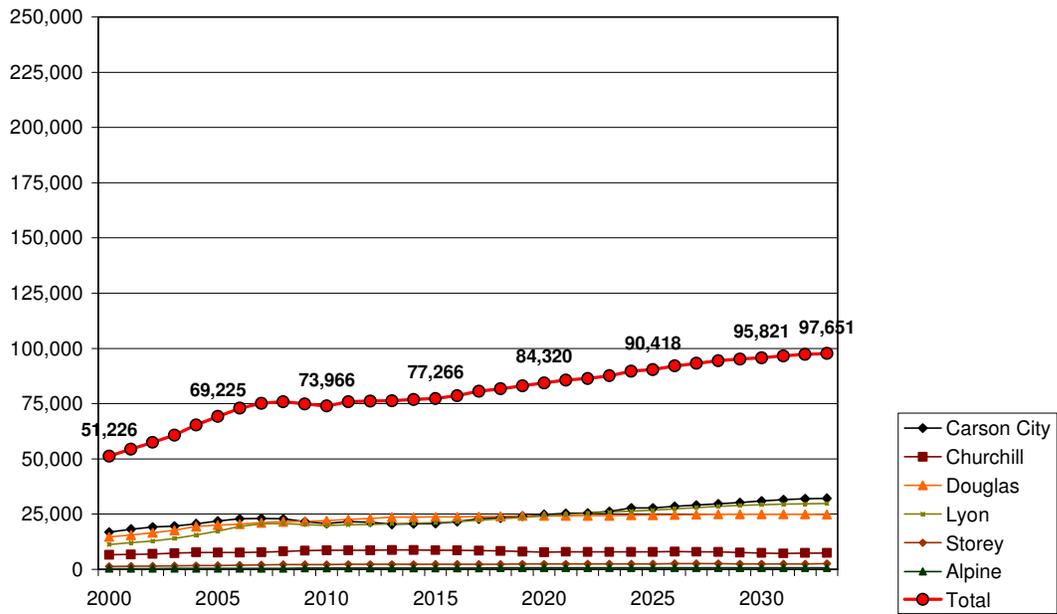
### Hispanic Population



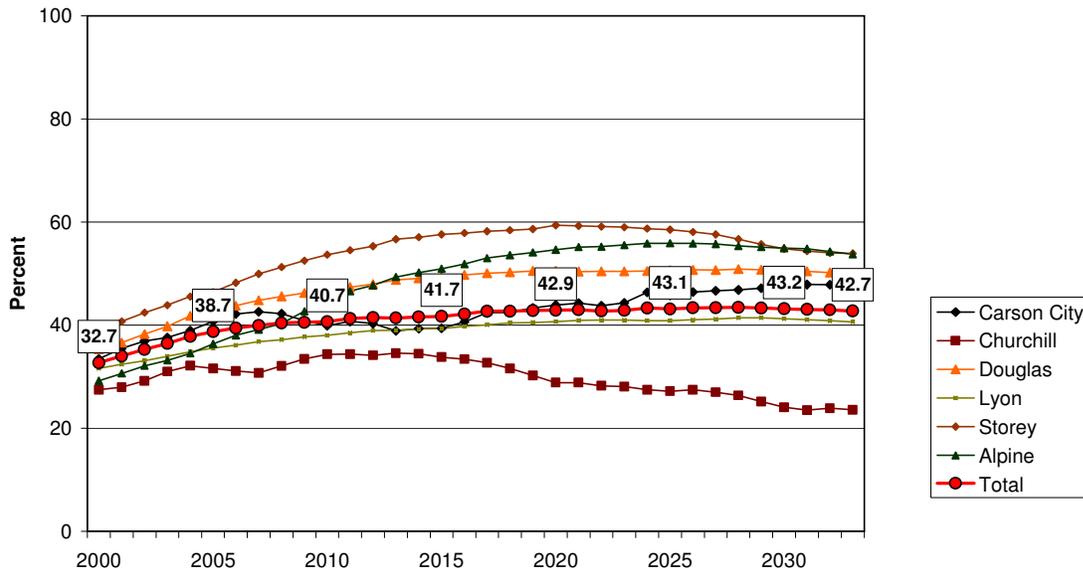
### Percent Hispanic Population



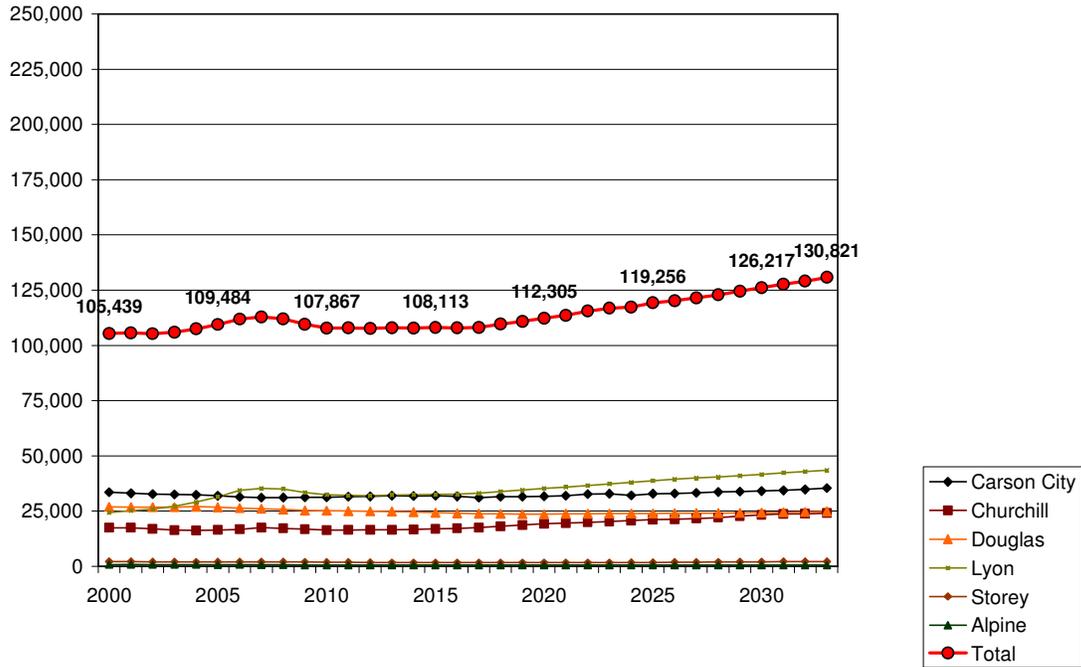
### 50+ Population



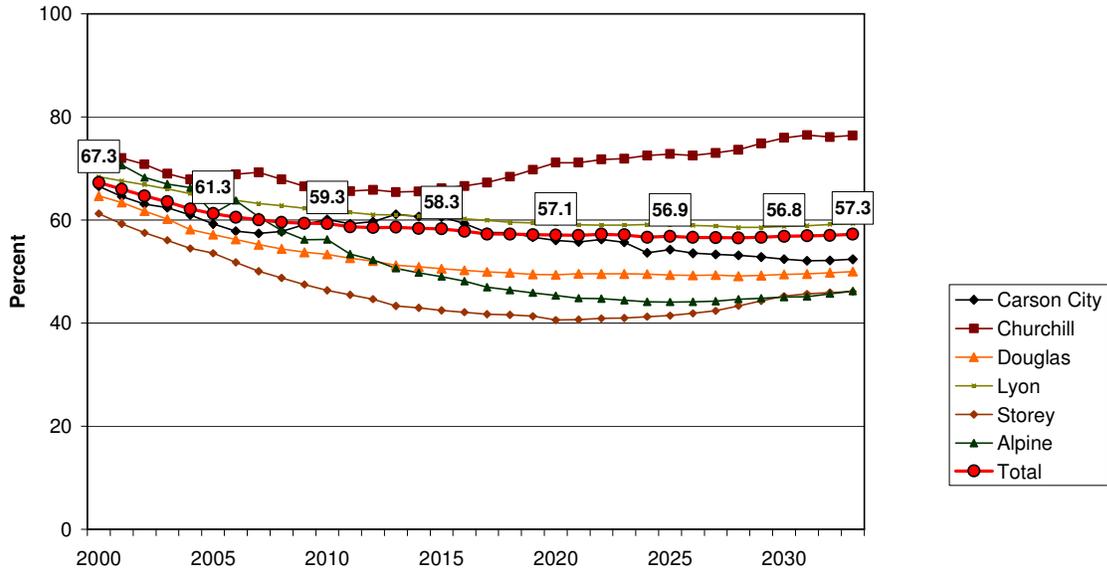
### Percent 50+ Population



### Under 50 Population



### Percent Under 50 Population



## FINDINGS AND RECOMMENDATIONS

### MESSAGE SELECTION PROCESS

The project survey's results were evaluated with an emphasis on data most relevant to the health of the Carson River Watershed. This evaluation subdivided the survey questionnaire into the following topic categories:

- **Awareness.** Questions that measured residents' knowledge levels regarding their watershed and water supply.
- **Attitudes.** Questions that measured residents' opinions on the importance of the watershed's environment and activities that impact its environment.
- **Behaviors.** Questions that measured residents' behaviors that have positive or negative effects on the watershed's environment.

Survey data were analyzed in two stages:

#### **Demographic Crosstabulations**

Researchers first reviewed the demographic correlation graphs from the survey report to note apparent demographic trends for key questions. Also, new crosstabulations were run to assist the examination of additional questions and demographic variables of interest. Several questions were selected for further evaluation of the demographic groups that most often or least often provided the given responses.

#### **Statistical Analyses**

For the selected questions and demographic variables, inferential analyses at a confidence level of 95% were used to identify the statistical significance of various demographic groups with study responses.

For all statistical tests herein, the null hypothesis is that there is no relationship between the predictor and criterion variables—that groups or values on a predictor variable do not differ significantly in relation to a criterion variable in the broader population (for example, that two gender groups, male and female, do not differ in regard to mean scores on an attitude scale). The  $p$ -value of a given test indicates the likelihood of the observed data under the assumption that the null hypothesis is true, and a very low  $p$ -value indicates that there is reasonable evidence to reject the null hypothesis in favor of the alternate hypothesis (that there is a relationship between the predictor and criterion variables in the broader population).

Throughout this report, a comment that a variable is *statistically significant* in relation to a response refers to the difference between that variable and its counterpart. For example, the notation that "female" is statistically significant in relation to another variable indicates that there is reasonable evidence (a low  $p$ -value) to reject the null hypothesis (that females and males have similar values on that variable or similar likelihoods of selecting a response in the greater population) in favor of the alternate hypothesis (that males and females have different values or different likelihoods of selection in the population).

In all, 13 messages and their target audiences were selected. The following pages present the recommended message topics and target audiences regarding residents' awareness, attitudes, and behaviors in relation to the Carson River Watershed. The recommendations include demographic correlation graphs, with summations of the demographic crosstabulations and statistical significance ( $p$ -score) of selected demographic variables.

## AWARENESS

Survey findings demonstrated that overall awareness is low among residents regarding the Carson River and its watershed. In an open-ended question, survey respondents were asked where drainage from their property goes: only 9% named the Carson River without prompting, with another 3% who named the river when prompted to specify a water body. Likewise, only 2% named the Carson River as a source of their tap water and only 38% stated that they live in a watershed.

### 1. Inform residents that reducing runoff from their property can improve water quality in the Carson River.

(Target audiences: Hispanic or Latino residents, Churchill County residents, female residents)

12% of all survey respondents stated that water from their property drains into the Carson River.

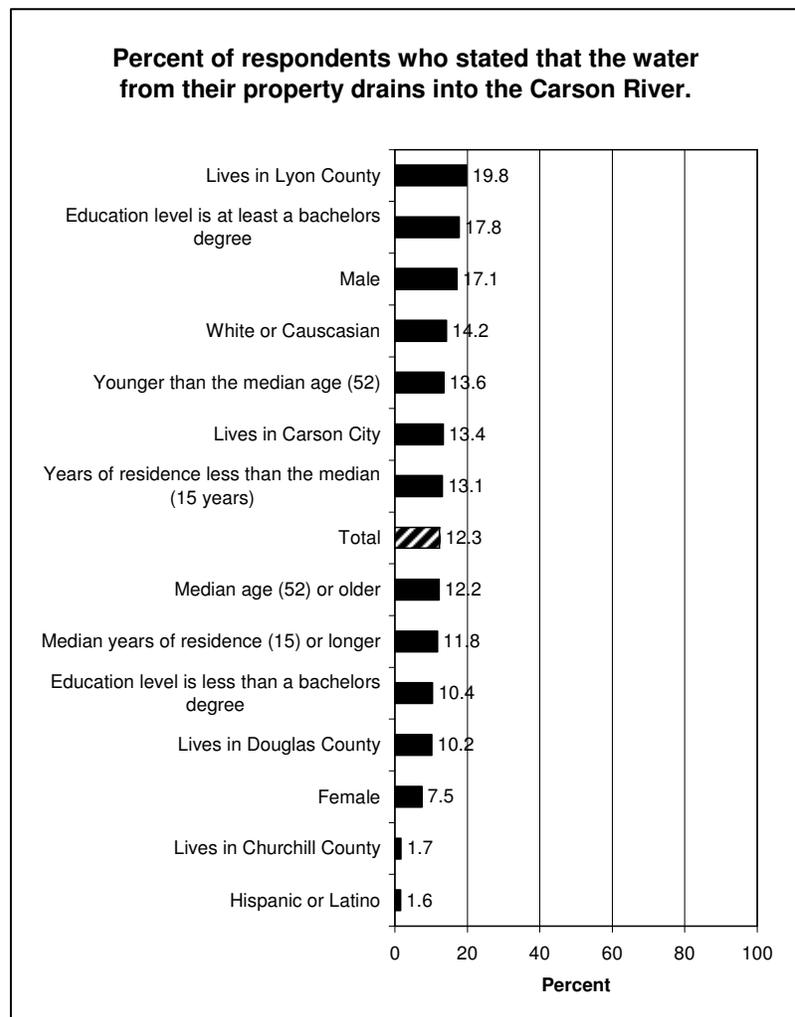
The demographic correlation graph shows this response to be lowest among Hispanic or Latino residents (2%), those who live in Churchill County (2%), and female residents (8%).

Throughout this report, a comment that a variable is *statistically significant* in relation to a response refers to the difference between that variable and its counterpart. For example, the likelihood of a response from female residents would be significantly different from that of male respondents.

Each of these demographic variables is statistically significant:

- Hispanic or Latino ( $p=0.044$ )
- Lives in Churchill County ( $p=0.004$ )
- Female ( $p=0.006$ )

(Recall that a  $p$ -value less than 0.050 demonstrates significance at a 95% confidence level.)



At the other end of the scale, 20% of those who live in Lyon County gave this response. This result is also statistically significant ( $p=0.033$ ).

It is important to note that demographic variables are analyzed independently for statistical significance. In other words, Hispanic or Latino residents and Churchill County residents are statistically significant groups for this question, but that is not the same as saying that *Hispanics or Latinos living in Churchill County* are a significant group.

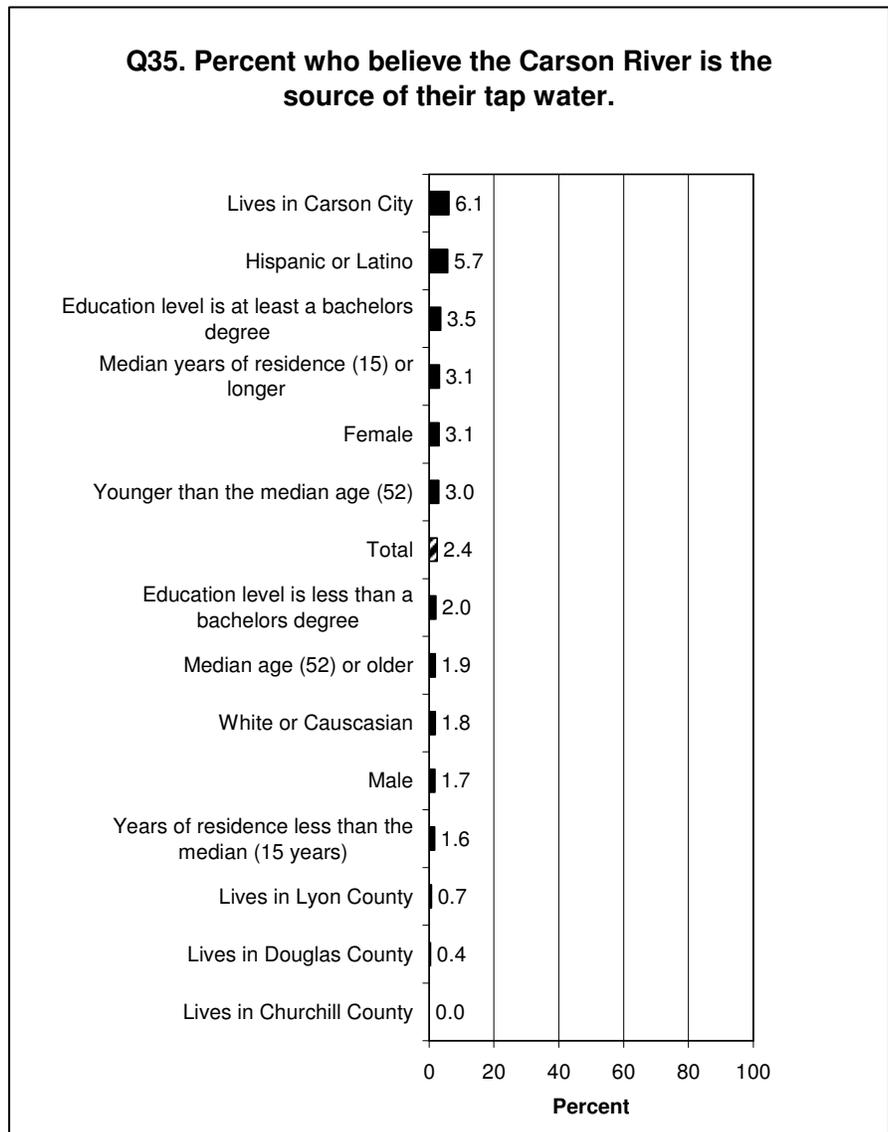
**2. Inform residents that the Carson River and its watershed is the source of their drinking water.**

**(Target audience: all)**

Depending on the area of the watershed in which the respondent lives, the river may be a major contributing source of his or her drinking water. Because a major goal of this outreach effort is to increase environmental stewardship of the Carson River and its watershed, the researchers recommend that the CRC educate its constituents on the possibility or probability that the Carson River is part of their drinking water supply.

Only 2% of survey respondents named the Carson River as the source of their tap water. Crosstabulations show that those who gave this response most often are those who live in Carson City (6%) and Hispanic or Latino residents (6%).

Regarding significance, the variable of Carson City residents meets the threshold ( $p < 0.001$ ) but the variable of Hispanic or Latino residents does not ( $p > 0.050$ ). Nonetheless, given the low percentages across all groups who named the Carson River as a water source, it is recommended that the CRC attempt to educate all watershed residents on the importance of protecting this river.



### 3. Inform residents that they live in a watershed.

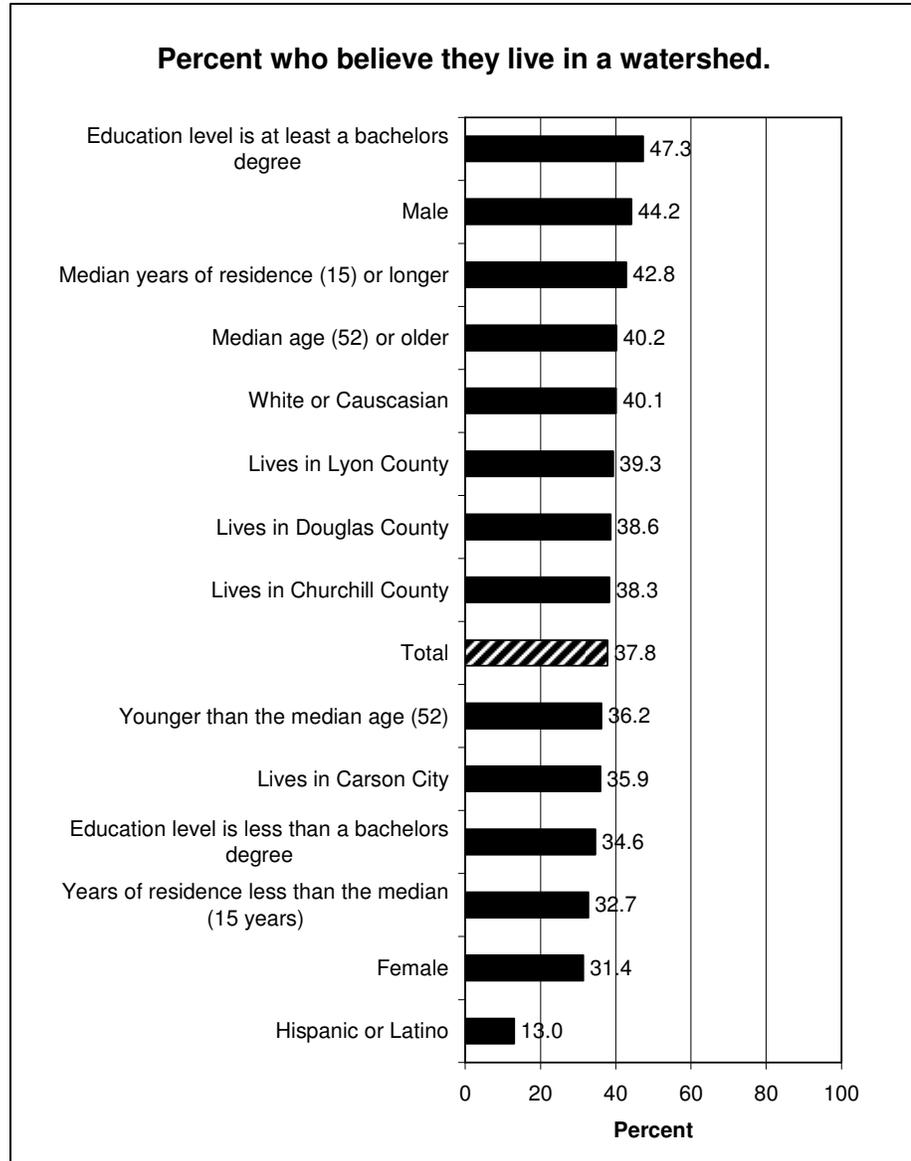
(Target audiences: Hispanic or Latino residents, female residents)

Although a sizable percentage of survey respondents stated that they live in a watershed (38%), a majority either said they do not live in a watershed (42%) or they do not know (20%).

The demographic groups who least often stated that they live in a watershed are Hispanic or Latino residents (13%) and female residents (31%).

Both of these groups are statistically significant:

Hispanic or Latino ( $p=0.005$ )  
Female ( $p=0.025$ )



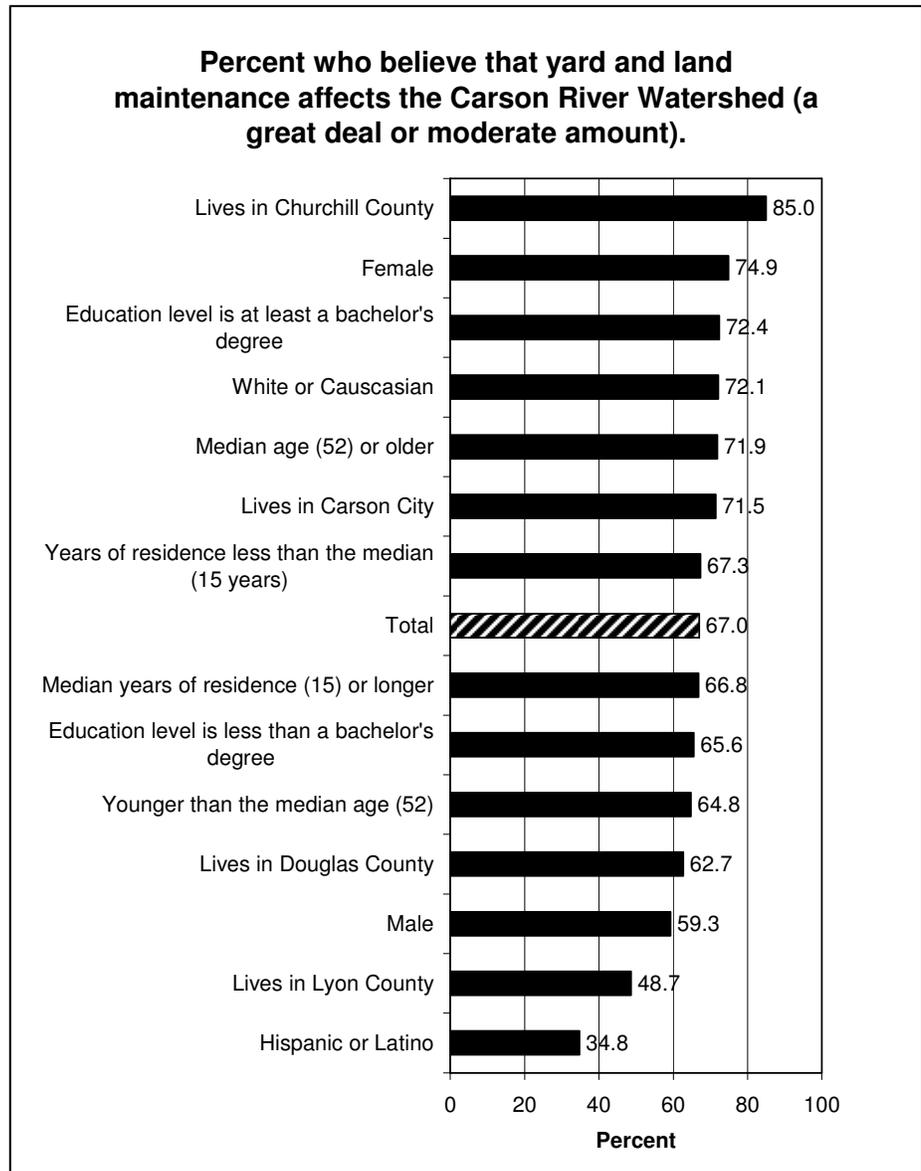
**4. Inform residents that yard and land maintenance affects the Carson River and its watershed.**

**(Target audiences: Hispanic or Latino residents, Lyon County residents, male residents)**

Two-thirds of survey respondents (67%) stated that yard and land maintenance activities affect the Carson River Watershed (the responses of “a great deal” and “a moderate amount” were combined for this analysis).

Demographic groups that least often gave this combined response are Hispanic or Latino residents (35%), those who live in Lyon County (49%), and male residents (59%). At the other end of the scale, those who live in Churchill County most often gave this response (85%).

All of these groups are statistically significant:  
 Hispanic or Latino ( $p < 0.001$ )  
 Lives in Lyon County ( $p = 0.002$ )  
 Male ( $p = 0.008$ )  
 Lives in Churchill County ( $p = 0.003$ )



## ATTITUDES

Although the project survey showed a general lack of awareness from residents regarding the Carson River and its watershed, a series of questions had encouraging results in showing that the health of the Carson River Watershed is very important to its residents. The general category “water-related issue” was by far the top response from residents when asked about the most important environmental issues facing their area.

Residents highly value the health of the Carson River watershed, rating its importance a mean of 8.3 out of 10 (45% rated it a 10). A series of factors related to the health of the Carson River watershed were also rated highly in importance, with the top mean ratings being given to reduction of polluted run-off, protection of the river’s headwaters, human efforts to protect or conserve water, and protection of habitat along the river.

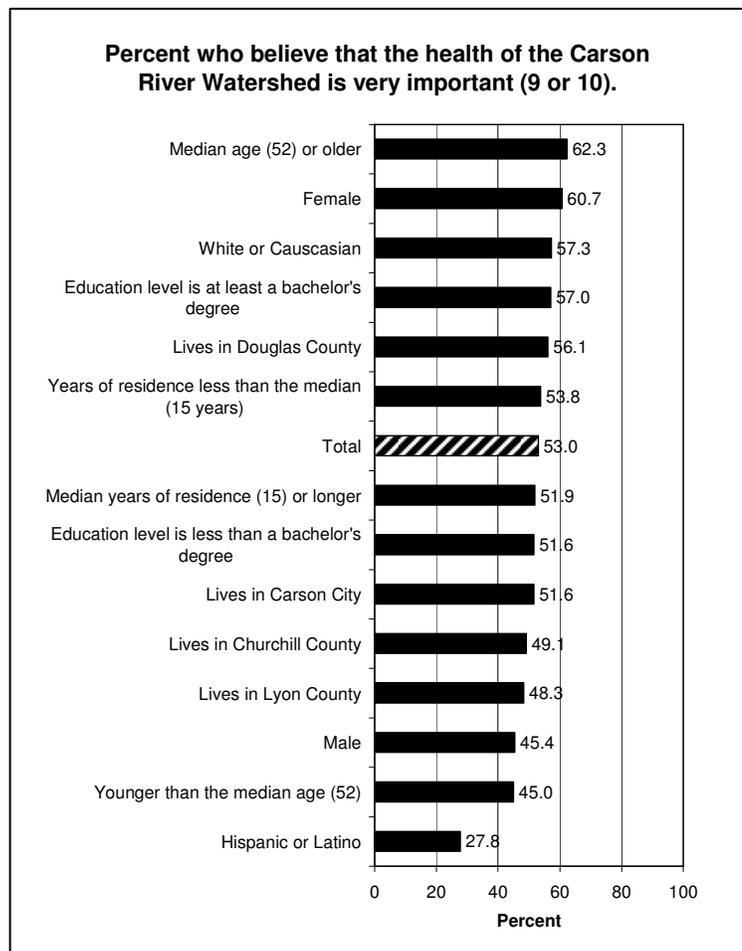
### 5. Outreach should focus on connecting residents’ health and quality of life to the health of their watershed.

(Target audiences: younger residents, Hispanic or Latino residents, male residents)

Most Carson River Watershed residents already value the importance of their watershed, and it is reasonable to believe that this attitude will increase in correlation to increased awareness.

Crosstabulations show that the demographic groups that least often rated the importance of the Carson River Watershed’s health a 9 or 10 out of 10 are Hispanic or Latino residents (28%, compared to 53% of all survey respondents), those younger than the median age of 52 years (45%), and male residents (45%).

Significance testing was *continuous* for the ratings from 0 to 10; that is, demographic variables were analyzed against the spectrum of ratings rather than the grouping of 9 and 10 scores as shown in this demographic correlation graph. Likewise, testing was continuous regarding the respondents’ ages; ages were not analyzed based on the binary groupings (above and below the median age) as shown in this graph.



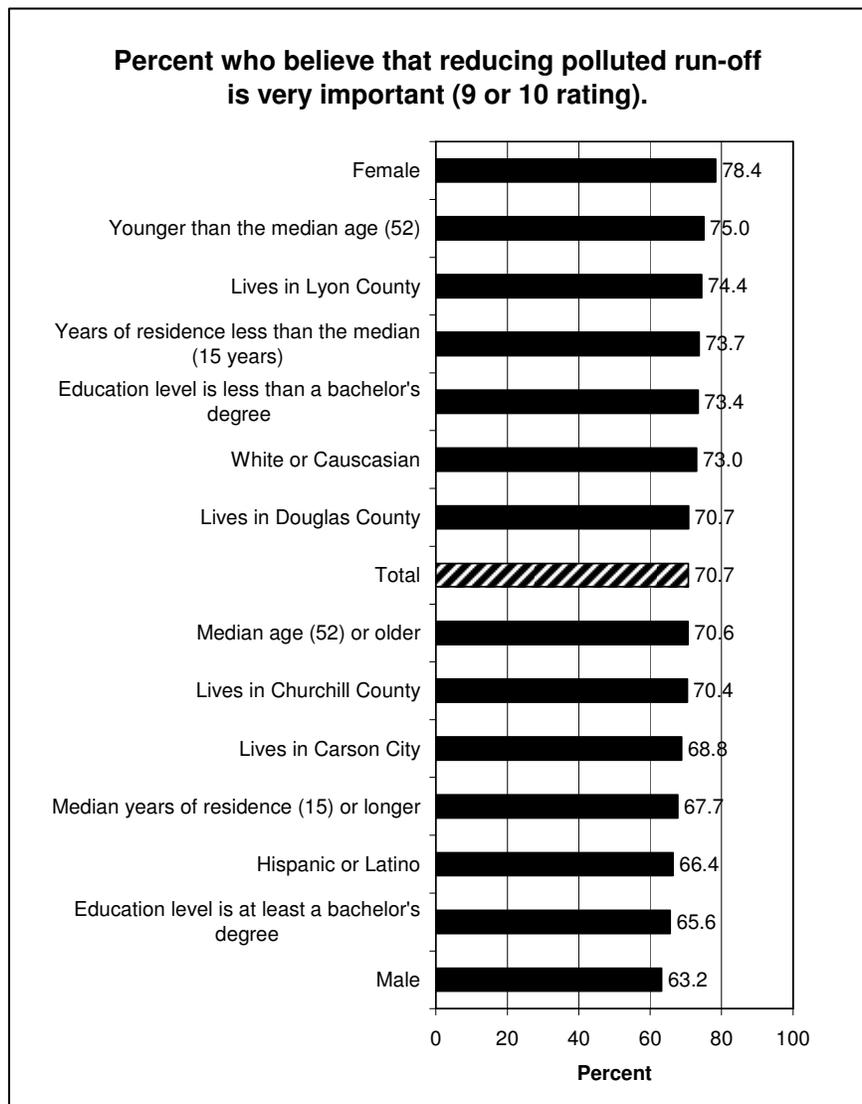
Of those three demographic groups, age meets the threshold for statistical significance ( $p=0.049$ ) but Hispanic or Latino residents ( $p=0.096$ ) and male residents ( $p=0.204$ ) do not.

In other words, as the residents get older, their ratings get higher. The CRC should target younger residents regarding the importance of the Carson River Watershed’s health.

**6. Residents should be educated on the importance of reducing polluted run-off.**  
**(Target audience: male residents)**

Following the above question, in which the survey asked respondents for an overall rating of importance regarding the health of the Carson River Watershed, a series of questions asked respondents to rate the importance of specific environmental actions. A majority of respondents (71%) stated that reducing polluted run-off is very important (rating of 9 or 10 out of 10).

Male residents were the least likely to rate the importance a 9 or 10 (63%). The gender breakdown is significant ( $p=0.002$ ), so male residents should be targeted for outreach on this topic.



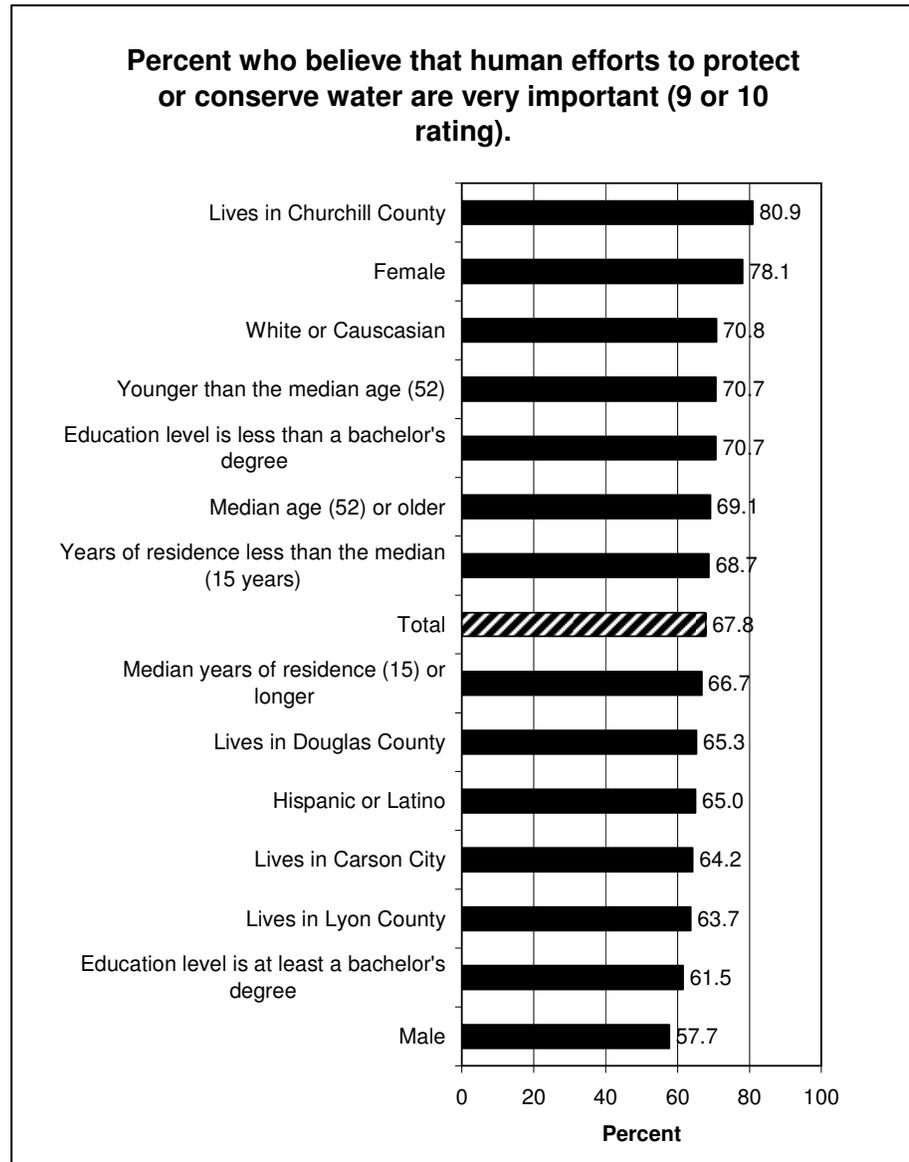
## 7. Emphasize that human efforts to protect water quality and avoid wasting water are very important.

(Target audience: male residents)

Two-thirds of survey respondents (68%) believe that human efforts to protect or conserve water are very important.

Again, male residents were the least likely to rate the importance a 9 or 10 (58%). The gender breakdown is significant ( $p < 0.001$ ).

In all, the project survey had a series of 10 questions asking respondents to rate the importance of specific environmental actions. On all the topics except floodplain conservation, male residents gave lower ratings than female residents. Some of the question/variable analyses met the threshold for statistical significance and some did not (see the tabulations on page 76), but the general conclusion is that male residents are in greater need for outreach regarding the importance of actions that affect the health of the Carson River Watershed.



**BEHAVIORS**

As with the attitudinal questions in the 2015 project survey, results from the questions regarding resident behaviors are encouraging. A majority of survey respondents (65%) have taken action over the past 5 years to protect or improve the health of the Carson River Watershed. Also on a positive note, across all demographics there are slightly higher percentages who state they plan to take or continue taking action over the next 5 years (for more detail, refer to the tables in the previous section titled “Demographic and Marketing Information for Key Audiences”). It will be interesting to note, in a future trends survey to evaluate the effectiveness of the marketing program, if the percentages of residents who take action will closely match those who currently state that they plan to do so.

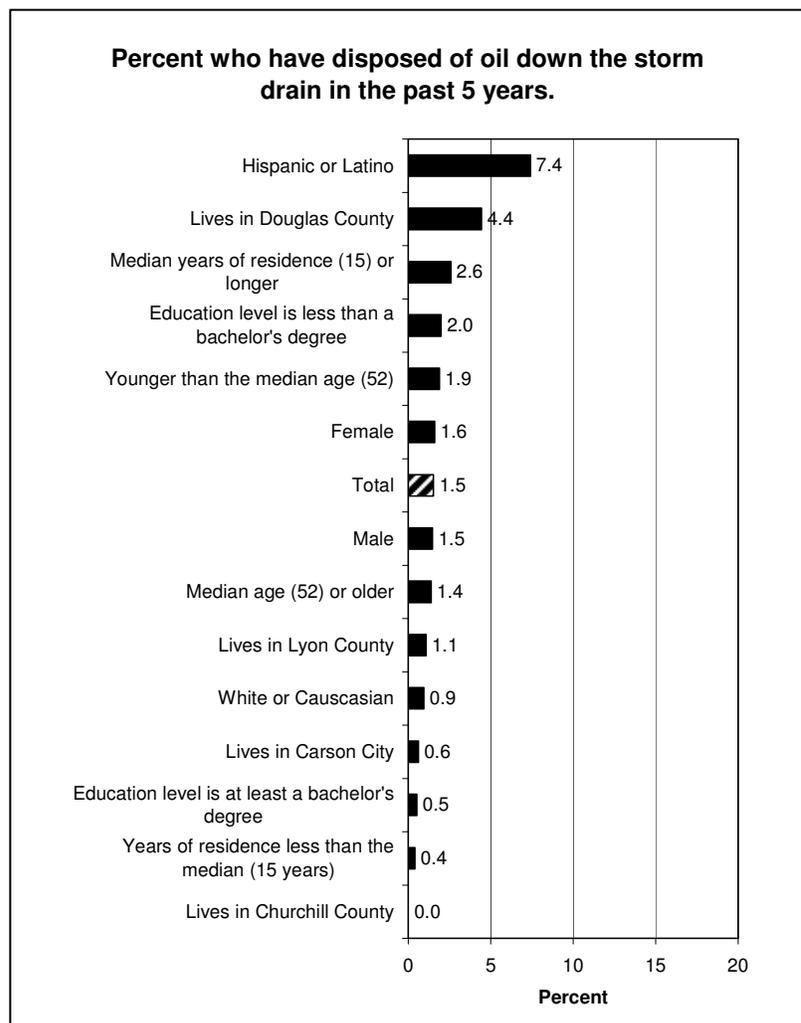
**8. Emphasize the environmental hazards of dumping oil on the land or down a storm drain. (Target audiences: Hispanic or Latino residents, Douglas County residents)**

Fortunately, only 2% of survey respondents stated that they disposed of oil down a storm drain over the past 5 years. However, given the extreme harm that this behavior does to the environment, it is critical that this percentage be driven as close to zero as possible.

The demographic correlation graph shows that the groups who most often disposed of oil down a storm drain over the past 5 years are Hispanic or Latino residents (7%) and those who live in Douglas County (4%).

Both of those groups are significant:  
 Hispanic or Latino ( $p=0.007$ )  
 Lives in Douglas County ( $p=0.019$ )

It is highly recommended that this topic be included in the “first wave” of marketing efforts.



**9. Inform residents that washing their car in the driveway is harmful to the watershed.  
(Target audience: Lyon County residents)**

A substantial number of survey respondents who own vehicles (41%) have washed their car in the driveway within the past 5 years.

The demographic groups who most often washed their car in the driveway in the past 5 years are those who live in Lyon County (55%), those who live in Douglas County (48%), and those younger than the mean age of 52 years (48%).

At the positive end of the scale, those who least often took this action are those who live in Carson City (28%) and Hispanic or Latino residents (34%).

These demographic groups are significant:

Lives in Lyon County  
( $p=0.033$ )

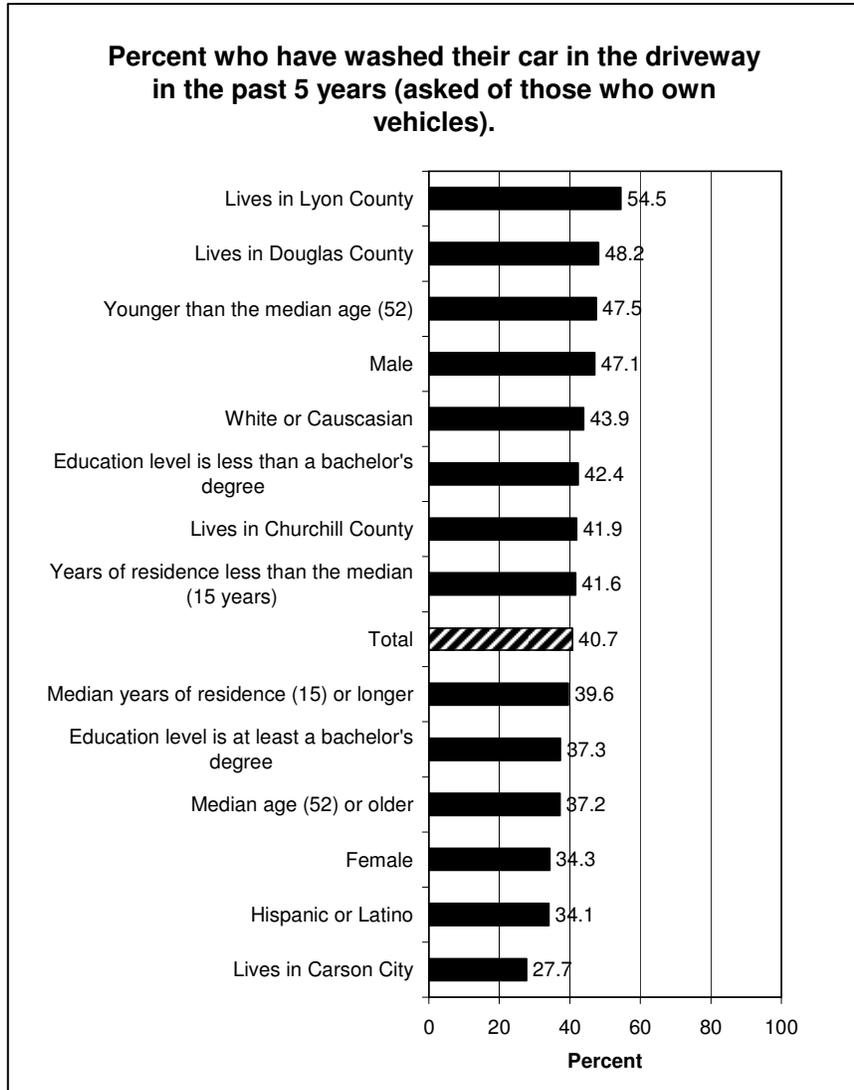
Lives in Carson City  
( $p=0.002$ )

These groups are not significant:

Lives in Douglas County  
( $p=0.165$ )

Younger residents  
( $p=0.159$ )

Hispanic or Latino ( $p=0.514$ )



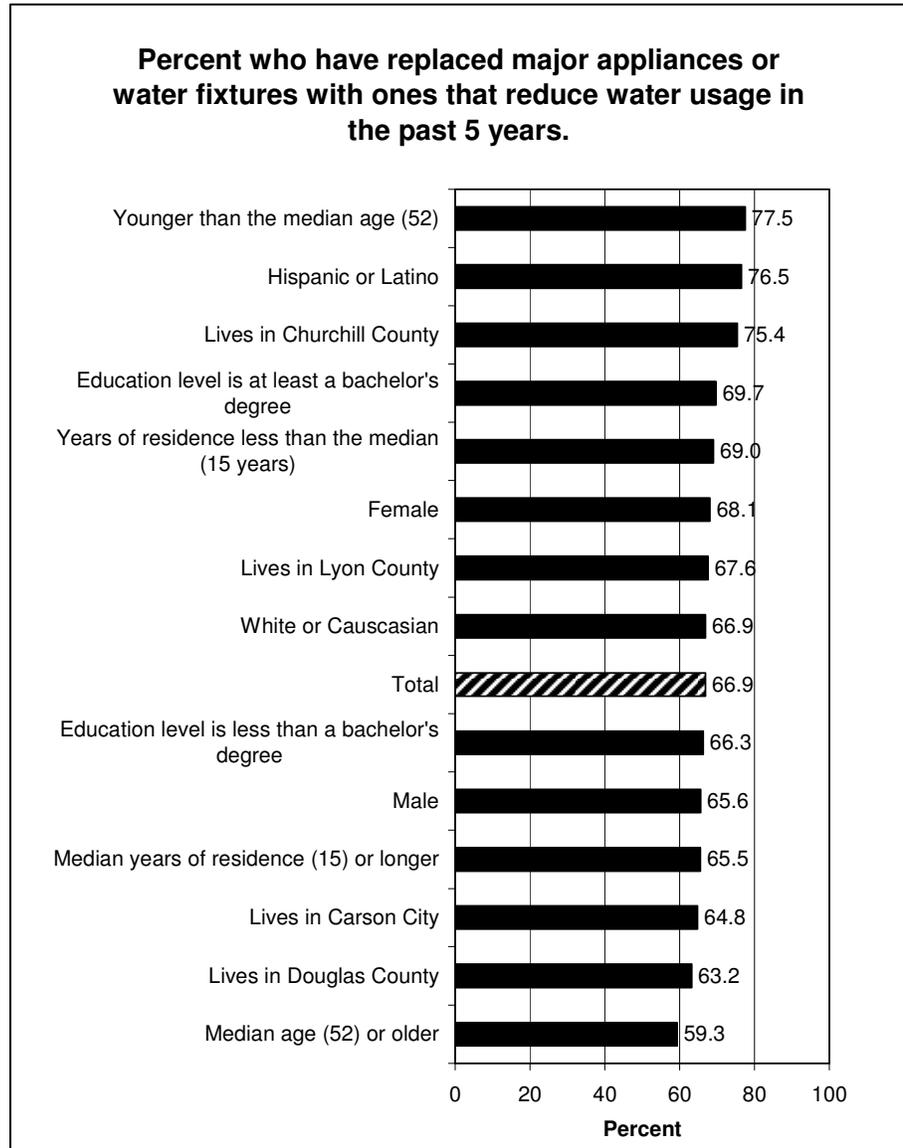
**10. Encourage residents to replace major appliances or water fixtures with ones that reduce water usage.**  
**(Target audience: older residents)**

Two-thirds of survey respondents (67%) have replaced major appliances or water fixtures with ones that reduce water usage in the past 5 years.

The demographic groups who most often replaced appliances or fixtures are those younger than the median age of 52 years (78%), Hispanic or Latino residents (77%), and those who live in Churchill County (75%).

Statistical analyses showed significance based on age ( $p=0.004$ ) but not for Hispanic or Latino residents ( $p=0.242$ ) or those who live in Churchill County ( $p=0.131$ ).

(Recall that statistical analysis based on age is continuous (younger residents are more likely to take this action) and not performed on the binary age categories shown in this graph.)



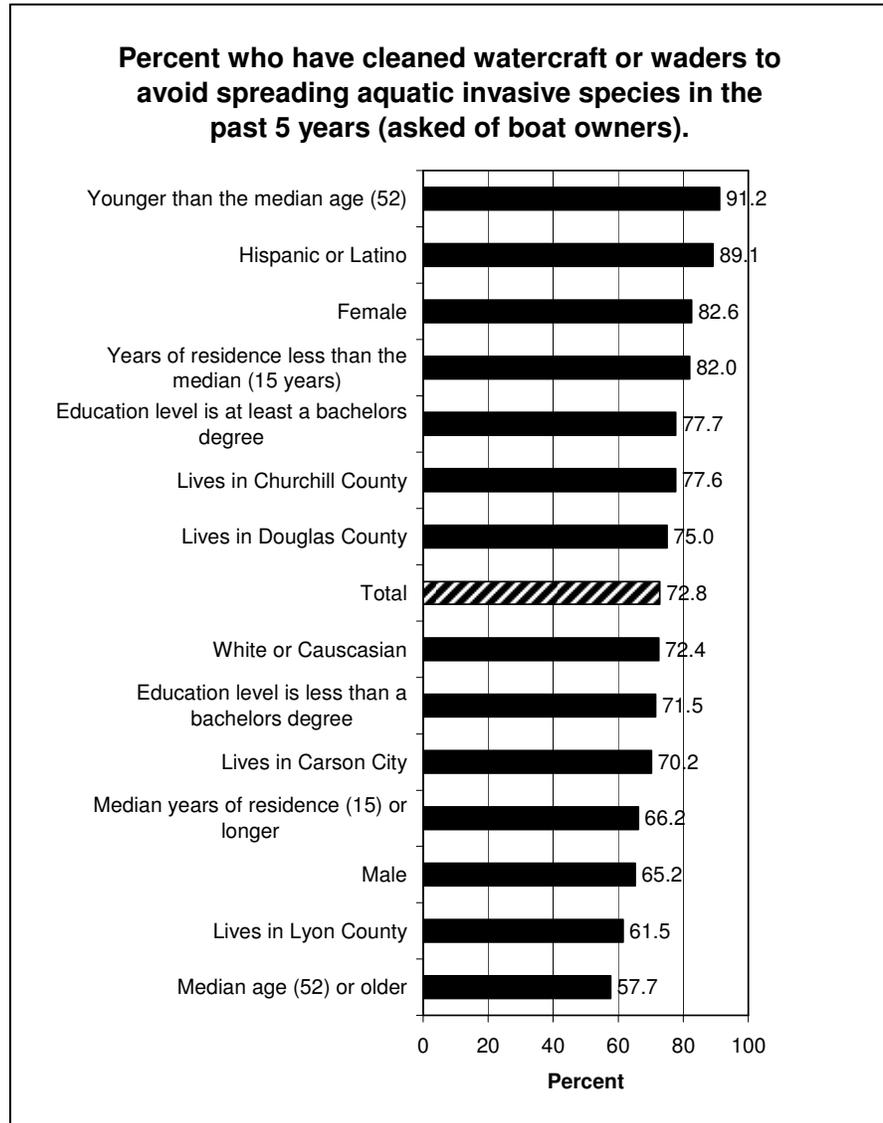
## 11. Encourage boat owners to clean their watercraft to avoid spreading aquatic invasive species.

(Target audience: older boat owners)

A solid majority of boat owners (73%) have cleaned their watercraft to avoid spreading aquatic invasive species in the past 5 years.

Among boat owners, the demographic groups who most often took this action are those younger than the median age of 52 years (91%), Hispanic or Latino residents (89%), and female residents (83%).

Statistical analyses showed significance based on age ( $p=0.021$ ) but not for Hispanic or Latino residents ( $p=0.509$ ) or female residents ( $p=0.130$ ).

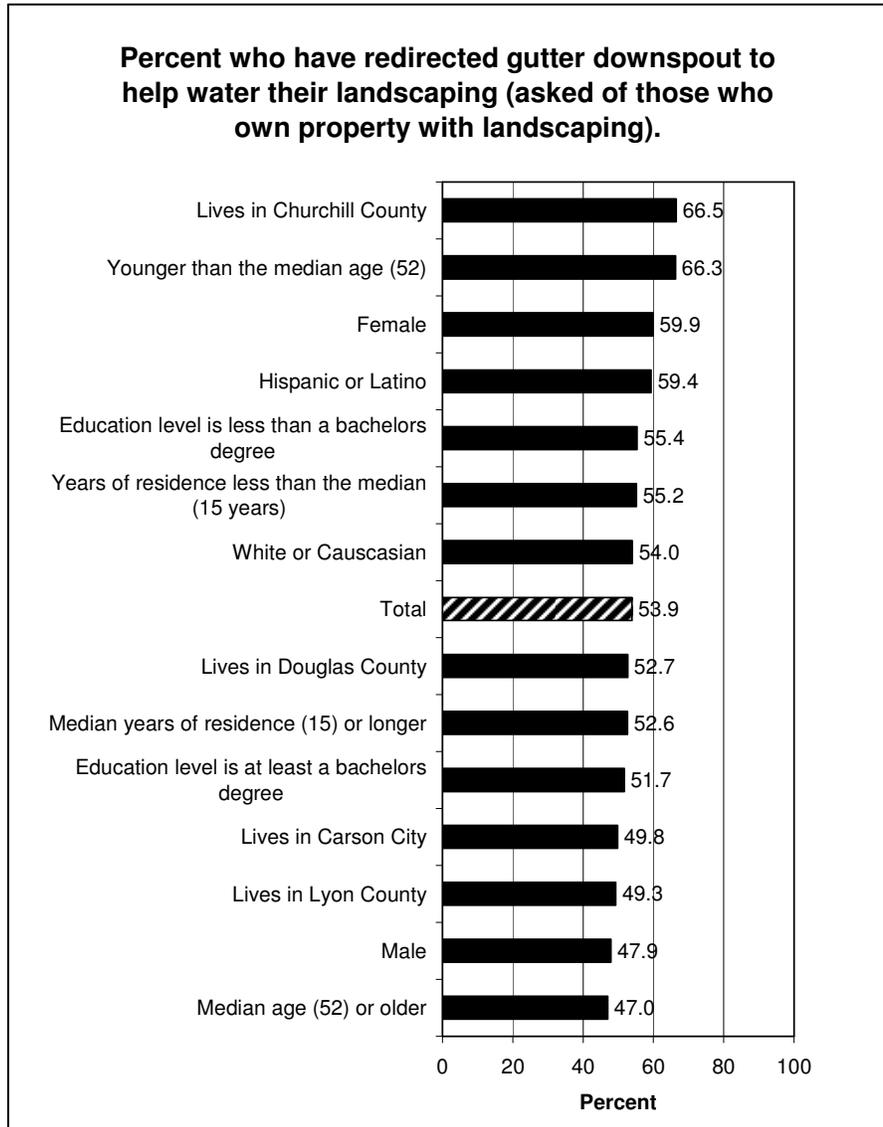


**12. Encourage property owners to redirect their gutter downspouts to help water their landscaping.**  
**(Target audience: older residents)**

A slight majority of survey respondents who own property (54%) have redirected their gutter downspouts to help water their landscaping.

Among property owners, the demographic groups who most often took this action are those who live in Churchill County (67%), those younger than the median age of 52 years (66%), and female residents (60%).

Statistical analyses showed significance based on age ( $p=0.009$ ) but not for those who live in Churchill County ( $p=0.059$ ) or female residents ( $p=0.077$ ).



**13. Inform residents that appropriately controlling noxious weeds can improve the health of the Carson River and its watershed.**  
**(Target audience: Carson City residents)**

A majority of survey respondents who own property (70%) have removed noxious or invasive weeds on their property.

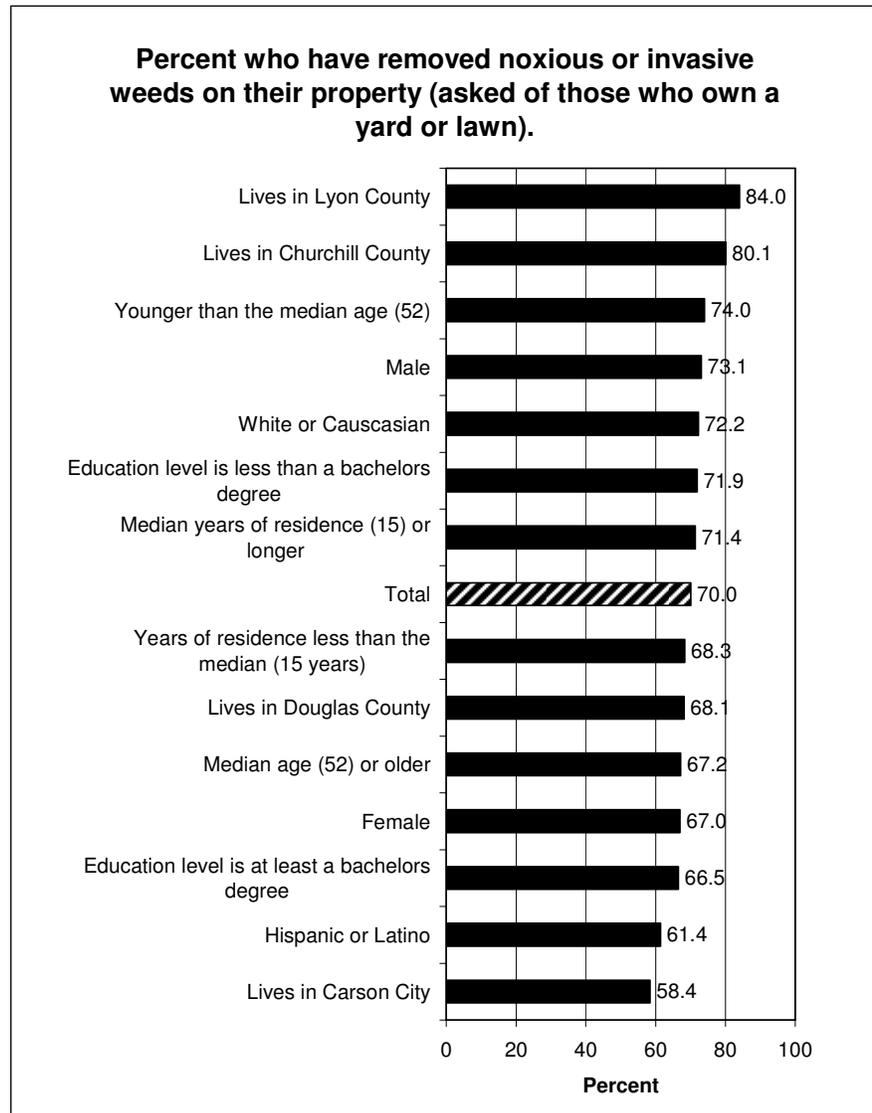
Among property owners, the demographic groups who most often took this action are those who live in Lyon County (84%) and those who live in Churchill County (80%), whereas those who least often took this action are those who live in Carson City (58%) and Hispanic or Latino residents (61%).

These demographic groups are significant:

- Lives in Lyon County ( $p=0.015$ )
- Lives in Carson City ( $p=0.002$ )

These groups are not significant:

- Lives in Churchill County ( $p=0.085$ )
- Hispanic or Latino ( $p=0.302$ )



## SUMMARY OF STATISTICAL ANALYSES

A total of 62 tests were run to determine if statistically significant relationships exist between various survey responses and demographic groups. The table below shows the tested survey responses, demographic groups, significance results (yes/no), and *p*-scores (a *p*-score  $\leq 0.05$  indicates statistical significance at a 95% confidence level).

### Results of Statistical Analysis.

Survey Response	Demographic Group	Significant?	<i>p</i> -score
<b>AWARENESS</b>			
Do not claim to know a great deal or moderate amount about watersheds in general	Hispanic/Latino	Yes	.035*
Do you live in a watershed? – No	Hispanic/Latino	Yes	.005**
	Female	Yes	.025*
Do you live in a watershed? – Yes	Male	Yes	.025*
Believe they affect the health of the Carson River Watershed a great deal or moderate amount	Lives in Churchill County	No	.064
	Female	No	.055
Do not believe they affect the health of the Carson River Watershed a great deal or moderate amount	Male	No	.055
Believe that yard and land maintenance affects the Carson River Watershed a great deal or moderate amount	Lives in Churchill County	Yes	.003**
	Female	Yes	.008**
Do not believe that yard and land maintenance affects the Carson River Watershed a great deal or moderate amount	Male	Yes	.008**
	Hispanic/Latino	Yes	<.001***
	Lyon County	Yes	.002**
Believe the Carson River is the source of their tap water	Lives in Carson City	Yes	<.001***
	Hispanic/Latino	No	.116
Stated that water from their property drains into the Carson River	Lives in Lyon County	Yes	.033*
	Male	Yes	.006**
Did not state that water from their property drains into the Carson River	Female	Yes	.006**
	Hispanic/Latino	Yes	.044*
	Lives in Churchill County	Yes	.004**

Survey Response	Demographic Group	Significant?	p-score
<b>ATTITUDES</b>			
Higher ratings of importance of the health of the Carson River Watershed (continuous)	Older	Yes	.049*
	Female	No	.204
Lower ratings of importance of the health of the Carson River Watershed (continuous)	Male	No	.204
	Younger	Yes	.049*
	Hispanic/Latino	No	.096
Higher ratings of importance of reducing polluted run-off (continuous)	Female	Yes	.002**
Lower ratings of importance of reducing polluted run-off (continuous)	Male	Yes	.002**
Higher ratings of importance of floodplain conservation (continuous)	Male	No	.566
Lower ratings of importance of floodplain conservation (continuous)	Female	No	.566
Higher ratings of importance of recreational use and management (continuous)	Female	No	.757
Lower ratings of importance of recreational use and management (continuous)	Male	No	.757
Higher ratings of importance of addressing invasive species(continuous)	Female	No	.955
Lower ratings of importance of addressing invasive species(continuous)	Male	No	.955
Higher ratings of importance of the protection of habitat along the river (continuous)	Female	No	.071
Higher ratings of importance of the protection of habitat along the river (continuous)	Male	No	.071
Higher ratings of importance of the restoration of habitat along the river (continuous)	Female	Yes	.004**
Lower ratings of importance of the restoration of habitat along the river (continuous)	Male	Yes	.004**
Higher ratings of importance of human efforts to protect or conserve water (continuous)	Female	Yes	<.001***
Lower ratings of importance of human efforts to protect or conserve water (continuous)	Male	Yes	<.001***
Higher ratings of importance of the protection of the river's headwaters (continuous)	Female	No	.161
Lower ratings of importance of the protection of the river's headwaters (continuous)	Male	No	.161
Higher ratings of importance of watershed outreach and education (continuous)	Female	Yes	.007**
Lower ratings of importance of watershed outreach and education (continuous)	Male	Yes	.007**

Survey Response	Demographic Group	Significant?	p-score
<b>BEHAVIORS</b>			
Stated they take action to help improve the health of the Carson River Watershed	Hispanic/Latino	No	.264
	Female	Yes	.050*
Did not state they take action to help improve the health of the Carson River Watershed	Male	Yes	.050*
Replaced major appliances or water fixtures with ones that reduce water usage	Hispanic/Latino	No	.242
	Lives in Churchill County	No	.131
	Younger	Yes	.004**
Did not replace major appliances or water fixtures with ones that reduce water usage	Older	Yes	.004**
Reduced fertilizer use	Lives in Douglas County	No	.414
Washed their car in the driveway	Lives in Lyon County	Yes	.033*
	Lives in Douglas County	No	.165
	Younger	No	.159
Did not wash their car in the driveway	Older	No	.159
	Hispanic/Latino	No	.514
	Lives in Carson City	Yes	.002**
Did not replace turf with landscaping that uses less water	Lives in Lyon County	No	.210
Removed weeds on their property	Lives in Lyon County	Yes	.015*
	Lives in Churchill County	No	.085
Did not remove weeds on their property	Lives in Carson City	Yes	.002**
	Hispanic/Latino	No	.302
Cleaned watercraft or waders to avoid spreading aquatic invasive species	Hispanic/Latino	No	.509
	Female	No	.130
	Younger	Yes	.021*
Did not clean watercraft or waders to avoid spreading aquatic invasive species	Older	Yes	.021*
	Male	No	.130
Redirected gutter downspout to help water landscaping	Lives in Churchill County	No	.059
	Female	No	.077
	Younger	Yes	.009**
Did not redirect gutter downspout to help water landscaping	Older	Yes	.009**
	Male	No	.077
Disposed of oil down the storm drain	Hispanic/Latino	Yes	.007**
	Lives in Douglas County	Yes	.019*

\* ( $p \leq 0.050$ ) – 95% confidence level

\*\* ( $p \leq 0.010$ ) – 99% confidence level

\*\*\* ( $p \leq 0.001$ ) – 99.9% confidence level

## MESSAGE DELIVERY METHODS

Now that the recommended messages and target audiences have been identified, it is essential to determine the best means of reaching each target audience. To that end, the project survey asked respondents where they currently get their information on local watershed or water quality issues. Among all survey respondents the top responses are:

- Newspapers (36%)
- TV (22%)
- Websites (19%)

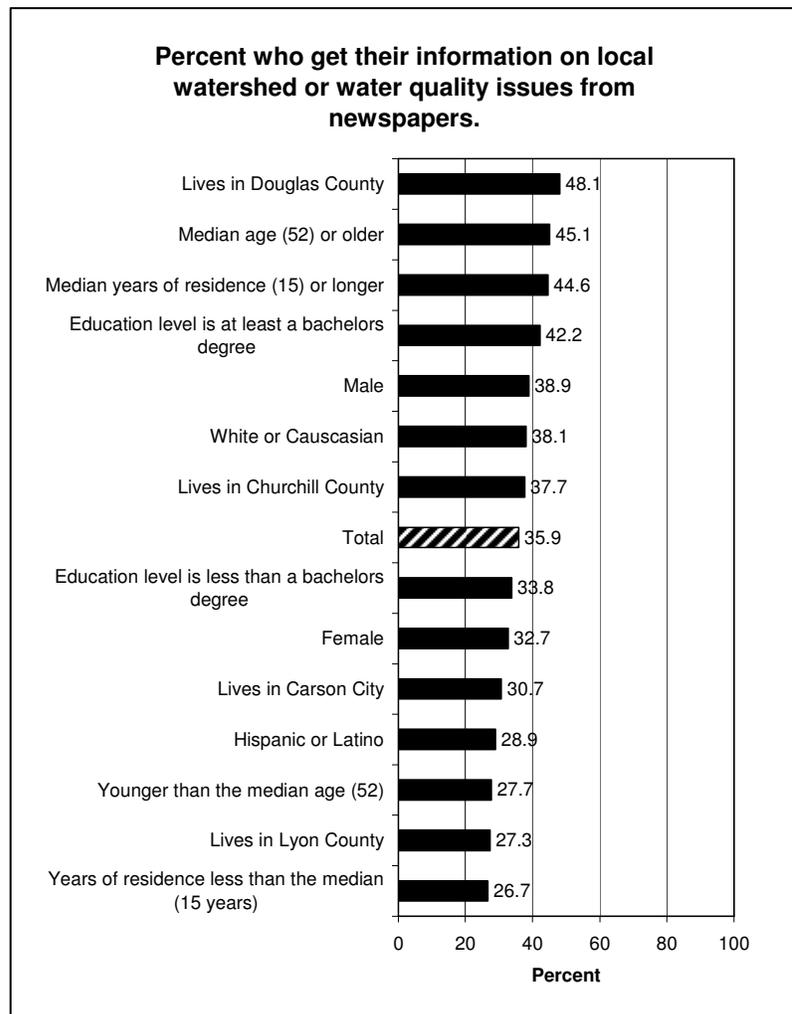
Keeping in mind that there is no such thing as a general public, which the survey results clearly indicate, crosstabulations were performed for these top information sources to observe the demographic groups that most often and least often use each source.

Groups who most often get their watershed or water quality information from newspapers are those who live in Douglas County (48%, compared to 36% of all survey respondents) and those at the median age of 52 or older (45%).

Both of these demographics are statistically significant:

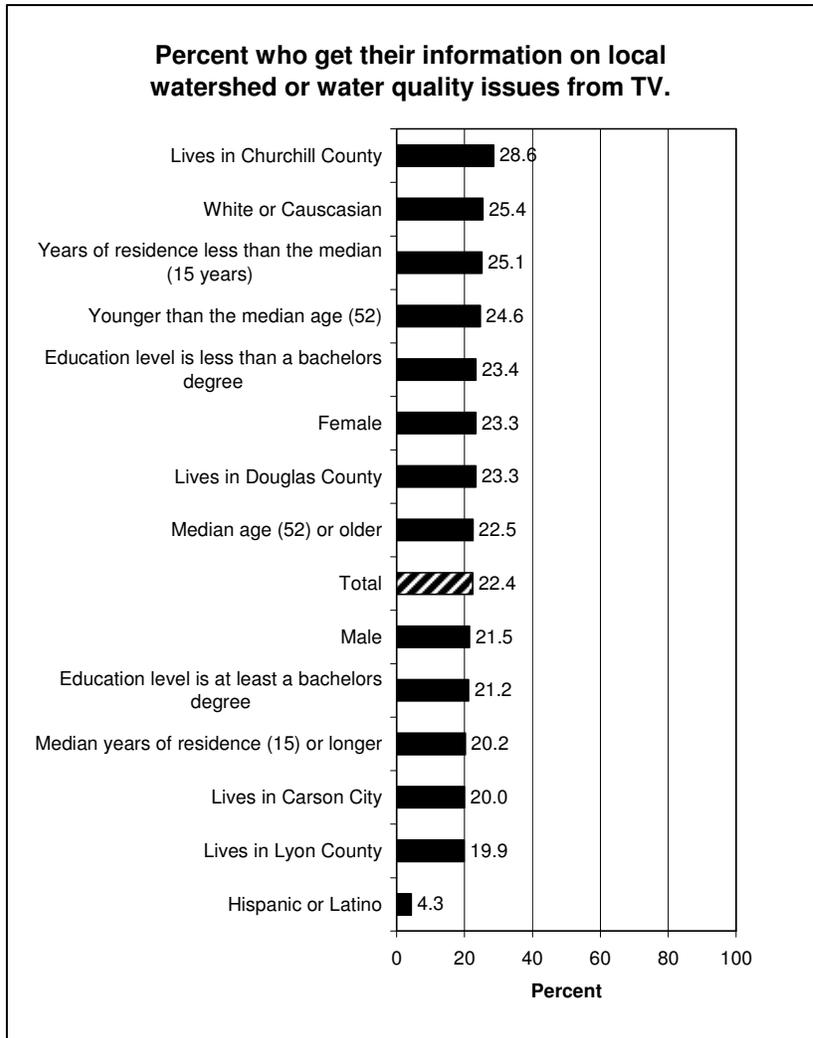
Lives in Douglas County  
( $p=0.010$ )

Older residents (continuous)  
( $p=0.049$ )



Groups who most often get watershed information from TV are those who live in Churchill County (29%) and those who least often get this information from TV are Hispanic or Latino residents (4%).

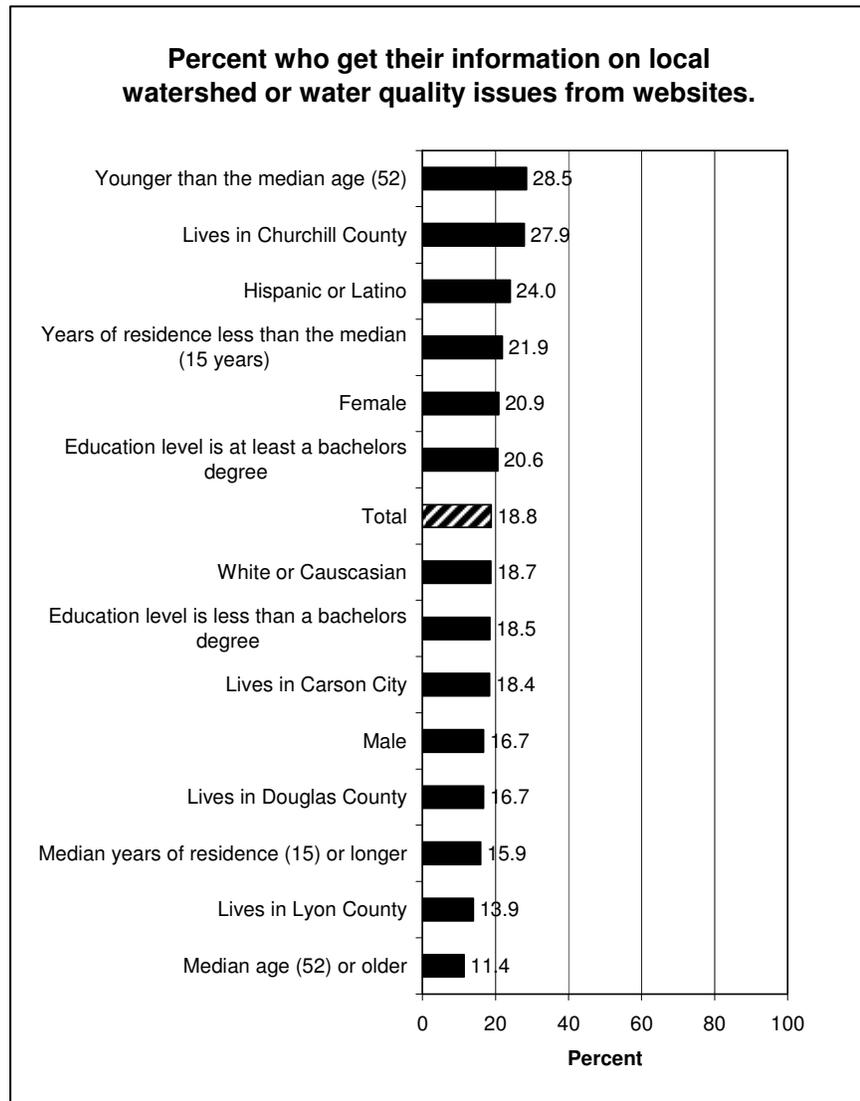
Statistical analysis shows that the positive relationship is not significant for Churchill County residents ( $p=0.239$ ) but the negative relationship is significant for Hispanic or Latino residents ( $p=0.019$ ). In other words, TV is a less effective medium for reaching Hispanic or Latino audiences in the Carson River Watershed.



Groups who most often get watershed information from websites are those younger than the median age of 52 (29%, compared to 19% of all survey respondents) and those who live in Churchill County (28%).

Statistical analyses showed significance based on age ( $p=0.001$ ) but not for Churchill County residents ( $p=0.123$ ).

Age (continuous) tested as a significant variable for both newspapers and websites as the top source of information on local watershed or water quality issues. Therefore, it can be stated that older residents are more likely to get this information from newspapers and younger residents are more likely to get this information from websites.



The next step was to analyze the delivery methods (media) for target audiences that were identified for the recommended message topics. The following pages show tabulations of:

- Recommended message topics
- Target audiences
- Media most used by target audiences (for watershed information)
- Statistical significance of media types for target audiences (including  $p$ -scores)

Note that all the following demographic groups tested as significant for the relevant survey responses; the significance results and  $p$ -scores in these tables refer to the relation between the demographic groups and the media types used most often by these groups.

**1. Inform residents that reducing runoff from their property can improve water quality in the Carson River.**

Target Audiences	Type of Media	Significant?	<i>p</i> -score
Hispanic or Latino	Newspapers	No	.411
Lives in Churchill County	Newspapers	No	.744
Female	Newspapers	No	.257

**2. Inform residents that the Carson River and its watershed is the source of their drinking water.**

Because only 2% of survey respondents named the Carson River as the source of their tap water, it is recommended that any educational campaign include all residents of the Carson River Watershed. (Residents of Carson City were significantly more likely to give this response ( $p < 0.001$ ), but it was only 6% of this group.)

**3. Inform residents that they live in a watershed.**

Target Audiences	Type of Media	Significant?	<i>p</i> -score
Hispanic or Latino	Newspapers	No	.411
Female	Newspapers	No	.257

**4. Inform residents that yard and land maintenance affects the Carson River and its watershed.**

Target Audiences	Type of Media	Significant?	<i>p</i> -score
Hispanic or Latino	Newspapers	No	.411
Lives in Lyon County	Newspapers	No	.123
Female	Newspapers	No	.257

**5. Focus outreach on connecting residents' health and quality of life to the health of their watershed.**

Target Audiences	Type of Media	Significant?	<i>p</i> -score
Younger	Websites	Yes	.001
Hispanic or Latino	Newspapers	No	.411
Male	Newspapers	No	.257

**6. Educate residents on the importance of reducing polluted run-off.**

Target Audience	Type of Media	Significant?	<i>p</i> -score
Male	Newspapers	No	.257

**7. Emphasize that human efforts to protect water quality and avoid wasting water are very important.**

Target Audience	Type of Media	Significant?	<i>p</i> -score
Male	Newspapers	No	.257

**8. Emphasize the environmental hazards of dumping oil on the land or down a storm drain.**

Target Audiences	Type of Media	Significant?	<i>p</i> -score
Hispanic or Latino	Newspapers	No	.411
Lives in Douglas County	Newspapers	Yes	.010

**9. Inform residents that washing their car in the driveway is harmful to the watershed.**

Target Audience	Type of Media	Significant?	<i>p</i> -score
Lives in Lyon County	Newspapers	No	.123

**10. Encourage residents to replace major appliances or water fixtures with ones that reduce water usage.**

Target Audience	Type of Media	Significant?	<i>p</i> -score
Older	Newspapers	Yes	.049

**11. Encourage boat owners to clean their watercraft to avoid spreading aquatic invasive species.**

Target Audience	Type of Media	Significant?	<i>p</i> -score
Older	Newspapers	Yes	.049

**12. Encourage property owners to redirect their gutter downspouts to help water their landscaping.**

Target Audience	Type of Media	Significant?	<i>p</i> -score
Older	Newspapers	Yes	.049

**13. Inform residents that appropriately controlling noxious weeds can improve the health of the Carson River and its watershed.**

Target Audience	Type of Media	Significant?	<i>p</i> -score
Lives in Carson City	Newspapers	No	.162

Note that most relationships between demographic groups and their most used media types are not significant—the exceptions are Douglas County/newspapers, age/newspapers, and age/websites. (It should be noted that an important part of the issue is probably due to low sample sizes given the crosstabulations of the data and the sample sizes of the original data).

Nonetheless, these forms of media are recommended on the basis of their observed frequencies in the project survey.

Statistical analyses of the relationships between demographic groups and media types are summarized below.

Survey Response	Demographic Group	Significant?	p-score
<b>Top Information Source</b>			
Newspapers	Lives in Carson City	No	.162
	Lives in Douglas County	Yes	.010**
	Lives in Churchill County	No	.744
	Lives in Lyon County	No	.123
	Male	No	.257
	Female	No	.257
	Hispanic/Latino	No	.411
	Older	Yes	.049*
Newspapers (not source)	Younger	Yes	.049*
TV (not source)	Hispanic/Latino	Yes	.019*
Websites	Lives in Churchill County	No	.123
	Younger	Yes	.001***
Websites (not source)	Older	Yes	.001***
<b>Response x Information Source</b>			
Lives in watershed / Newspapers		Yes	.024*
Takes action / Newspapers		No	.085
Carson River is water source / Newspapers		No	.698
Carson River is water source / Websites		No	.861
Drainage goes to Carson River / Websites		No	.731

\* ( $p \leq 0.050$ ) – 95% confidence level

\*\* ( $p \leq 0.010$ ) – 99% confidence level

\*\*\* ( $p \leq 0.001$ ) – 99.9% confidence level

### Frequency of Message Delivery

The previous tables clearly show that newspapers is the medium of choice to reach most target audiences (the one demographic exception is younger residents, who most often get their environmental information from websites). According to AllBusiness.com, “In most cases, a single exposure to [a newspaper] ad has very limited value. It takes a campaign of advertisements to affect shoppers...” Evidence indicates that a minimum of three exposures to an ad in a seven day period is the minimum required to produce a positive return on investment. However, because the overarching goal is a long-term change in residents’ awareness and behavior, as opposed to the sale of a product, a less frequent yet nonetheless persistent campaign is encouraged.

It is recommended (budget permitting) that the messages selected by the CRC be run on a weekly basis in the *Nevada Appeal* (the daily newspaper for Carson City), which is the primary newspaper source covering the watershed area. Due to the close proximity of Reno to the watershed, the *Reno Gazette-Journal* (the daily newspaper for Reno) will be considered the secondary newspaper source. A message should be run in the *Reno Gazette-Journal* on a monthly basis, to help ensure marketing coverage to watershed residents who may opt for the Reno newspaper. CRC messages should be run in the Friday editions of both newspapers, as residents’ around-the-home activities such as yard work or car washing are more likely to occur during weekends.

As a marketing rule-of-thumb, “the rule of seven” would apply to this situation. This means that a person must see an ad at least seven times to remember it (note that taking action or being educated is a different story). Keep in mind, this means the same ad, not variations with different messages. Therefore, the same message should be run at least seven to ten times before being replaced with a different message.

In addition, any new or existing websites set up by the CRC for this marketing and outreach effort should include the newspaper messages on a continuous or rotating basis.

## **MESSAGE RECOMMENDATIONS**

### **OVERALL MARKETING THEME**

The results of the survey show that while Carson River Watershed residents care about water resources and general watershed-related issues, overall knowledge levels and connectivity to the river, the watershed, and its benefits are low. The most important goal of communications should be to establish a connection between the residents of the Carson River Watershed to the river, the watershed, and its many benefits.

The most direct way to do this is to first connect residents to the river itself, followed by a campaign to connect them to the watershed. Communications research (see page 20) has shown that direct experience, self-interest, and perceiving one's self as being connected to and part of nature are important in producing positive behavioral change. Communications efforts that focus on connecting the dots between watershed residents and the river, as well as the water in the watershed, should be effective in ultimately producing desired behavioral changes. Coupled to this overall theme would be the specific actions recommended in this report as communications research also indicates the importance of communicating "single, achievable, specific actions" (Costanza et. al. 1986). Several marketing themes have been recommended in this chapter, ranging from a "Brought to You by the Carson River" campaign theme to a "Love Thy Neighbor" campaign theme. However, Responsive Management understands that campaign themes like this are highly personal and should ultimately be developed based on an interplay between the research, the CRC, and Responsive Management.

A common theme or tag line will maximize the exposure of all the outreach efforts. This combination of a general overall theme that ties the citizens of the watershed to the Carson River and the water resources it provides will provide an effective basis for a marketing and communications outreach program for the next 3 - 5 years. Following are the specific messages, target audiences, and media that should be the foundations for communications along with the overall theme described above.

**SPECIFIC MESSAGES**

**Recommendation 1. Inform residents that reducing runoff from their property can improve water quality in the Carson River.**

Target Audiences (Media): Hispanic or Latino (Newspapers)  
Churchill County (Newspapers)  
Female (Newspapers)

**Recommendation 2. Inform residents that the Carson River and its watershed is the source of their drinking water.**

Target Audience (Media): All (Newspapers)

**Recommendation 3. Inform residents that they live in a watershed.**

Target Audiences (Media): Hispanic or Latino (Newspapers)  
Female (Newspapers)

**Recommendation 4. Inform residents that yard and land maintenance affects the Carson River and its watershed.**

Target Audiences (Media): Hispanic or Latino (Newspapers)  
Lyon County (Newspapers)  
Female (Newspapers)

**Recommendation 5. Focus outreach on connecting residents' health and quality of life to the health of their watershed.**

Target Audiences (Media): Younger (Websites)  
Hispanic or Latino (Newspapers)  
Male (Newspapers)

**Recommendation 6. Educate residents on the importance of reducing polluted run-off.**

Target Audience (Media): Male (Newspapers)

**Recommendation 7. Emphasize that human efforts to protect water quality and avoid wasting water are very important.**

Target Audience (Media): Male (Newspapers)

**Recommendation 8. Emphasize the environmental hazards of dumping oil on the land or down a storm drain.**

Target Audiences (Media): Hispanic or Latino (Newspapers)  
Douglas County (Newspapers)

**Recommendation 9. Inform residents that washing their car in the driveway is harmful to the watershed.**

Target Audience (Media): Lyon County (Newspapers)

**Recommendation 10. Encourage residents to replace major appliances or water fixtures with ones that reduce water usage.**

Target Audience (Media): Older (Newspapers)

**Recommendation 11. Encourage boat owners to clean their watercraft to avoid spreading aquatic invasive species.**

Target Audience (Media): Older (Newspapers)

**Recommendation 12. Encourage property owners to redirect their gutter downspouts to help water their landscaping.**

Target Audience (Media): Older (Newspapers)

**Recommendation 13. Inform residents that appropriately controlling noxious weeds can improve the health of the Carson River and its watershed.**

Target Audience (Media): Carson City (Newspapers)

## **OVERARCHING RECOMMENDATIONS**

The following recommendations are applicable regardless of the targeted messages and audiences; these strategies should be considered throughout the marketing planning and implementation process. With the recommended marketing messages, target audiences, and delivery methods identified, these guidelines should provide a basis for the approach moving forward.

**Recommendation 14. Develop the recommended theme and tagline and test it in the market.**

It is recommended that the CRC develop the overarching tagline as discussed previously and test it along with its variants to determine their validity to the target markets. It is essential that the campaign maintain a consistent look and brand, no matter the target audience of the message. The challenge will be to keep the theme similar across all CRC communications, including its online presence. All branding images and logos should include language or images focused on the target audience.

**Recommendation 15. A designated marketing manager/director for the communications as outlined in this report should be responsible for maintaining consistency and balance among all outreach efforts.**

It is important that the CRC designate an individual or a committee to manage all promotional and campaign efforts, if possible, or designate a person in-house to serve in this capacity. This will result in consistent messaging and ensure cohesiveness throughout the effort.

**Recommendation 16. Centralize all marketing and communications across the CRC so that anything produced has a consistent look, brand, and message.**

This applies to all press releases, signage, print material, websites, social media, publications, videos, etc. Everything should be approved by the designated marketing director.

**Recommendation 17. Develop a high-quality mail, email, and telephone database of all target audiences for future marketing efforts.**

The key to reaching the target audience is to have updated, accurate contact information. For this reason, it is imperative that the CRC develop and maintain a high-quality mail, email, and telephone database of all target audiences for future marketing efforts. In addition to simply providing a database for future contact with target markets, this information could be used to

determine which marketing approaches and outreach efforts might be more effective. These capabilities are also invaluable for evaluating the outcomes of marketing efforts.

**Recommendation 18. Focus on local newspapers as the media of choice in the early phases of the campaign and continue this focus to increase awareness and empathy for the Carson River Watershed.**

Newspapers are an important source of information and the CRC and its partners should focus on this medium for its efforts. A monthly column should be considered to assist in connecting residents to the river, the watershed, and its associated benefits.

**Recommendation 19. Take timing and seasonality into consideration.**

Seasonal events provide an important connection to the river and can enhance communications and outreach efforts. For example, the onset of spring can provide a natural launch pad to talk about the river and the watershed's water supply. Summer can provide a launch pad for communications that focus on washing cars and disposing of oil properly. Timing should also be an important part of communications in the amount of legwork and time it takes to produce items recommended for this plan. For example, preparing the layout, graphic design, printing, programming, and editing newspaper ads or columns, emails, or mailings requires significant amounts of lead time, particularly if it must be approved through several management steps. Recognize that coordinating and completing necessary steps prior to actual implementation often takes three to six months or more.

**Recommendation 20. Explore the possibilities of getting information on the Carson River Watershed into water bills of watershed residents.**

Information about the Carson River Watershed could be included in local water bills as it provides a natural connection between the river and its citizen during a "teachable moment."

**Recommendation 21. Consider males as an important overall target market for marketing and communications efforts.**

Overall, men demonstrated less overall empathy, knowledge, and positive actions toward the Carson River Watershed. Overall themes could be designed with this in mind, such as the "Treat Her Like a Lady" campaign recommendation in the following section. Specific actions such as the negative effects of washing cars in driveways should also be emphasized to this demographic group.

**Recommendation 22. Make full use of partnership strength and coordinate all efforts.**

Numerous agencies and organizations have a stake in a more empathetic and aware constituency of the Carson River Watershed. These strengths should be utilized and all marketing and communications efforts should be coordinated. Bi-monthly meetings are recommended among partners to coordinate marketing and communications efforts to maintain consistency of efforts.

**Recommendation 23. Identify and Prioritize Issues**

The primary objective of the marketing/communications plan is to establish a connectivity between the constituency and the Carson River and its watershed; to increase awareness that human behavior affects watershed health; and to promote changes in behavior that will ultimately improve habitat, water quality, and water supply to benefit the watershed as a whole.

Moving forward, it would be in the CRC's best interests to be as specific as possible and create a list of resident behaviors that would help improve the watershed and its surrounding habitat.

**Recommendation 24. Take full advantage of social media.**

Pamphlets and brochures can be useful in reaching a large number of watershed residents, but this medium can sometimes cost an "average of twenty to twenty-five cents per message per individual" (Duda, Bissel, and Young, 1998). Use of social media and owned media, such as websites, Facebook pages, etc., can be extremely cost effective and have the ability to reach a large audience.

**Recommendation 25. Stay consistent with messages and continue hitting target audiences multiple times.**

Information from *Save the Bay* campaigns like those used for the San Francisco Bay and the Chesapeake Bay can be very effective in getting the message across. According to The Financial Brand (2015), messages work best when they are short and repeated *often*: "The 1st time people look at an ad, they don't see it," but The Financial Brand adds, "The 20th time prospects see the ad, they buy what it is offering." Creating stickers, buttons, and postcards like those used in the *Save the Bay* campaign allow the message to be seen many times by many people.

**Recommendation 26: Evaluate everything.**

It is important to be as flexible as possible when targeting a particular audience. Methods and media of communication may or may not work and the CRC must be willing to evaluate and change where necessary. Implement methods of measurement to identify levels of communication before, during, and after a communications plan, and then decide the effectiveness of those methods.

**Recommendation 27: Learn as much as possible about the Hispanic/Latino market in the watershed.**

Demographic crosstabulations show that Hispanic residents are the group who most often stated they disposed of oil down the storm drain in the past 5 years (7% did this, compared to 2% of all survey respondents). As aforementioned in the chapter on the survey findings, however, Hispanic populations also reported a higher likelihood of taking action to improve the health of the watershed.

In recent years, The Recreational Boating and Fishing Foundation (RBFF) (2013, 2015) has been working to launch a "Hispanic Outreach Plan" in partnership with several states' fish and wildlife agencies. The plan includes general demographics of the Hispanic population, as well as communications strategies created specifically for a Hispanic audience. Many of these data are valuable to any organization working with a Hispanic audience.

**Hispanic Population Characteristics**

People of Hispanic/Latino origin nationwide make up 17% of the population, and account for 48% of all population growth from 2012 to 2013. The Hispanic population is predicted to reach 20% of the general population in the next five years. The median age in the Hispanic community is 28, in comparison to 42 in the non-Hispanic white population. In the Carson River Watershed, the Hispanic/Latino market is smaller compared to the Nevada population as a whole but still a significant and growing demographic market.

In their description of Hispanic characteristics, the RBFF noted that Hispanic populations are generally:

- Young and active families that “enjoy outdoors, action, and excitement”
- Social, frequently group-oriented, and “enjoy shared experiences”
- Not likely to research things as frequently or as in-depth as non-Hispanics
- Likely to rely on word-of-mouth or anecdotal evidence more than non-Hispanics
- Likely to place more trust in authority figures for education and information
- Likely to have language barriers (RBFF notes that the “bar is low and acceptance of efforts is high”)

### **Communication Strategies for Hispanic Audiences**

The CRC has an important need to establish effective communication strategies with its Hispanic population. Practical suggestions on how to best approach communication with Hispanic populations follow:

- Utilize consumer databases in order to directly contact members of the target population.
- Reach target audience via most consumed media. According to RBFF, television, Spanish cable television, radio, internet, and social media are the top five most frequently used forms of media by Hispanic populations. (However, this project survey demonstrated that Hispanic residents are not likely to get watershed or water quality information from television).
- Make all materials bilingual to ensure inclusion.

## PRODUCT SUGGESTIONS

Following are a few possible recommendations for overall themes. At this point they are ideas and the researchers are not tied to any of them. They are meant as a starting place for discussion on the best overall theme for raising awareness of the watershed, increasing positive behaviors, and decreasing negative behaviors.

Message recommendations are based on the research that supports direct experience (making the connection between the individual and the Carson River and its water); motivation (securing and protecting clean drinking water), and reinforcing feelings of interconnectedness (with the Carson River, the watershed, and the water). The researchers encourage the development of specific actions watershed residents can take and develop those into themes once the highest priority recommendations are agreed upon by the CRC.

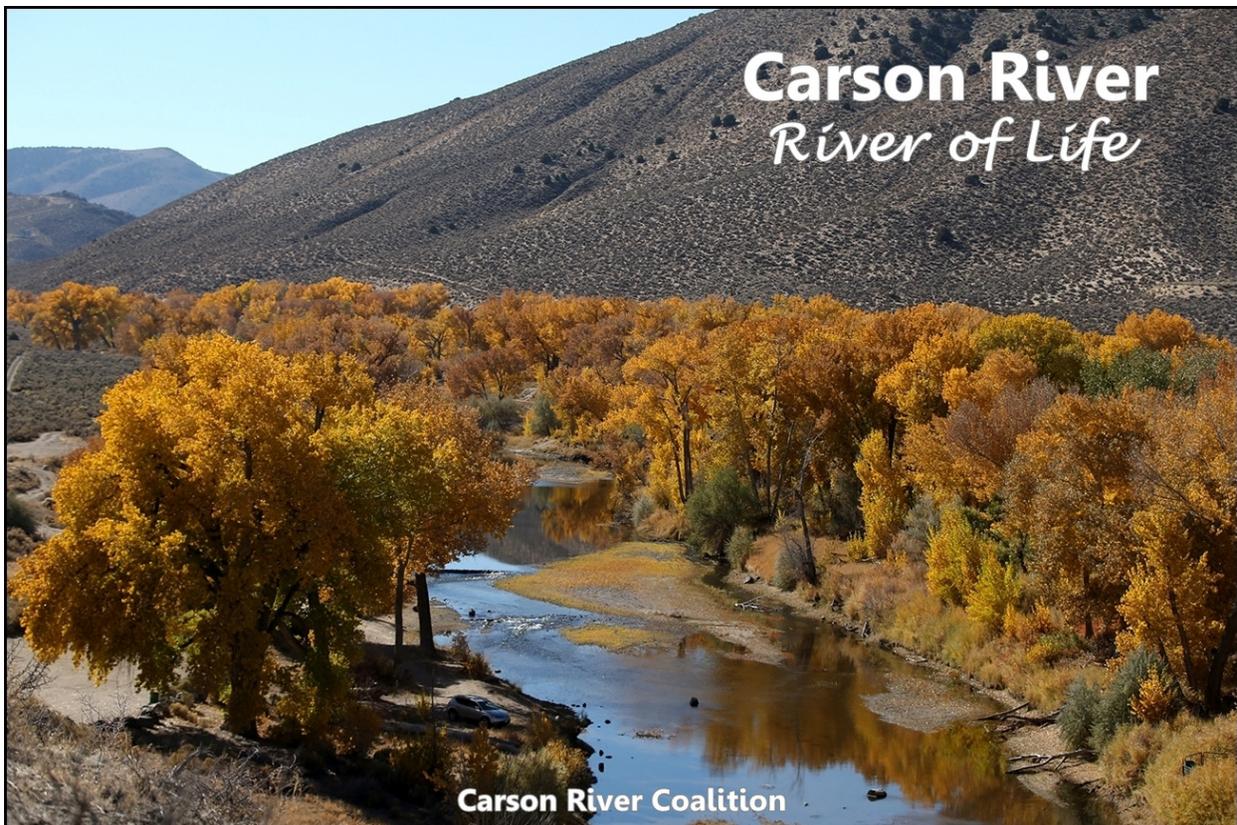


Photo Credit: Carson River by Reno Tahoe Territory (Creative Commons License)

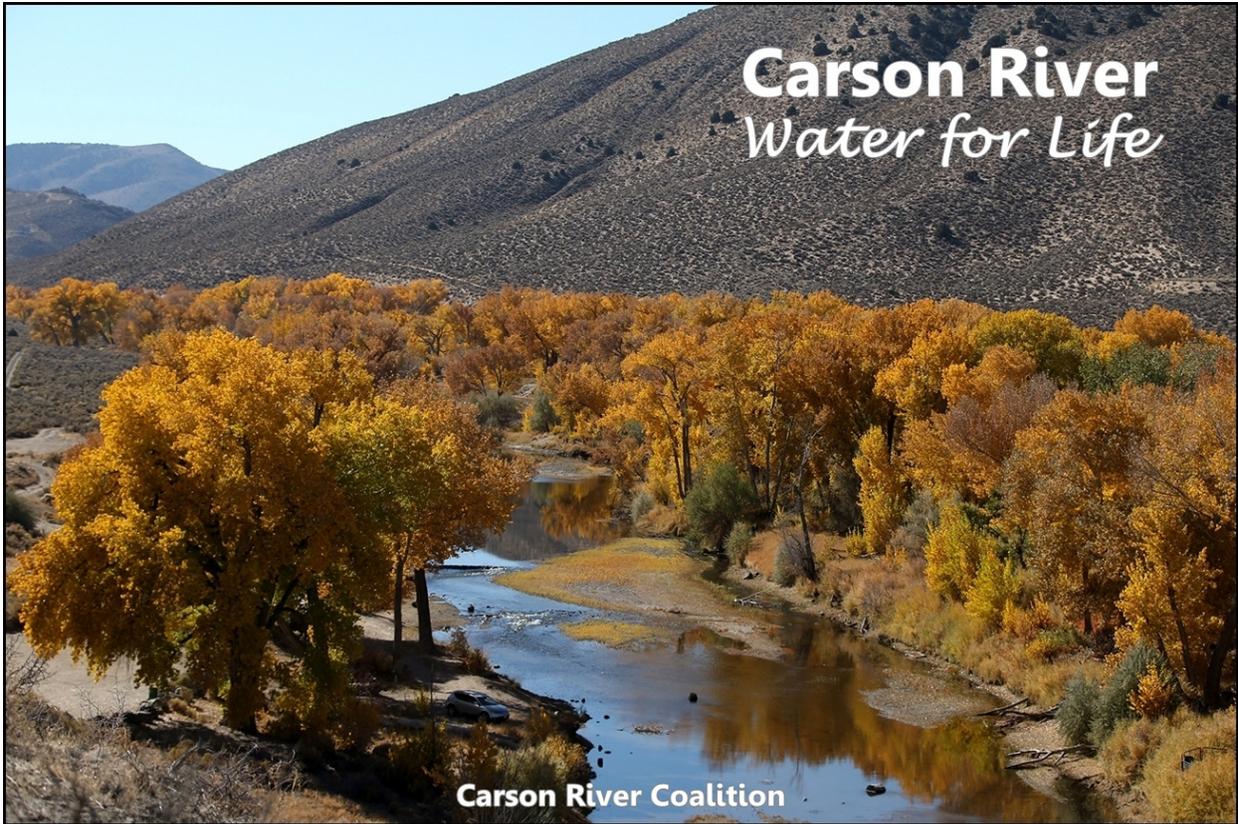


Photo Credit: Carson River by Reno Tahoe Territory (Creative Commons License)



Photo Credit: Carson River, Royalty Free Images



Photo Credit: Carson River, Royalty Free Images



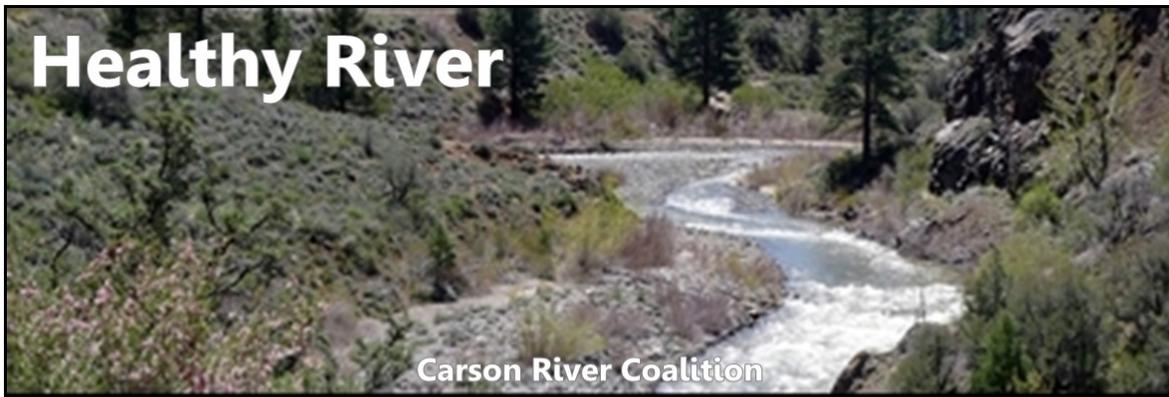
Photo Credit: The Mix (thesite.org)



Photo Credit: The Mix (thesite.org)



Photo Credit: The Mix (thesite.org)



Top Photo Credit: Carson River by Joshua Gatts (Creative Commons License)

Bottom Photo Credit: American Heart Association (heart.org)



Top Photo Credits (left to right): The Mix (thesite.org); RenoRiverfest by AVargas (Creative Commons License, or CCL);

Showerhead Water Drops by StevenDepolo (CCL); Yolo River Diving In by moonjazz (CCL)

Bottom Photo Credit: Carson River, Royalty Free Images



Photo Credits (left to right): City of Portage, Michigan ([portagemi.gov](http://portagemi.gov)); The Mix ([thesite.org](http://thesite.org))



Photo Credits (left to right): City of Portage, Michigan ([portagemi.gov](http://portagemi.gov)); The Mix ([thesite.org](http://thesite.org))



Photo Credits (left to right): City of Portage, Michigan ([portage.mi.gov](http://portage.mi.gov)); The Mix ([thesite.org](http://thesite.org))



Photo Credits (left to right): City of Portage, Michigan ([portage.mi.gov](http://portage.mi.gov)); Child Drinking Water From a Glass, Aqua Mechanical (Creative Commons License)

## EVALUATION

The key to refining marketing and communications strategies is to evaluate efforts by determining their outcomes. Evaluation should be considered a general rule for any and all marketing and communications efforts undertaken.

Some organizations fall into the trap of producing *outputs* without having a clear idea of *outcomes*. This may result because a) organizations already think they know what their audiences want, or b) they initiate marketing efforts based on research but then fail to evaluate them. The former is problematic because the organization has no true understanding of what its constituents want or need, so the material or campaign created has no basis in research. Thus, there is no scientific way to evaluate it. The latter is problematic because, though the material or campaign was developed based on data, there was no evaluation done to determine if the approach had an impact.

Without proper evaluation, there is no way to know whether efforts were a success, why they were a success, and the degree to which they were successful. It is much more beneficial to scale back the size of a campaign in order to preserve funds for evaluation than to spend valuable resources on the campaign without accounting for a complete understanding of the outcomes. Small efforts that are evaluated will prove more successful because the results can often be applied to larger efforts. Also, implementation of the plan amounts to a learning process—recognize that each effort will provide insights and answers to questions which can then be applied to subsequent efforts. In this way, the CRC can hone strategies over time and become increasingly successful in its approach.

When evaluating plan components, strive to answer the following questions:

- In a broad sense, did the effort work?
- Did the organization accomplish what it set out to do with the effort?
- Did the organization meet its goal for the effort (for example, increase awareness or desired behaviors)?

For this project, a follow-up trend survey will provide valuable insight into the effectiveness of these marketing efforts. Currently, the plan is to administer the survey in the next 3 to 5 years, which will provide ample time to observe differences in awareness, attitudes, and behaviors resulting from the communications and outreach campaign. Marketing effectiveness will be measured by a scoring or grading system based on percent change in: awareness responses, mean ratings of attitudes (0 to 10 scale questions), and behaviors that are beneficial or detrimental to the health of the Carson River Watershed. The scoring system will be used to classify the messages into one of the following grade categories:

- F – no planning; negative change in attitudes/behaviors
- D – minimal planning; negligible change in attitudes/behaviors
- C – some planning; minor positive change in attitudes/behaviors
- B – adequate planning; positive change in attitudes/behaviors
- A – excellent planning; strong positive change in attitudes/behaviors

## FUTURE ASSESSMENTS AND GRADING

For an internal evaluation assessment, the CRC can consider adopting a letter grade system that may be applied to the results of future assessments, with the grade assigned reflecting both the planning done prior to initiating communications and marketing efforts as well as the specific outcomes of said efforts. In the table below, the summary of metrics for each grade accounts for the planning accomplished and the quantitative indicators of progress (or lack thereof) as determined through follow-up surveys of residents.

Note that the survey response percentage increases required for the “A” and “B” grades apply only to the first follow-up survey; while positive ratings cannot increase indefinitely, additional follow-up surveys should nonetheless be measured against new baseline data as necessary.

Grade	Metrics
<p style="text-align: center;"><b>F</b></p> <p>(no planning; negative change in attitudes/behaviors)</p>	<p style="text-align: center;"><i>Quantitative indicators from follow-up survey:</i></p> <ul style="list-style-type: none"> <li>• Awareness and knowledge levels and positive conservation behaviors decrease from baseline beyond the margin of error.</li> </ul>
<p style="text-align: center;"><b>D</b></p> <p>(minimal planning; negligible change in attitudes/behaviors)</p>	<p style="text-align: center;"><i>Quantitative indicators from follow-up survey:</i></p> <ul style="list-style-type: none"> <li>• Awareness and knowledge levels and positive conservation behaviors increase by 1% or less from baseline.</li> </ul>
<p style="text-align: center;"><b>C</b></p> <p>(some planning; minor positive change in attitudes/behaviors)</p>	<p style="text-align: center;"><i>Quantitative indicators from follow-up survey:</i></p> <ul style="list-style-type: none"> <li>• <u>Desired results show increases of at least 3 percentage points:</u> <ul style="list-style-type: none"> <li>○ At least 12% of residents indicate that they know a <i>great deal</i> about watersheds (baseline is 9%).</li> <li>○ At least 41% of watershed residents correctly indicate that they live in a watershed (baseline is 38%).</li> </ul> </li> <li>○ Regarding the importance of the health of the Carson River Watershed environment, achieve a mean rating of at least 8.52 (baseline rating is 8.27).</li> <li>○ At least 10% of residents indicate that they affect the health of the Carson River Watershed’s environment a <i>great deal</i> (baseline is 7%).           <ul style="list-style-type: none"> <li>○ At least 74% of residents rate the importance of reducing polluted run-off as a 9 or 10 (baseline is 71%).</li> </ul> </li> <li>○ At least 59% of residents rate the importance of protection of habitat along the river as a 9 or 10 (baseline is 56%).           <ul style="list-style-type: none"> <li>○ At least 52% of residents rate the importance of addressing invasive species as a 9 or 10 (baseline is 49%).</li> </ul> </li> <li>○ At least 70% of residents indicate that yard and land maintenance practices affect the health of the Carson River and watershed environment (baseline is 67%).</li> </ul>

Grade	Metrics
<p style="text-align: center;"><b>B</b></p> <p>(adequate planning; positive change in attitudes/behaviors)</p>	<p style="text-align: center;"><i>Quantitative indicators from follow-up survey:</i></p> <ul style="list-style-type: none"> <li>• <u>Desired results show increases of at least 5 percentage points:</u> <ul style="list-style-type: none"> <li>○ At least 14% of residents indicate that they know <i>a great deal</i> about watersheds (baseline is 9%).</li> <li>○ At least 43% of watershed residents correctly indicate that they live in a watershed (baseline is 38%).</li> </ul> </li> <li>○ Regarding the importance of the health of the Carson River Watershed environment, achieve a mean rating of at least 8.75 (baseline rating is 8.27).</li> <li>○ At least 12% of residents indicate that they affect the health of the Carson River Watershed's environment <i>a great deal</i> (baseline is 7%). <ul style="list-style-type: none"> <li>○ At least 76% of residents rate the importance of reducing polluted run-off as a 9 or 10 (baseline is 71%).</li> </ul> </li> <li>○ At least 61% of residents rate the importance of protection of habitat along the river as a 9 or 10 (baseline is 56%). <ul style="list-style-type: none"> <li>○ At least 54% of residents rate the importance of addressing invasive species as a 9 or 10 (baseline is 49%).</li> </ul> </li> <li>○ At least 72% of residents indicate that yard and land maintenance practices affect the health of the Carson River and watershed environment (baseline is 67%). <ul style="list-style-type: none"> <li>• <u>At least three out of the five following personal actions show desired increases or decreases of at least 5 percentage points:</u> <ul style="list-style-type: none"> <li>○ At least 45% of those who own property with landscaping report replacing turf with landscaping that uses less water (baseline is 40%).</li> <li>○ At least 72% of residents report replacing appliances or water fixtures with ones that reduce water usage (baseline is 67%).</li> <li>○ At least 68% of residents report reducing fertilizer use (baseline is 63%).</li> </ul> </li> <li>○ At least 92% of pet owners report picking up their pet's waste (baseline is 87%).</li> <li>○ No more than 36% of car owners report washing their car in the driveway (baseline is 41%).</li> </ul> </li> <li>• Finally, no more than 1% of residents report disposing of oil down the storm drain; among Hispanic/Latino residents, no more than 5% report having done so.</li> </ul>

Grade	Metrics
<p style="text-align: center;"><b>A</b></p> <p>(excellent planning; strong positive change in attitudes/behaviors)</p>	<p style="text-align: center;"><i>Quantitative indicators from follow-up survey:</i></p> <ul style="list-style-type: none"> <li>• <u>Desired results show increases of at least 10 percentage points:</u> <ul style="list-style-type: none"> <li>○ At least 19% of residents indicate that they know <i>a great deal</i> about watersheds (baseline is 9%).</li> <li>○ At least 48% of watershed residents correctly indicate that they live in a watershed (baseline is 38%).</li> </ul> </li> <li>○ Regarding the importance of the health of the Carson River Watershed environment, achieve a mean rating of at least 9.00 (baseline rating is 8.27).</li> <li>○ At least 17% of residents indicate that they affect the health of the Carson River Watershed’s environment <i>a great deal</i> (baseline is 7%).                     <ul style="list-style-type: none"> <li>○ At least 81% of residents rate the importance of reducing polluted run-off as a 9 or 10 (baseline is 71%).</li> </ul> </li> <li>○ At least 66% of residents rate the importance of protection of habitat along the river as a 9 or 10 (baseline is 56%).                     <ul style="list-style-type: none"> <li>○ At least 59% of residents rate the importance of addressing invasive species as a 9 or 10 (baseline is 49%).</li> </ul> </li> <li>○ At least 77% of residents indicate that yard and land maintenance practices affect the health of the Carson River and watershed environment (baseline is 67%).                     <ul style="list-style-type: none"> <li>• <u>At least three out of the five following personal actions show desired increases or decreases of at least 10 percentage points:</u> <ul style="list-style-type: none"> <li>○ At least 50% of those who own property with landscaping report replacing turf with landscaping that uses less water (baseline is 40%).</li> <li>○ At least 77% of residents report replacing appliances or water fixtures with ones that reduce water usage (baseline is 67%).</li> <li>○ At least 73% of residents report reducing fertilizer use (baseline is 63%).</li> <li>○ At least 97% of pet owners report picking up their pet’s waste (baseline is 87%).</li> <li>○ No more than 31% of car owners report washing their car in the driveway (baseline is 41%).</li> </ul> </li> </ul> </li> <li>• Finally, no more than 1% of residents report disposing of oil down the storm drain; among Hispanic/Latino residents, no more than 3% report having done so.</li> </ul>

## ENVIRONMENTAL EDUCATION ROUNDTABLE

The Education Working Group of the Carson River Coalition held the 2nd Environmental Education Roundtable on April 26, 2016 in Carson City, Nevada. The roundtable included a discussion of the Watershed-Literacy Program, presentations of the Watershed-Literacy Survey results and the draft Marketing and Communications Plan, a participant survey using “clicker” technology, networking/water model demonstrations, and breakout discussion sessions, among other agenda items.

The breakout sessions enable roundtable participants to brainstorm environmental messaging topics, the most popular of which are listed below. The full list of suggested topics is included in Appendix A.

### **Environmental Message Topics—Most popular suggestions:**

- Where does your water shed?
- Got Water? It’s what’s on tap.
- The Carson (River) flows through us.
- Only rain in the storm drain.
- Water doesn’t come from a faucet.
- Your water. Where does it come from? Where does it go?
- Give a shit! Commit to a clean, healthy watershed.
- Nevada Floods: Are you prepared?
- You’re only as healthy as your watershed.
- Open floodplains save lives.
- You are what you drink. Protect the Carson (River Watershed).
- Five out of five water experts (scientists?) recommend protecting the Carson River/Watershed.

Also relevant was the “what’s missing” list shown below, which provides perspective on gaps that may exist in current messaging topics.

### **What's Missing—Other message topics:**

- Coordination efforts in land management
- Use "basin", "river", "catchment", "drainage" instead of "watershed."
- Environment in water rights equation
- Illegal dumping
- Climate change
- Drought
- Fuels reduction
- Recreation
- Fisheries issues
- Habitat diversity
- Efficient water use
- Nevada Floods - Are you prepared?
- Riparian benefits and function
- Where does water flow - run - used for?

Roundtable participants also brainstormed ideas for overarching themes. The most popular are shown below; the full list can be viewed in Appendix A.

**Overarching Theme Language—Most popular suggestions:**

- Use your head in a watershed.
- One water - one watershed.
- Our river, our responsibility.
- Use your brain...it's more than rain.
- Only you can prevent dirty water.
- Find your river connection.
- Our water reflects our choices.
- Our river reflects our choices.
- The water reflects your choices.
- Think outside the river.

In addition, participants determined the key steps to follow moving forward from this roundtable session:

**Next Steps:**

- Bring these results to the Education Working Group.
- Bring these results back to the CRC.
- Obtain funding.
- Look at other national campaigns we can piggyback on.
- Willingness for each of you to fill out program data sheets. All data will be pooled and sent back to use in your funding efforts.
- Heath map (Community Foundation of Western Nevada) which identifies who is serving what areas and topics to determine gaps.
- Army Corps of Engineers funding.
- Reach out to others not participating yet - everyone reach out.

Notes and documents created during and after the roundtable have been included in Appendix A.

## SOURCES

- California State Department of Finance. 2012-2014. California and its Counties Population by Age, Race/Hispanics, and Gender: 2000–2010; P-2: State and County Population Projections – Race/Ethnicity and 5-Year Age Groups: 2010-2060 by Year; E-4 Population Estimates for Cities, Counties, and the State, 2001–2010, with 2000 & 2010 Census Counts. Accessed March 2016: <http://www.dof.ca.gov/research/demographic/>
- California State Department of Finance/Demographic Research Unit. 2014. Modeling Methodology for the State and County Population Projections. Accessed March 2016: <http://www.dof.ca.gov/research/demographic/projections/>
- Cialdini, R.B., R.R. Reno, and C.A. Kallgren. 1990. A focus theory of normative conduct: Recycling the concept of norms to reduce littering in public places. *Journal of Personality and Social Psychology*, 58:1015–1026.
- Cialdini, R.B. 2003. Crafting normative messages to protect the environment. *Current Directions in Psychological Science*, 12:105.
- Cialdini, R.B., L.J. Demaine, B.J. Sagarin, D.W. Barrett, K. Rhoads, and P.L. Winter. 2006. Managing social norms for persuasive impact. *Social Influence*, 1(1):3–15.
- Costanzo, M., D. Archer, E. Aronson, and T. Pettigrew. 1986. Energy conservation behavior: the difficult path from information to action. *American Psychologist*, 41:521–528.
- Crowe, D. 1983. *Comprehensive Planning for Wildlife Resources*. Cheyenne, Washington: Wyoming Game and Fish Department.
- Duda, M.D., Bissell, S.J., & Young, K.C. 1998. *Wildlife and the American Mind: Public Opinion on and Attitudes toward Fish and Wildlife Management*. Responsive Management. Harrisonburg, Virginia.
- Ferraro, P.J. and M.K. Price. 2013. Using non-pecuniary strategies to influence behavior: Evidence from a large scale field experiment. *The Review of Economics and Statistics*, 95(1):64-73.
- Financial Brand, The. 2014. Say It Again: Messages Are More Effective When Repeated. Accessed from <http://thefinancialbrand.com/42323/advertising-marketing-messages-effective-frequency/>
- Hahs-Vaughn, Debbie L. 2005. A primer for using and understanding weights with national datasets. *The Journal of Experimental Education*, 73(3), 221-248.
- Heberlein, T.A. 2012. *Navigating Environmental Attitudes*. New York, NY: Oxford University Press.

- Jensen, Douglas. 2010. *Stop aquatic hitchhikers: from theory to application*. Overview of program implementation and results. University of Minnesota Sea Grant Program, Duluth. Accessed from [http://mipn.org/MNWIISC%20talks/upload%20folder/Monday\\_PM\\_%20AIS\\_Awareness\\_Jensen\\_Web\\_Version.pdf](http://mipn.org/MNWIISC%20talks/upload%20folder/Monday_PM_%20AIS_Awareness_Jensen_Web_Version.pdf)
- Kotler, P. 2002. *Marketing Management*. (11<sup>th</sup> edition). Upper Saddle River New Jersey: Prentice Hall.
- Landers, J., P. Mitchell, B. Smith, T. Lehman, C. Conner. 2006. Save the crabs, then eat 'em: a culinary approach to saving the Chesapeake Bay. *Social Marketing Quarterly*, 12(1):15-28.
- McKay, Chuck. 2016. A Strategy for Frequency in Newspaper Advertising. Accessed May 2016: <https://www.allbusiness.com/>
- McKenzie-Mohr, D. and W. Smith. 1999. *Fostering sustainable behavior: an introduction to community-based social marketing* (2<sup>nd</sup> edition). Gabriola Island, BC: New Society.
- Nevada Division of Environmental Protection. 2015. NDEP's Nonpoint Source Management Program Update. Carson City, NV.
- Nevada State Demographer's Office. 2014. Nevada County Age, Sex, Race, and Hispanic Origin Estimates and Projections 2000 to 2033: Estimates from 2000 to 2013 and Projections from 2014 to 2033. Accessed March 2016: <http://nvdemography.org/data-and-publications/>
- Paul Werth Associates. 2014. Wear It! campaign awareness survey. Commissioned by the National Safe Boating Council. Accessed from [http://www.safeboatingcampaign.com/Wear-ItResearch-2014\\_9-5-2014-FINAL.pdf](http://www.safeboatingcampaign.com/Wear-ItResearch-2014_9-5-2014-FINAL.pdf)
- Recreational Boating and Fishing Foundation, The. (2013). Take Me Fishing. [Press Release]. Accessed from <http://news.takemefishing.org/hispanic-pilot-states>.
- Recreational Boating and Fishing Foundation, The. (2015). RBFF Hispanic Marketing Strategies Webinar. [PowerPoint Webinar]. Accessed from <http://www.takemefishing.org/getmedia/32151ba8-3959-4c29-b422-dc4790d6894c/HispanicMarketingStrategiesWebinarPresentation.aspx>.
- Responsive Management. 2003. Understanding the Georgia Public's Perception of Water Issues and the Motivational Messages to Which They Will Respond. Conducted for the Georgia Department of Natural Resources. Harrisonburg, VA.
- Responsive Management. 2015. Watershed-Literacy Survey of Carson River Watershed Residents. Harrisonburg, VA.
- Schultz, P.W. 2001. Assessing the structure of environmental concern: concern for self, other people, and the biosphere. *Journal of Environmental Psychology*, 21:1-13.
- Schultz, P.W. 2011. Conservation means behavior. *Conservation Biology*, 25(6):1080-1083.

Stern, P. C. 2000. Toward a coherent theory of environmentally significant behavior. *Journal of Social Issues*, 56:407–424.

U.S. Census Bureau. Accessed March 2016 from: <http://factfinder.census.gov>.

U.S. Coast Guard. 2014. 2013 recreational boating statistics. Office of Auxiliary and Boating Safety. COMDTPUB P16754.27. Accessed March 2016 from: <http://www.uscgboating.org/assets/1/AssetManager/2013RecBoatingStats.pdf>

## **APPENDIX A: ENVIRONMENTAL EDUCATION ROUNDTABLE DOCUMENTS**

This appendix includes the following documents from the 2nd Environmental Education Roundtable, held by the Education Working Group of the Carson River Coalition on April 26, 2016, in Carson City, Nevada.

- Program Evaluation Form
- Roundtable notes
- Roundtable slideshow with “clicker” survey results
- Program and agenda flyer

<p align="center"><b>Carson River Watershed Education Programs</b>  <b>Program Evaluation Form</b>                      (turn off insert to ease entry)</p>	
Organizations name:	Name of program:
Contact name:	Address:
Phone:	
Email:	Web address:
Briefly describe program: _____ _____	
How long has this program been active? In Years:	Venue for program: Requested [ ] Event [ ] Ongoing [ ]
Who is the target audience?	Number of?
Geographic area: _____	Number of adults reached: _____
Age range: _____	Number of children reached: _____
Ethnicity : _____	Number of volunteers: _____
An education component? Yes [ ] No [ ]	Do you track efforts? Yes [ ] No [ ]
What is the program's focus?	What targets do you track?
• _____ • _____	• _____ • _____
Any restoration component? Yes [ ] No [ ]	Do you track efforts? Yes [ ] No [ ]
What is the programs focus?	What targets do you track?
• _____ • _____	• _____ • _____
Briefly describe program outcomes to date: _____ _____	
How do you evaluate program effectiveness: Surveys [ ] Monitoring [ ] Tracking [ ] Mapping [ ] GPS [ ] Other [ ] Describe _____	
How is the program funded? Base funding [ ] Grants [ ] Donations [ ] Volunteer [ ] Other [ ] Describe _____	

## **4-26-16 CRC Environmental Education Round Table Notes**

(see attached Roundtable Schedule)

### **Welcome, Purpose and Overview of the Day** - Brenda Hunt

### **Presentation of the 2015 Wendell McCurry Excellence in Water Quality Award** - Dave

Emme, NDEP Administrator, and Jennifer Carr, NDEP Deputy Administrator awarded the 2015 Wendell McCurry award to Sue Jacox, founder of the Great Basin Outdoor School.

### **Introductions/Participant Survey:**

Steve Lewis asked for each participant to introduce themselves and tell what their favorite thing about the Carson River watershed is. Responses included:

- Diverse recreational opportunities
- Quality drinking water
- Flora and fauna
- Watershed-wide cooperation
- Floodplain preservation
- Diversity
- Hot springs
- Accessibility to the river
- Bus tour

### **Introduction to the Watershed-Literacy Program** – Brenda Hunt

### **Presentation on Watershed-Literacy Survey and Draft Communication Plan** – Mark Duda

Mr. Duda explained the methodology of survey taking – called cell and landlines – eliminated businesses, answering machines, and younger kids – included Spanish-speakers (see attached PowerPoint presentation, data sheet, and survey form)

Section 1: Watershed Literacy Survey of CR Watershed Residents – talked to residents about:

- Environmental values
- Knowledge of watersheds
- Health of the Carson River watershed
- Activities that affect watershed conservation
- Sources of information
- Demographics

Lunch from The Tamale Lady was served.

### **Networking/water model demonstrations**

**Workshop: Top 5 target areas** - Steve, Mark, and Brenda**Breakout session #1:**

**Environmental messaging topics** – message topics most needed to improve our watershed:

Suggestions offered:

- Everything is connected
- The CR Watershed: A Lifeline Connecting our Communities
- What's in your drinking water?
- Piggy back on Take Care of Tahoe Campaign
- Floods can happen anywhere
- Two campaigns: Living With Water. Living Without Water.
- Carson Clear Water Revival
- What goes down your drain?
- Water – just know it.
- Thirsty? You're drinking your watershed.
- Do you know your watershed?
- Your watershed; your future.
- Reconnect to the river.
- Connect to your water.
- Water is precious. Use it efficiently.
- Give rivers room to roam and flood their floodplains!
- Connect to our lifeline in the desert.
- Helping our watershed - CWSD.
- Do your part, don't waste water.
- It's your water!
- Protection, education & involvement – the new way to a healthy, wealthy watershed.
- Water you want?
- Your water. Where does it come from? Where does it go?
- Dog poop: Would you drink it?
- Healthy water (or watershed) = healthy life.
- No floodplains = more flooding.
- The Carson River, you're connected.
- Water it matters – it's all about the Carson.
- Your water. Can you drink it? Carson River Watershed.
- A watershed cannot be bottled.
- Your home. Your water. Your Nevada.
- Home means the Carson River.
- Every drop matters. Help protect your local water.
- Floodplains free forever!

- Your watershed ...are you connected?
- Floodplains are for floods.
- A healthy watershed starts with us.
- No watershed; no water.

**Most popular suggestions:**

- Where does your water shed?
- Got Water? It's what's on tap.
- The Carson (River) flows through us.
- Only rain in the storm drain.
- Water doesn't come from a faucet.
- Your water. Where does it come from? Where does it go?
- Give a shit! Commit to a clean, healthy watershed.
- Nevada Floods: Are you prepared?
- You're only as healthy as your watershed.
- Open floodplains save lives.
- You are what you drink. Protect the Carson (River Watershed).
- Five out of five water experts (scientists?) recommend protecting the Carson River/Watershed.

**What's missing: Other message topics**

- Coordination efforts in land management
- Use "basin", "river", "catchment", "drainage" instead of "watershed."
- Environment in water rights equation
- Illegal dumping
- Climate change
- Drought
- Fuels reduction
- Recreation
- Fisheries issues
- Habitat diversity
- Efficient water use
- Nevada Floods - Are you prepared?
- Riparian benefits and function
- Where does water flow - run - used for?

**Breakout session #2:****Overarching theme language:**

- Tahoe: Take Care Tahoe. If it's your dog, then it's your doody. There's a better spot to hide your garbage – your trash can.
- Indiana: Clear Choices, Clean Water – subthemes “Your pet poo choices are connected to clean water.”
- EPA Water Sense campaigns: something for every week in the year, like “Fix a Leak Week.”
- Don't barter with our water.
- Acronym that will spell out WATER: examples: "Watersheds Are The Existence of Rivers" or “We Are The bEst River.”
- The Carson River: our water, our life.
- Cool, clear, clean Carson.
- How far would you go to keep your water clean?
- Carson cares, keep it clean.
- Keep it clean.
- The Carson River: Our lifeline in the desert.
- Carson Clear Water Revival
- Our river, our lifeline.
- Your water; your life.
- Carson River Watershed: A lifeline connecting our communities.
- Clean water; healthy foods.
- Do your part for a clean, clear Carson.
- Care for the Carson.
- What's in your water, Nevada?
- Carson River Coalition
- It's your water, Nevada.
- Protect your watershed; protect your future.
- You're 98% Carson River.
- Your health, your river.
- Flow free, live well.
- Even when you're in bed, you're in a watershed.
- Your watershed, your health.
- Your water, your choice.
- Keep it clean.
- Know the flow.

**Most popular:**

- Use your head in a watershed.
- One water - one watershed.
- Our river, our responsibility.
- Use your brain...it's more than rain.
- Only you can prevent dirty water.
- Find your river connection.
- Our water reflects our choices.
- Our river reflects our choices.
- The water reflects your choices.
- Think outside the river.

**Where do we go from here?**

**Next steps:**

- Bring these results to the Education Working Group.
- Bring these results back to the CRC.
- Obtain funding.
- Look at other national campaigns we can piggyback on.
- Willingness for each of you to fill out program data sheets. All data will be pooled and sent back to use in your funding efforts.
- Heath map (Community Foundation of Western Nevada) which identifies who is serving what areas and topics to determine gaps.
- Army Corps of Engineers funding.
- Reach out to others not participating yet - everyone reach out.

**How are these message topics not right for youth?**

- Younger audiences are more empathetic - use animals/habitat as a hook.
- Identified messages geared toward adults. For youth messages need to be not so much geared to homeowners.
- Need diagrams for kids - where does water come from/go?
- Choose 5 or so topics.

**Thoughts on next steps:**

- Rachel Orellana – working collaboratively to get funding pools – upcoming opportunity request for proposals next week – ACOE growing pot of money to empower funding your ideas like floodplain mgmt. plans – public engagement and involvement to hear what public would like to have done regarding the floodplain – Flood Risk Awareness video – support FEMA remapping – ACOE resources to help get our project done - \$3-6 million regionally, \$15-60 million nationwide – priority given to shared responsibility,

floodplain mgmt. plan – call for proposals next week, collecting ideas, work with Bunny to decide which way to go, ACOE make a proposal.

- Lynn Zonge – how to get information to other environmental educators. – Brenda encouraged everyone to talk with co-workers and others. BLM, USFS. Welcome ideas how to bring folks into involvement.
- Sarah Green – use national, state or regional examples to tag onto. Brenda - We have to consider costs of campaign.
- Survey monkey evaluation of this event. Is your organization willing to be part of a healthy watershed campaign and disseminate messages as they are determined? Unanimous show of hands.
- Linda Conlin – EWG open to anyone who would like to attend. Monthly for 2 hours. Brenda will Doodle poll next EWG meeting date.
- Mary Kay Wagner – each reach out to players/partners to invite them to engage in this process. Many water users, lots of needs and demands for the water system, but only one water resource.
- Steve Lewis – sense of campaign effort has come to this point – results of survey leads us to the next stage – next 10 topics – message phrases – identified some topics which have not been identified – difference between adult and youth audiences – overarching theme/tag line – next steps for next phase.

**Final evaluation** - Steve Lewis

**Closing comments** - Brenda Hunt

Brenda will set up a Survey Monkey in the next few days. Thank you to Education Working Group members, Steve Lewis and Mark Duda, the break out leaders and recorders, and Courtney Walker for helping dream big dreams and making them a reality. CWSD staff for their various contributions toward the event. NDEP for funding and Jean Stone, Mary Kay, and Birgit's involvement. Thanks to the venue staff, LaVonne and Jeremy, and to Michael Smith for videotaping the event which may be shown on access TV.

Bus tour on June 7-8 – great overview of integrated watershed planning and processes.

Linda Conlin thanked Brenda for her vision and tenacity in taking on this job.

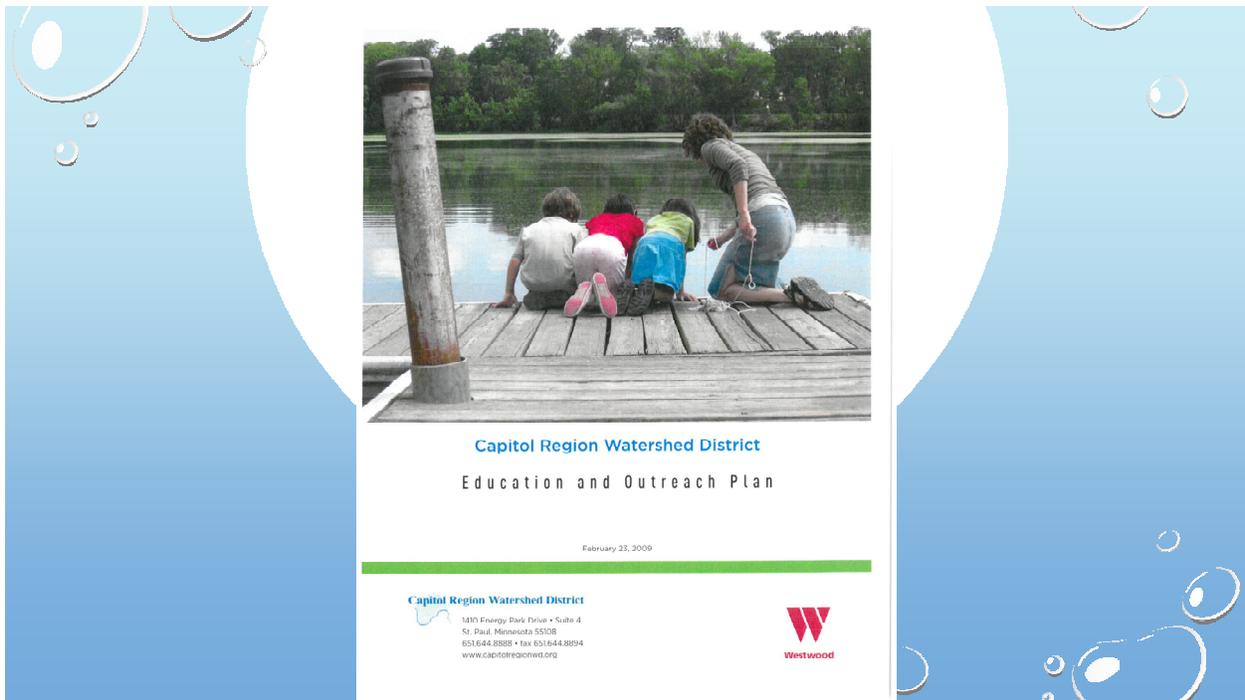
# Welcome to the CRC Roundtable

## Participant Introductions

- Name
- Agency/Organization
- What is the Carson River Watershed's most outstanding feature?



In the beginning...



Capitol Region Watershed District  
Education and Outreach Plan

February 23, 2009

Capitol Region Watershed District  
1481 Energy Bank Forum • Suite 4  
St. Paul, Minnesota 55108  
651.644.8888 • fax 651.644.8894  
www.capitolregionwd.org

Westwood

...the change we'd like to create through education...

## **Vision**

*A Carson River Watershed community that believes their behavior impacts watershed-wellness and applies their knowledge to act in ways that benefit the Watershed as a whole.*

...the broad subjects within which our education efforts must concentrate...

## **Main Themes**

- Water Quality
- Floodplain Protection
- Habitat Protection
- Sustainable Water Supply

...the biggest challenges our education programs must address...

### **Driving Forces**

- Lack of public understanding of watershed functions and that they (the public) can make a difference
- Lack of desirable habitats
- Finite water resources with competing demands
- Lack of consistent watershed-wide floodplain management decisions
- Water quality impairment (303d listed river)
- Lack of resilience and adaptability to the uncertain
- Lack of money – money driving development

...the actions needed to achieve our vision...

### **Objectives**

- 1) Conduct a knowledge baseline survey
- 2) Conduct a media campaign
- 3) Conduct follow-up surveys annually
- 4) Focus on particular audience groups learning about particular topics. Objective 1-3 were sequential in nature, and Objective 4 is more long-term and will be adjusted based on the results of 1-3.

...in a nutshell, what do our main audience groups need to know and need to do?

### **Three audiences and messages:**

Message for **Adult Public**: To know what a watershed is; that we are all connected in the watershed; and that their actions have impact on all.

Message for **Youth**: Their actions have impact on all; and an understanding of water issues.

Message for **Policy & Regulation Decision-Makers**: The need for a healthy watershed; how to achieve and maintain a healthy watershed; and knowledge of what the other audience groups are learning.

## ...what behaviors should our audiences exhibit?

### **Desired behaviors:**

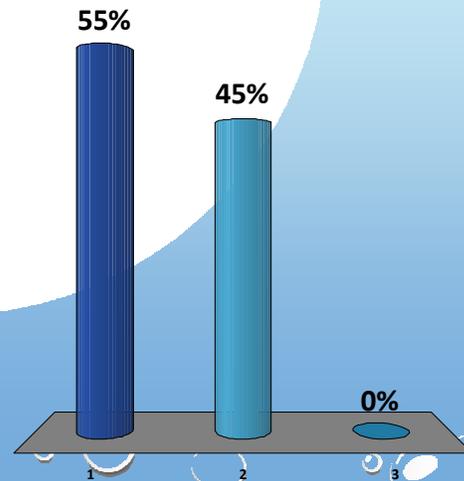
- Become watershed stewards
- Enjoy being at the river; have fun; make the connection
- Make the connection, access to the river, and have fun
- Act like you know you live in the desert
- Protect the natural system storage
- Practice “Smart” development – grow and develop with watershed well-being as a top priority

## ...so what are examples of connection, and understanding and nurturing the relationship...

- Upper with lower watershed sections
- The river with their floodplains
- People with fun/recreation
- Habitat with water quality
- Wildlife with ranching
- Surface water with groundwater
- People with water/groundwater
- Kids with fun
- Passion with preservation
- Recreation with river
- Tributaries with river
- Alpine with desert
- California with Nevada

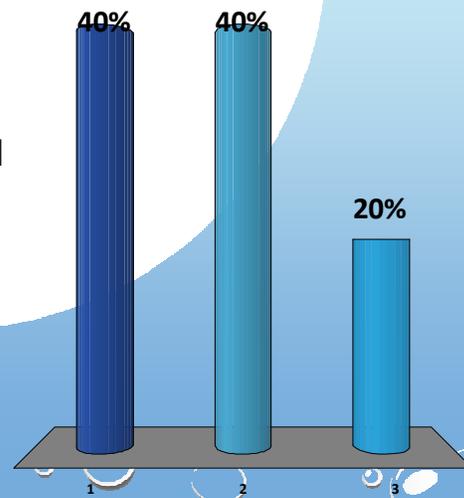
### Have you ever used clicker technology?

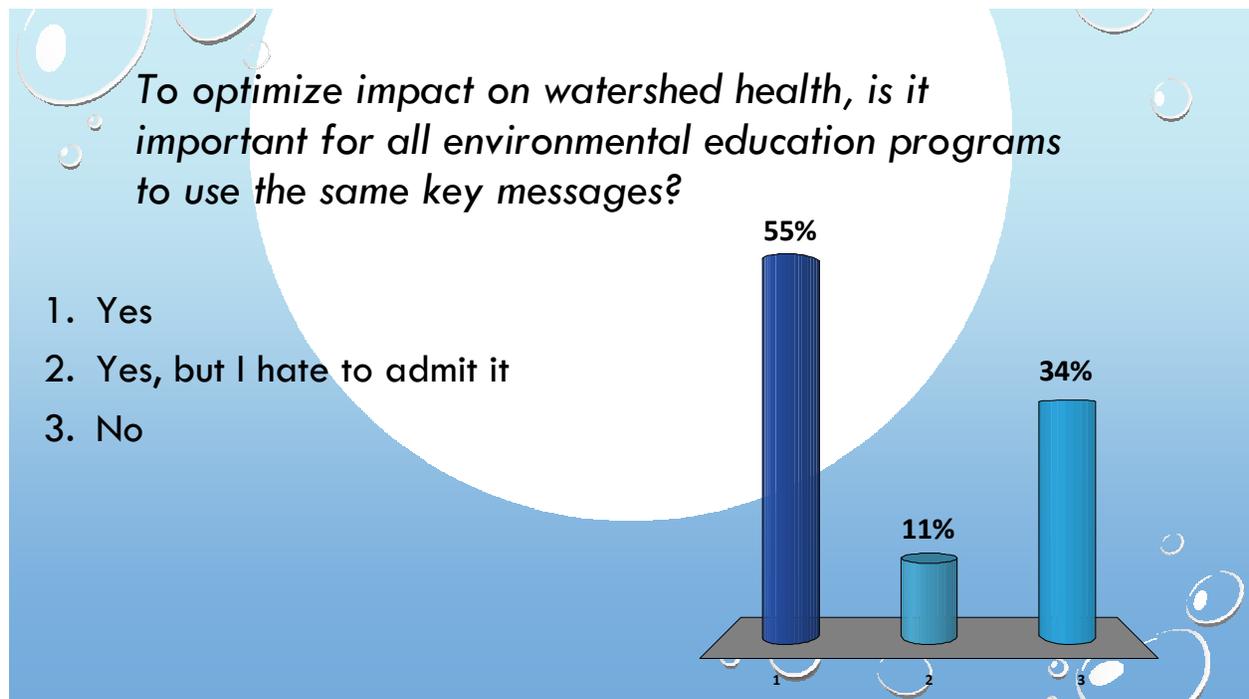
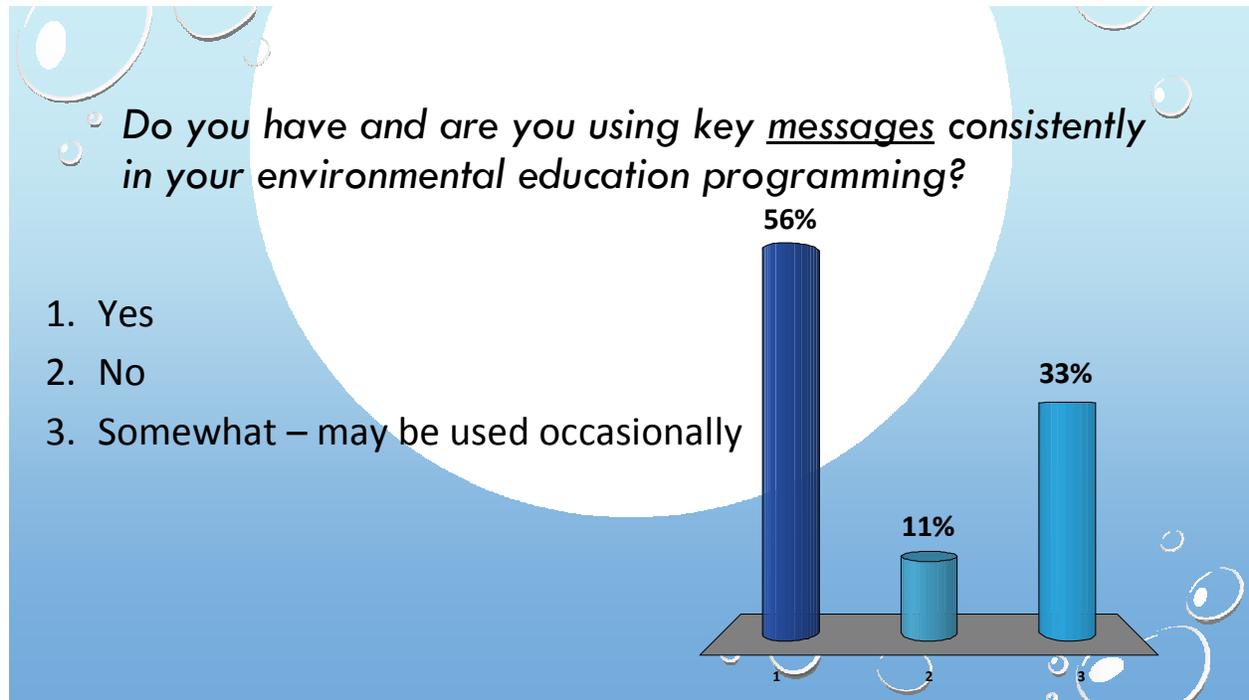
1. Yes
2. No
3. I don't know if I have or not



### Do you have access to clickers?

1. Yes
2. No
3. I don't know, or I've never asked



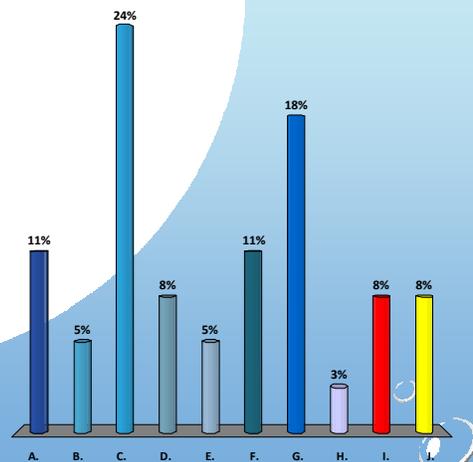


## Message Topics

- A. Reducing runoff from their property can improve water quality.
- B. The Carson river and its watershed is the source of drinking water.
- C. Inform residents that they live in a watershed.
- D. Yard and land maintenance affects the Carson river and its watershed.
- E. Connect residents' health and quality of life to the health of their watershed.
- F. Educate residents on the importance of reducing polluted run-off.
- G. Protect water quality and avoid wasting water.
- H. Proper disposal of used oil and hazardous materials improves the health of the watershed.
- I. Controlling invasive species improves the health of the Carson river and its watershed.
- J. Protect the floodplain from future development.

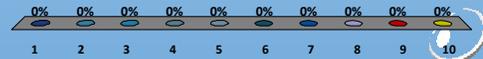
## Which message topic are you currently using to the greatest extent?

- A. Reducing runoff from their property can improve water quality.
- B. The Carson River and its watershed is the source of drinking water.
- C. Inform residents that they live in a watershed.
- D. Yard and land maintenance affects the Carson River and its watershed.
- E. Connect residents' health and quality of life to the health of their watershed.
- F. Educate residents on the importance of reducing polluted run-off.
- G. Protect water quality and avoid wasting water.
- H. Proper disposal of used oil and hazardous materials improves the health of the watershed.
- I. Controlling invasive species improves the health of the Carson River and its watershed.
- J. Protect the floodplain from future development.



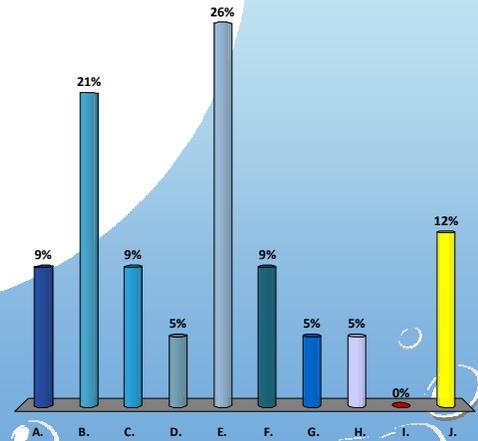
### Which message topic are you most likely to start using?

- A. Reducing runoff from their property can improve water quality.
- B. The Carson River and its watershed is the source of drinking water.
- C. Inform residents that they live in a watershed.
- D. Yard and land maintenance affects the Carson River and its watershed.
- E. Connect residents' health and quality of life to the health of their watershed.
- F. Educate residents on the importance of reducing polluted run-off.
- G. Protect water quality and avoid wasting water.
- H. Proper disposal of used oil and hazardous materials improves the health of the watershed.
- I. Controlling invasive species improves the health of the Carson River and its watershed.
- J. Protect the floodplain from future development.



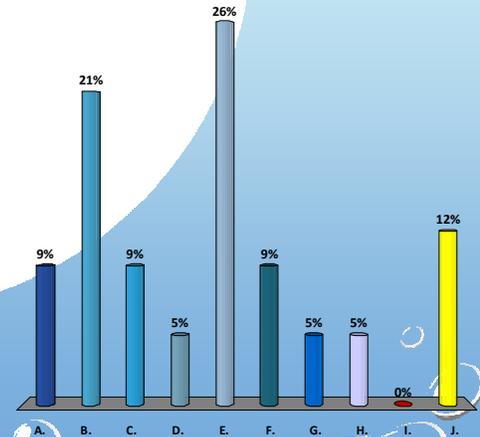
### Which message topic is the most needed to improve watershed health?

- A. Reducing runoff from their property can improve water quality.
- B. The Carson River and its watershed is the source of drinking water.
- C. Inform residents that they live in a watershed.
- D. Yard and land maintenance affects the Carson River and its watershed.
- E. Connect residents' health and quality of life to the health of their watershed.
- F. Educate residents on the importance of reducing polluted run-off.
- G. Protect water quality and avoid wasting water.
- H. Proper disposal of used oil and hazardous materials improves the health of the watershed.
- I. Controlling invasive species improves the health of the Carson River and its watershed.
- J. Protect the floodplain from future development.



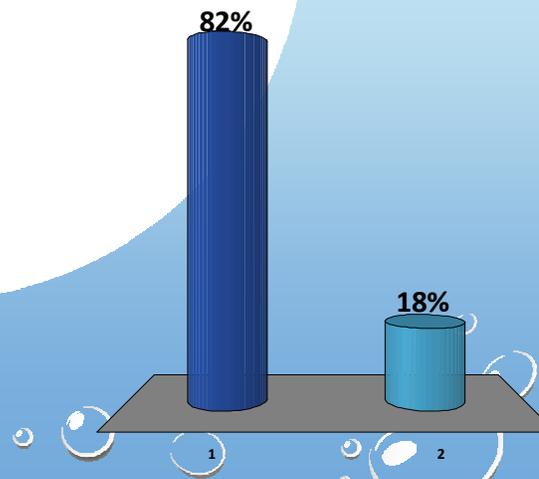
## Which message topic is the most needed to improve watershed health?

- A. Reducing runoff from their property can improve water quality.
- B. The Carson River and its watershed is the source of drinking water.
- C. Inform residents that they live in a watershed.
- D. Yard and land maintenance affects the Carson River and its watershed.
- E. Connect residents' health and quality of life to the health of their watershed.
- F. Educate residents on the importance of reducing polluted run-off.
- G. Protect water quality and avoid wasting water.
- H. Proper disposal of used oil and hazardous materials improves the health of the watershed.
- I. Controlling invasive species improves the health of the Carson River and its watershed.
- J. Protect the floodplain from future development.



## These message topics were identified by respondents 18 years and older. Do they align with message topics for audiences younger than 18?

- 1. Yes
- 2. No (please describe the disparity)



*For the 5 or so message topics that floated to the top of the lists in the clicker questions craft some key messages that can be used by you and others.*

## Overarching Theme

*If you were to put a ribbon around the healthy watershed campaign and come up with a short catchy phrase that captures the essence of what we want to accomplish via our collective environmental education efforts and the watershed we hope to create what words would describe our overarching theme?*

# Thank You!

To our partners and each person on the Education Working Group of the Carson River Coalition who contributed to make this roundtable a success, and All of the Roundtable participants for making this event possible and for submitting program data sheets for everyone's benefit!



Instructions for living a life.  
Pay attention.  
Be astonished.  
Tell about it." — Mary Oliver



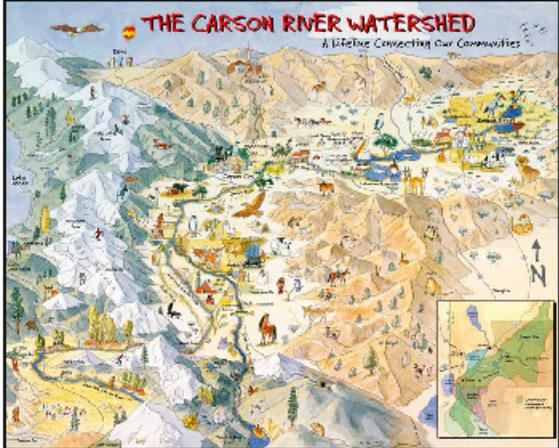
Funding for the Roundtable was provided by a Clean Water Act 319 (h) grant from the Nevada Division of Environmental Protection, and also funds from the Carson Water Subconservancy District.





## Carson River Watershed 2nd Environmental Education Roundtable

Hosted by the Education Working Group



April 26, 2016  
8:30 - 4:00 p.m.  
Ruvo Hall, Nevada Governor's Mansion  
Carson City, Nevada

"Said the river:  
 imagine everything you can imagine, then  
 keep on going."

— *Mary Oliver*, from *At the River Clarion, Evidence*, 2009.



2012 Conservation Tours  
 Raft Trip



Citizen Monitoring Training  
 Alpine Watershed Group

### Roundtable Schedule

Time	Topic	Speaker
8:30 AM	Registration opens	Debbie/Toni
9:00 AM	Welcome, Purpose and Overview of the Day	Brenda Hunt, Carson Water Subconservancy District
9:15 AM	Presentation 2015 Wendell McCurry Excellence in Water Quality Award	Dave Emme, Administrator Jennifer Carr, Deputy Administrator, P.E., CEM, CPM
9:30 AM	Participant Introductions/ Roundtable Participant Survey using Clicker Technology	Steve Lewis, University of Nevada Cooperative Extension
9:55 AM	Watershed-Literacy Program	Brenda Hunt
10:15 AM	Break	
10:30 AM	Watershed-Literacy Survey and draft Communications Plan Presentation	Consultant Keynote Speaker: Mark Duda, Responsive Management
Noon	Lunch	Lady Tamales catered
12:30 PM	Networking/ Water model demonstrations	Various
1:00 PM	Workshop: Top 5 target areas	Steve, Mark and Brenda
1:45 PM	Breakout session #1	
2:15 PM	Breakout session #2	
2:45 PM	Break/Networking	
3:00 PM	Where do we go from here?	Brenda Hunt/Steve Lewis
3:40 PM	Final evaluation	Steve Lewis
3:50 PM	Closing comments	Brenda Hunt
4:00 PM	Adjourn	

## ABOUT RESPONSIVE MANAGEMENT

Responsive Management is an internationally recognized public opinion and attitude survey research firm specializing in natural resource and outdoor recreation issues. Our mission is to help natural resource and outdoor recreation agencies and organizations better understand and work with their constituents, customers, and the public.

Utilizing our in-house, full-service telephone, mail, and web-based survey center with 50 professional interviewers, we have conducted more than 1,000 telephone surveys, mail surveys, personal interviews, and focus groups, as well as numerous marketing and communication plans, needs assessments, and program evaluations. Clients include the federal natural resource and land management agencies, most state fish and wildlife agencies, state departments of natural resources, environmental protection agencies, state park agencies, tourism boards, most of the major conservation and sportsmen's organizations, and numerous private businesses. Responsive Management also collects data for many of the nation's top universities.

Specializing in research on public attitudes toward natural resource and outdoor recreation issues, Responsive Management has completed a wide range of projects during the past 22 years, including dozens of studies of hunters, anglers, wildlife viewers, boaters, park visitors, historic site visitors, hikers, birdwatchers, campers, and rock climbers. Responsive Management has conducted studies on endangered species; waterfowl and wetlands; and the reintroduction of large predators such as wolves, grizzly bears, and the Florida panther. Responsive Management has assisted with research on numerous natural resource ballot initiatives and referenda and has helped agencies and organizations find alternative funding and increase their membership and donations. Additionally, Responsive Management has conducted major organizational and programmatic needs assessments to assist natural resource agencies and organizations in developing more effective programs based on a solid foundation of fact.

Responsive Management has conducted research on public attitudes toward natural resources and outdoor recreation in almost every state in the United States, as well as in Canada, Australia, the United Kingdom, France, Germany, and Japan. Responsive Management has also conducted focus groups and personal interviews with residents of the African countries of Algeria, Cameroon, Mauritius, Namibia, South Africa, Tanzania, Zambia, and Zimbabwe. Responsive Management routinely conducts surveys in Spanish and has conducted surveys in Chinese, Korean, Japanese and Vietnamese and has completed numerous studies with specific target audiences, including Hispanics; African-Americans; Asians; women; children; senior citizens; urban, suburban, and rural residents; large landowners; and farmers.

Responsive Management's research has been upheld in U.S. District Courts; used in peer-reviewed journals; and presented at major natural resource, fish and wildlife, and outdoor recreation conferences across the world. Company research has been featured in most of the nation's major media, including CNN, *The New York Times*, *The Wall Street Journal*, and on the front pages of *USA Today* and *The Washington Post*. Responsive Management's research has also been highlighted in *Newsweek* magazine.

Visit the Responsive Management website at:  
**[www.responsivemanagement.com](http://www.responsivemanagement.com)**