

# Littering in Wake County:

## Attitudes, Behavior, and Perspectives on Prevention

Presented to:

Wake County Environmental Services



Center for Urban Affairs &  
Community Services

NC State University

October 2010



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**LITTERING IN WAKE COUNTY:**  
**ATTITUDES, BEHAVIOR, AND PERSPECTIVES ON PREVENTION**

**Presented to:**

**WAKE COUNTY DEPARTMENT OF ENVIRONMENTAL SERVICES**

**Conducted by:**

**CENTER FOR URBAN AFFAIRS & COMMUNITY SERVICES**

**NC State University  
Raleigh, NC**

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**LITTERING IN WAKE COUNTY:  
ATTITUDES, BEHAVIOR, AND PERSPECTIVES ON PREVENTION**

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# **LITTERING IN WAKE COUNTY:**

## **ATTITUDES, BEHAVIOR, AND PERSPECTIVES ON PREVENTION**

### **EXECUTIVE SUMMARY**

Under contract to Wake County Environmental Services, the NC State University Center for Urban Affairs and Community Services conducted a telephone survey of randomly-selected Wake County households and a voluntary web survey of Wake County residents. The surveys were conducted during the summer of 2010 and focused on attitudes, behaviors, and perceptions relating to litter. The data resulting from these surveys will be used to inform planning for Wake County's upcoming *86th Anti-Litter Movement*. This executive summary highlights major findings from the project.

#### **PERCEPTIONS OF LITTER**

Generally speaking, survey respondents regard litter as a stable or increasing problem facing Wake County. This is particularly true among web respondents, who likely volunteered to participate in the survey due to concerns or interest in environmental issues. Study respondents report that litter is most common along Interstate and state highways, tossed out by motorists or vehicle passengers. Respondents regard beverage containers, plastics, and fast food wrappers as the most common forms of litter.

#### **LITTERING BEHAVIOR**

Most respondents believe that littering is an intentional act, attributable to individual apathy or lack of knowledge. Respondents in both survey samples generally seem to perceive that littering is a personal decision. Yet when asked about their own behavior, the vast majority of respondents report that they would be unwilling to litter across a wide variety of circumstances. Respondents overwhelmingly report that they are willing to pick up their own litter and trash on their property, but are more ambivalent about picking up after others.

#### **DIFFERENCES AMONG RESPONDENTS**

There were few differences among respondents regarding litter attitudes, behavior, or perceptions. The most consistent differences appear between the relatively young versus older respondents and property owners versus renters. Older individuals are more likely to perceive litter as a serious problem and take action to prevent it than younger individuals. Likewise, based on self-reports, those who own their home and/or surrounding land are more willing to pick up litter than those who rent. These findings suggest that those who are established and invested in their communities are most concerned about littering and changing littering behavior.

# **LITTERING IN WAKE COUNTY:**

## **ATTITUDES, BEHAVIOR, AND PERSPECTIVES ON PREVENTION**

### **EXECUTIVE SUMMARY**

#### **LITTER PREVENTION**

Respondents generally believe that emphasizing the financial, legal, and aesthetic costs of littering has the greatest potential to change littering behavior. Residents are especially optimistic about enforcing or increasing fines for littering.

#### **LITTER CAMPAIGNS**

Respondents are familiar with a number of existing anti-litter campaigns, particularly those that are national in scope (e.g., Keep America Beautiful, Adopt-a-Highway). Web respondents are especially familiar with such campaigns and associated anti-litter slogans, perhaps because of an enduring concern with environmental issues. Residents tend to learn about such programs from television, billboards and newspapers. Familiarity with anti-litter campaigns is associated with willingness to pick up trash and perceptions of how litter has changed over time.

Respondents participating in the voluntary web survey are notably interested in litter prevention and deterrence. About two-thirds of these respondents indicate that they would be willing to volunteer about twice per year time to pick up litter within their communities.

#### **CONCLUSIONS**

Wake County residents perceive that litter is a problem, and are willing to support legal and community action to prevent littering. Respondents are generally informed about existing anti-litter campaigns, and such campaigns appear to affect perceived severity of the litter problem as well as likelihood to change behavior. Those who are especially invested in the community—namely, those who own property and those who are older—are most concerned and willing to act. Future campaigns can work to better involve the relatively young and transient in collective efforts to prevent littering, and mobilize the enthusiasm of those already invested in environmental change.

# **LITTERING IN WAKE COUNTY: ATTITUDES, BEHAVIOR, AND PERSPECTIVES ON PREVENTION**

## **I. PROJECT BACKGROUND INFORMATION**

### **A. STUDY OBJECTIVES**

The Wake County Environmental Services Department plans to launch a new anti-litter outreach campaign in 2011. The campaign, referred to as the *86it Anti-Litter Movement*, will provide information about the impact of litter with the ultimate goals of educating the public about littering and reducing littering in Wake County.

During the summer and fall of 2010, the NC State University Center for Urban Affairs and Community Services conducted a study under contract to Wake County Environmental Services. The study utilized survey data from two samples: a randomly selected household sample of individuals who completed a telephone interview, and a voluntary sample of individuals who completed a survey online. This report presents the findings of the study, which will be used to provide baseline data to guide the planning and implementation of the *86it Anti-Litter Movement*.

### **B. THE STUDY OF LITTERING BEHAVIOR**

Littering, defined as the intentional or unintentional disposal of waste in public or non-owned private spaces, is a social behavior typically classified into two types: active and passive. Active littering occurs when an individual intentionally leaves trash behind upon leaving an area. Passive littering occurs when an individual holds trash in an area for some period of time, but leaves it behind when exiting—seemingly (but not necessarily) unintentionally (Sibley and Liu 2003). Seventeen percent of trash disposals in public spaces constitute littering, and eighty-one percent of these disposals are intentional (KAB 2006).

Although littering is common, litterers routinely deny responsibility for their behavior and rarely face consequences for their crime—even though over ninety percent of the population regard littering as a serious problem (Keep Iowa Beautiful 2002). In one study, twenty-five percent of participants admitted to littering at the beach but most blamed others for problems associated with littering (Santos et al. 2005).

Individuals may litter because they believe others will pick up after them, freeing themselves from personal accountability (Florida Litter Information 2008). A sizable percentage of litterers openly refuse to stop littering, either because they regard change as inconvenient or consider littering as a means to rebel against established authorities (i.e., the government) (Department of Environmental Conservation 2005). Others view personal littering infractions as only minor wrong-doings (Keep Iowa Beautiful 2002). One study found that sixty-nine percent of litterers in Arizona believed they would not be punished for dropping trash (Don't Trash AZ 2008).

Regardless of intent, littering has deleterious consequences for both human health and global ecosystems. Litter in oceans and waterways harms wildlife, contaminates food supplies, and interferes with industry (EPA 2010a, 2010b). Litter accumulates along coastlines and natural habitats,

## I. PROJECT BACKGROUND INFORMATION

with one agglomeration growing to the size of Texas in the middle of the Pacific Ocean (Garbage Patch 2010). Discarded items can become home to disease-transmitting insects, including mosquitoes and flies (Florida Litter Information 2008). Litter likewise populates towns and cities and becomes an eyesore for local residents. Because the ecological and health consequences of unchecked litter are so severe, localities must routinely invest time and resources into cleaning litter. In New York City, 450 trucks sweep street litter each day, and ninety-one trucks collect litter from street-side baskets (EPA 2005). In total, national litter clean-up costs close to \$11.5 billion each year (KAB 2006). Anti-litter resources are overwhelmingly used for clean-up rather than prevention (Keep Iowa Beautiful 2002, 2006).

A number of studies have examined the correlates of and possible solutions to the problems of litter. Some research (Krauss, Freedman, and Whitcup 1976) suggests that men litter more than women, and that littering declines with age. Santos, Friedrich, Wallner-Kersanach, and Fillmann (2005) conclude that among beach users, persons in lower socioeconomic strata are more likely to litter than more affluent persons. Motorists litter about twice as often as pedestrians (52% vs. 23%, respectively; KAB 2006). Smokers, those who consume fast food at least twice per week, bar and restaurant consumers, and pick-up truck drivers, likewise, have been found to litter more than others (Don't Trash AZ 2009).

Other studies, focusing on the environmental correlates of littering (Reiter and Samuel 1980; Krauss, Freedman, and Whitcup (1976), find that littered environments are more likely to become subsequent targets of litter than non-littered environments. In communities in which individuals believe others will abstain from littering, littering is less common and environmental morale is greater (Torgler et al. 2009). Roadways commonly attract a great deal of litter, as motorists and improperly secured truck loads create about seventy percent of all litter (KAB 2006). Litter is likewise concentrated in relatively developed areas (Keep Iowa Beautiful 2002), especially at "transition points," or places where goods must be discarded prior to entering (e.g., no food or drink is allowed in many offices and stores; KAB 2006).

Littering is least likely when individuals are prompted to avoid littering; when anti-littering campaigns focus on communities and norms instead of punishment; and when supportive infrastructure (e.g., waste receptacles) exists (Huffman et al. 1995). Communities that emphasize how littering violates shared values and norms will be most effective at curbing litter (Cialdini 2003), as individuals commonly litter in areas that they feel unconnected with (Florida Litter Information 2008). While the availability of trash receptacles deters would-be litterers, it is more effective to work cooperatively to prevent litter than simply purchase new trash cans (Roales-Nieto 1988). Incentives can likewise keep individuals from littering (Burgess et al. 1971), although not always practical to implement *en-masse*.

Although less than half of citizens report taking action to pick up litter (Keep Iowa Beautiful 2002), communities can reduce littering using social interventions and public awareness campaigns. In Australia, such campaigns are associated with improved knowledge about littering, changing attitudes



## **I. PROJECT BACKGROUND INFORMATION**

towards littering, and a decrease in self-reported littering behavior (although individuals tend to underreport their own littering behavior) (Department of Environmental Conservation 2005).

The following discussion summarizes several approaches to litter reduction that have been implemented in various settings. Findings are based on a comprehensive review of fifty-nine studies on the potential effectiveness of litter reduction strategies conducted by Huffman, Grossnickle, Cope, and Huffman (1995). The findings of Huffman's meta-analysis may have relevance for future litter campaigns in Wake County. Several methodologies discussed in the article are reviewed below.

### **C. ANTECEDENT STRATEGIES FOR LITTER REDUCTION**

Huffman and associates describe two broad approaches to litter reduction—antecedent strategies and consequence strategies. Antecedent strategies precede an action and are intended to increase a desired outcome or decrease an undesired outcome.

#### **1. Prompts**

Providing a written or verbal prompt or instruction has been found to be effective in encouraging litter disposal in certain situations. The prompt, for example, an instruction asking for disposal of litter in a specific location, should be polite and should be detailed or specific in identifying the desired response. The prompt should request a desired action that can occur close in time to the prompt. The effectiveness of prompts is increased when combined with modeling behavior by other individuals.

#### **2. Community Involvement**

Community involvement utilizes the combined efforts of citizens, neighbors, or others to implement litter reduction strategies. Community involvement moves beyond the level of prompts to create a potentially longer lasting intervention. An example of a community involvement strategy might include enlisting volunteer or neighborhood groups to develop and implement a litter reduction campaign. Such campaigns can appeal to community pride, conscience, or both.

#### **3. Modeling**

Modeling involves the use of role models who demonstrate desired behaviors such as picking up or disposing of litter in view of others. Although findings of modeling studies are mixed, a majority of thirteen studies reviewed by Huffman and associates demonstrated a reduction in littering among subjects who witness modeling behavior.

#### **4. Prompts Combined with Community Involvement and Modeling**

A key aspect of the effectiveness of the three previously discussed antecedent strategies seems to be the influence of the social involvement. The effectiveness of prompts is increased through the use of verbal, as opposed to written, messages, the former of which reflect a greater level of social involvement. Likewise, modeling effectiveness is increased as the amount of social involvement in the exercise increases.

## **I. PROJECT BACKGROUND INFORMATION**

### **5. Removal of Existing Litter**

As previously mentioned, a number of studies have found that littering is greater in areas that are heavily littered. The existence of litter represents a descriptive norm—an indication of an existing condition. Littering may also be seen as a breach of an injunctive norm—a standard that represents beliefs about, or law governing, what is acceptable. A number of studies reviewed by Huffman find that littering behavior is reduced when existing litter is removed, indicating that littering is less likely when descriptive and injunctive norms suggest that such behavior is neither practiced nor acceptable.

### **6. Environmental Design**

Several studies have examined the effect of location and design of trash receptacles in reducing litter. Standard trash receptacles have been compared with ‘designer’ receptacles that use special colors or shapes to attract attention. Such strategies tend to be low cost and require a minimum of time to implement. Of twelve studies reviewed by Huffman, the majority found that specially designed trash receptacles attract more use than standard receptacles.

## **D. CONSEQUENTIAL STRATEGIES FOR LITTER REDUCTION**

Consequences occur after an action has taken place and include rewards and incentives, aimed at increasing a desired behavior, or penalties, aimed at reducing unwanted behavior. Studies of consequential strategies have been conducted with both children and adults and have included incentives such as payment for litter or recyclable material collected, verbal rewards, food rewards for children, and redeemable food coupons for use of litterbags in cars. Reward and incentive based strategies were found to be effective in the thirteen studies reviewed by Huffman. The authors note that research on the effectiveness of penalties is limited due to ethical or legal considerations.

The strategies outlined by Huffman, et al., may have relevance for litter reduction efforts in Wake County. The study described in this report examines attitudes about littering, personal littering behaviors, and knowledge about litter reduction among two distinct sample groups. Recommendations are made for the possible implementation of the previously discussed litter reduction strategies and information is presented on survey respondents’ views on possible litter reduction strategies for Wake County.

## II. TELEPHONE SURVEY: BACKGROUND INFORMATION

The Center for Urban Affairs and Community Services conducted a telephone survey (see *Appendix A*) of Wake County residents during the summer of 2010. Participants included adult (aged eighteen or older) household members. The survey contained a series of questions pertaining to attitudes toward littering and littering behavior. Respondents were also asked to assess the effectiveness of commonly used litter prevention strategies and to provide information on their current level of awareness of litter reduction programs.

From a total population of 361,060 households in Wake County,<sup>1</sup> a sample pool of 1,411 households was randomly selected. From this pool, 477 interviews were attempted and 422 were completed (with fifty-four refusals), resulting in a final response rate of 88.5 percent. Table 1 presents information on the composition of the final sample of respondents.

**Table 1. Respondent Sociodemographic Characteristics.**

Characteristic	Percent	Row N
<b>Gender</b>		
‣ Male	49.3	208
‣ Female	50.7	214
<b>Age in Years</b>		
‣ 18 to 20	3.4	14
‣ 21 to 30	11.8	49
‣ 31 to 40	15.8	66
‣ 41 to 50	23.0	96
‣ 51 to 60	19.4	81
‣ 61 to 70	14.6	61
‣ 71 to 80	9.1	38
‣ 81 and above	2.9	12
<b>Average Age (in years)</b>	<b>49.4</b>	<b>417</b>
<b>Educational Attainment</b>		
‣ Grade school or less	3.4	14
‣ Some high school	11.8	49
‣ High school graduate/GED	15.8	66
‣ Some college	23.0	96
‣ College graduate	19.4	81
‣ Graduate school or higher	14.6	61
<b>Years Residing in Wake County</b>		
‣ Less than two years	5.2	22
‣ 2-4 years	14.7	62
‣ 5-10 years	16.4	69
‣ More than 10 years	63.7	269

<sup>1</sup> The population of households in Wake County is based on the United States Census Bureau's annual estimates for housing units in counties in North Carolina as of July, 1 2009. For more information, please see <http://www.census.gov/popest/housing/HU-EST2009-4.html>.

## II. TELEPHONE SURVEY: BACKGROUND INFORMATION

The sample consisted of comparable percentages of males and females (Table 1). The average age was 49.4 years, with a median of forty-nine years, a minimum of eighteen years, and a maximum of ninety-one years. Over one-third of respondents had completed an undergraduate or higher degree. Slightly under two-thirds had resided in Wake County more than ten years.

Over forty percent of respondents resided in Raleigh at the time of the survey (Table 2). Of 401 respondents who responded to the work location question, 163 (40.6 percent) are either unemployed or work at home and thus, do not commute to work. Of the 238 (59.3 percent) remaining respondents who do commute to work, about forty-five percent work in Raleigh and fifteen percent in Cary. Others work in various locations in Wake County and the Triangle area or Eastern North Carolina and several work out of state.

**Table 2. Respondent Residence and Work Location.**

Location	Percent of Respondents	
	Residence	Employment*
Apex, NC	7.4	5.0
Cary, NC	14.4	15.1
Chapel Hill, NC		0.8
Durham, NC		9.7
Franklinton, NC		0.4
Fuquay Varina, NC	5.0	1.7
Garner, NC	3.8	3.8
Goldsboro, NC		0.4
Henderson, NC		0.4
Holly Springs, NC	3.8	1.7
Huntington, WV		0.4
Knightdale, NC	3.8	1.7
Laurinburg, NC		0.4
Liberty, NC		0.4
Lillington, NC		0.4
Morrisville, NC	2.2	4.2
New Hill, NC	0.5	
Raleigh, NC	43.4	44.5
Rolesville, NC	0.7	0.8
Salisbury, MD		0.4
Smithfield, NC		0.4
Wake Forest, NC	7.7	2.9
Wendell, NC	2.4	1.3
Willow Spring, NC	1.7	0.4
Youngsville, NC		0.4
Zebulon, NC	3.1	1.7
<b>TOTAL N</b>	<b>417</b>	<b>238</b>

*\*Analysis based on respondents who commute to work (n=238). Another 163 are either unemployed or work at home.*

## II. TELEPHONE SURVEY: BACKGROUND INFORMATION

About forty-five percent of respondents reside in places with populations between 400,000 and 499,999 (Table 3). Similar patterns are apparent for respondents' work locations. Of the respondents who commute to work, about forty-five percent are employed in places with populations between 400,000 and 499,999. Respondents are more likely to reside than work in places with populations less than 50,000.

**Table 3. Population Characteristics of Respondent's Residence and Work Location.**

Location	Home	Work
<b>Population Size</b>		
➤ Less than 5,000	3.9	3.0
➤ 5,000 to 14,999	8.6	8.6
➤ 15,000 to 24,999	9.1	3.4
➤ 25,000 to 49,999	19.4	12.9
➤ 50,000 to 74,999		0.9
➤ 100,000 to 199,999	14.7	15.5
➤ 200,000 to 299,999		9.9
➤ 400,000 to 499,999	44.4	45.9
<b>TOTAL N</b>	<b>408</b>	<b>233</b>

## II. TELEPHONE SURVEY: BACKGROUND INFORMATION

The vast majority of respondents live in owner occupied residences as opposed to rentals (Table 4). Over half of the respondents had no children living in the household at the time of the survey. Around a fifth of respondents have combined annual household incomes of \$35,000 or below and another third of incomes range from \$36,000 to \$75,000. Household income fell at \$76,000 or above for around forty-six percent of respondents.

**Table 4. Household Characteristics.**

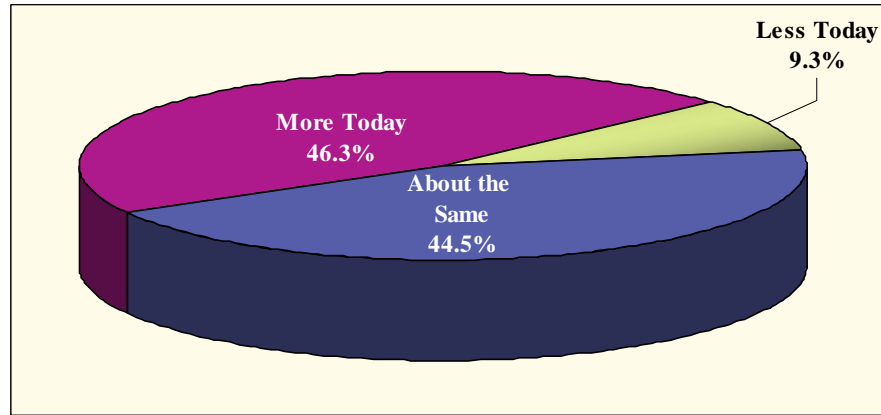
Characteristic	Percent of Respondents	Row N
<b>Type Household</b>		
‣ Owner Occupied	81.7	344
‣ Rental	18.3	77
<b>Children under 18 in Household</b>		
‣ None	57.6	243
‣ One	22.3	94
‣ Two to Three	18.3	77
‣ Four or More	1.9	8
<b>Household Income</b>		
‣ Under \$20,000	7.0	24
‣ \$21,000 to \$35,000	13.2	45
‣ \$36,000 to \$45,000	9.7	33
‣ \$46,000 to \$60,000	13.2	45
‣ \$61,000 to \$75,000	10.9	37
‣ \$76,000 to \$90,000	11.7	40
‣ \$91,000 to \$105,000	15.3	52
‣ \$106,000 and greater	19.1	65

*Number of Respondents: Household Type= 420; Children under 18 in Household= 422; Household Income=341*

### III. TELEPHONE SURVEY: PERCEPTION OF AND REASONS FOR LITTERING

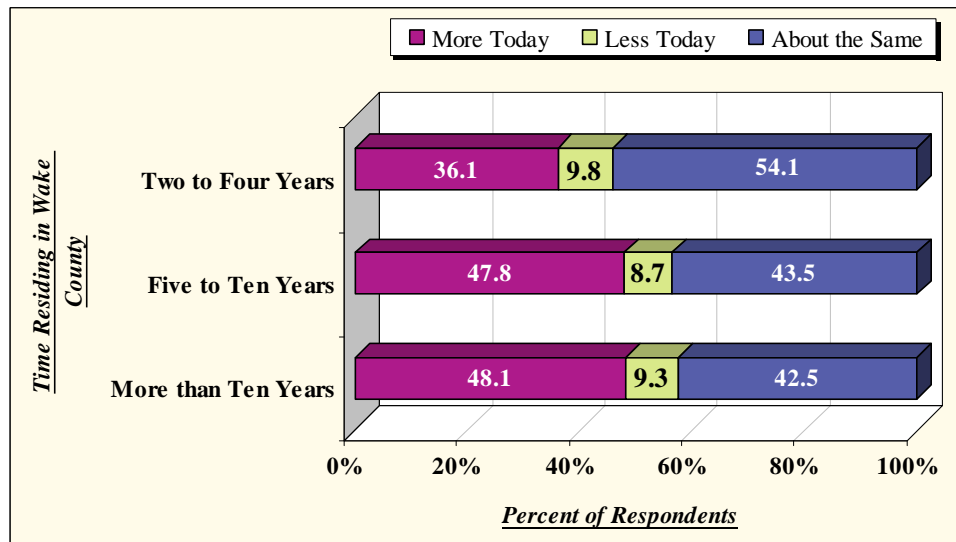
Respondents believe that the amount of litter in Wake County has increased or stayed about the same in the past two years (Figure 1). Only about nine percent perceive a decline in the amount of litter. Respondents who have lived in Wake County longer than five years are more likely to perceive an increase in the amount of litter than respondents who have lived in the County from two to four years (Figure 2).

**Figure 1. Perception of Change in Amount of Litter in Wake County in Last Two Years (Q3).**



N= 400

**Figure 2. Perception of Change in Amount of Litter in Wake County over Last Two Years (Q3) by Time Residing in Wake County (Q2).**



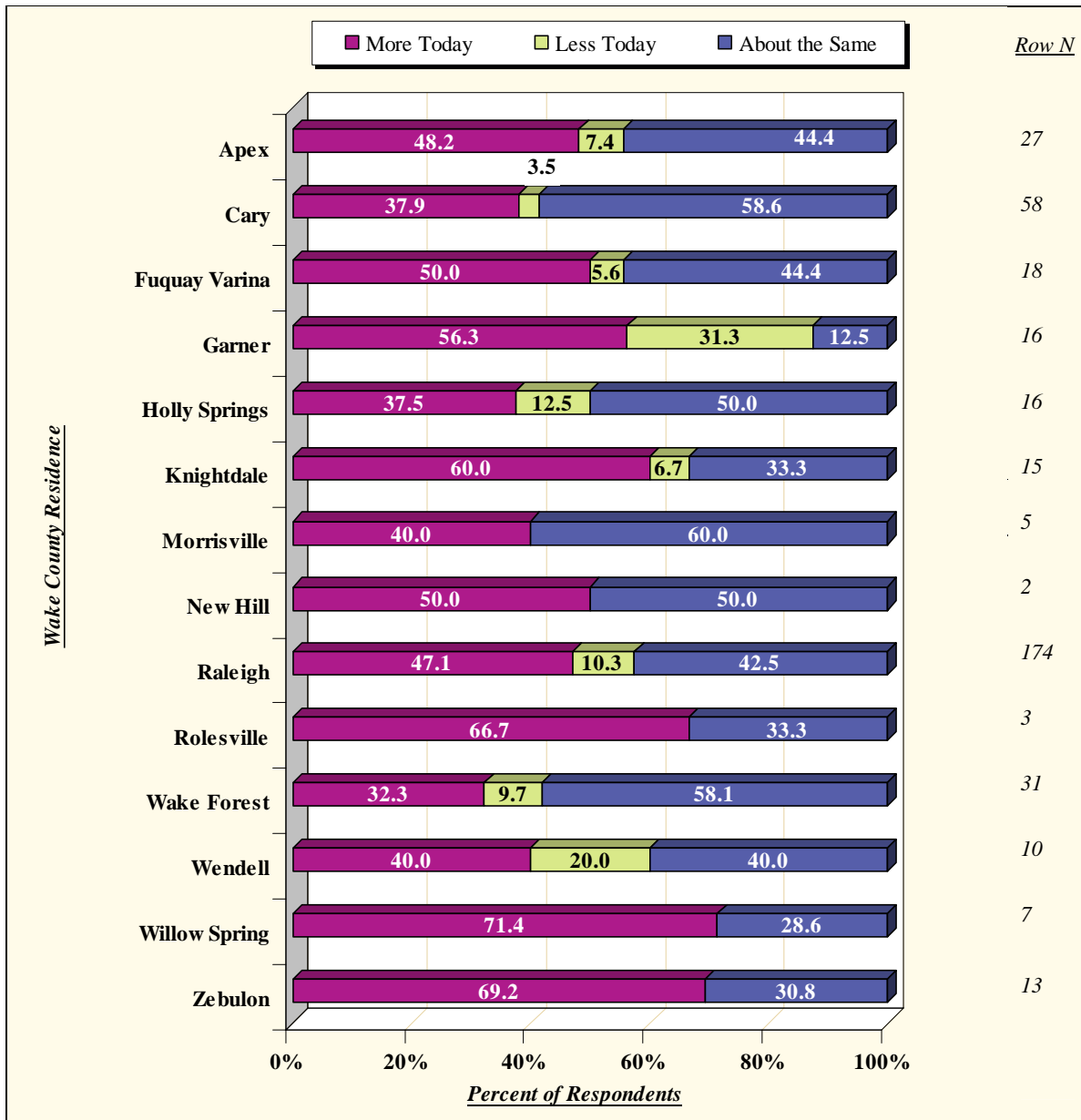
N=398

In most Wake County towns and cities, about half of respondents report that the amount of litter has remained the same, whereas a little over half report an increase during the past two years.

### III. TELEPHONE SURVEY: PERCEPTION OF AND REASONS FOR LITTERING

Among locales with five or more respondents, Willow Spring and Zebulon residents are most likely to view the amount of litter as increasing in the past two years. Knightdale, a town hosting relatively dramatic population growth over the past ten years—especially during the most recent two years—likewise, is home to the third greatest number of residents reporting increasing amounts of litter. Similar patterns are evident in Rolesville but the low number of respondents (n=3) prevents generalizations. Residents of Garner and Wendell are most likely to report a decrease in litter, although population size has remained relatively stable in these locales.

**Figure 3. Perception of Change in Amount of Litter in Wake County over Last Two Years (Q3) by Wake County Residence (Q12a).**



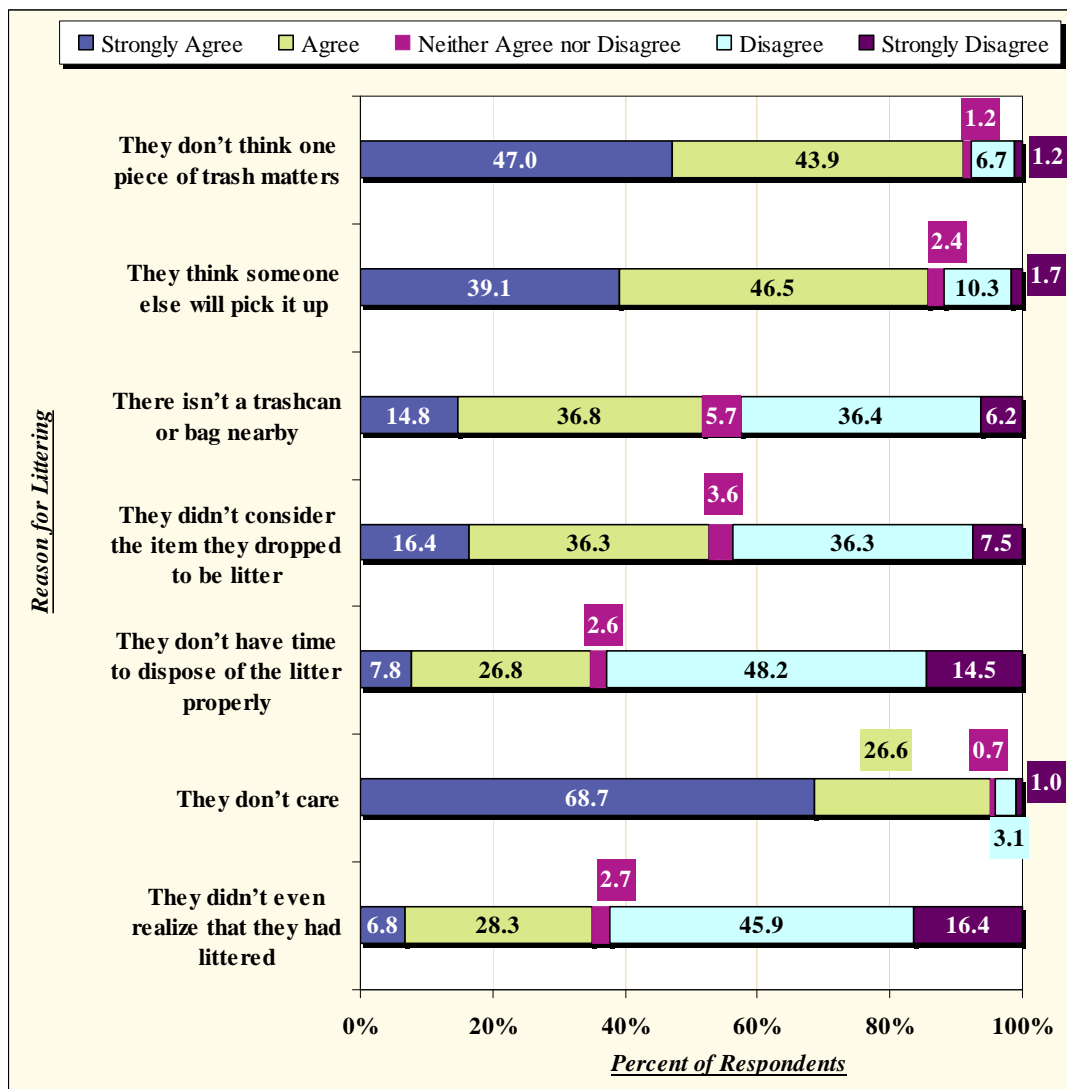
N=395



### III. TELEPHONE SURVEY: PERCEPTION OF AND REASONS FOR LITTERING

Respondents were asked to rate their agreement with a series of statements concerning why people litter. Over three-quarters agree or strongly agree that litterers think one piece of trash doesn't matter or that someone else will pick up the litter (Figure 4). Fewer respondents believe that litterers don't have time to properly dispose of litter, don't have access to a trash can, or don't consider items to be litter. Over a third believe that people don't even realize that they have littered. Conversely, over two-thirds strongly agree that litterers engage in such behavior because they don't care. Taken together, these findings suggest that respondents believe personal responsibility is important in litter reduction and that education about the consequences of littering may be useful.

**Figure 4. Agreement with Statements Concerning Reasons that People Litter (Q4).**

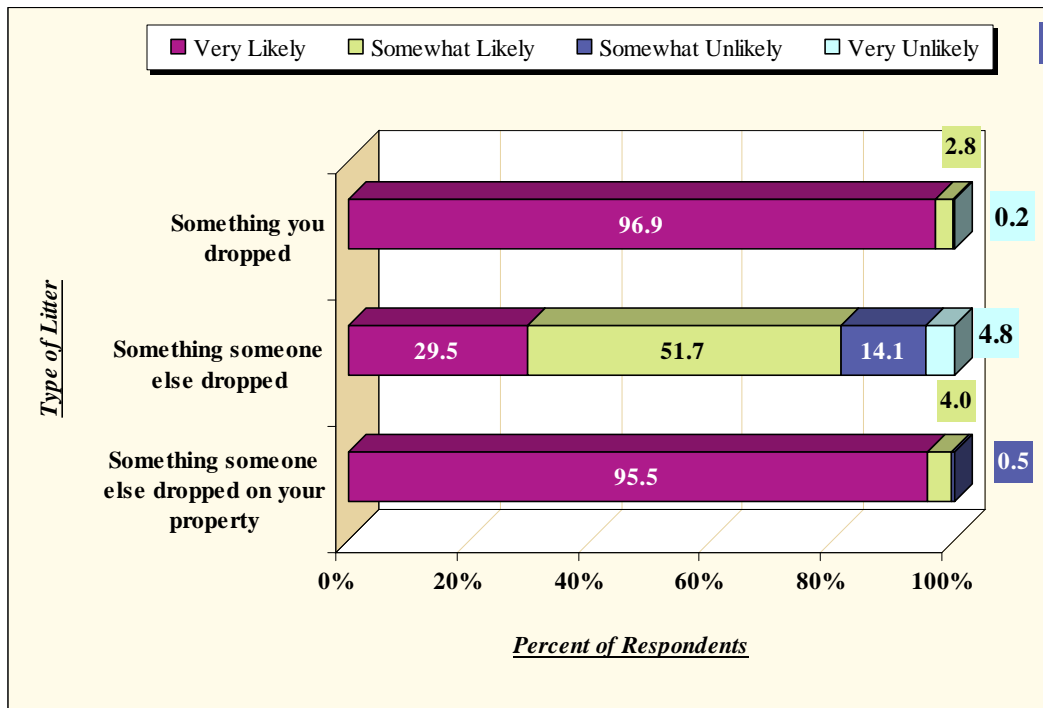


*N ranges from 414 to 421*

### III. TELEPHONE SURVEY: PERCEPTION OF AND REASONS FOR LITTERING

Respondents were asked to indicate their willingness to pick up three separate types of litter: *something you dropped*, *something someone else dropped*, and *something someone else dropped on your property*. Almost all respondents indicated that they are very likely to pick up something they, themselves, dropped or something someone else dropped on their property (Figure 5). Only slightly over half describe themselves as somewhat likely, and about thirty percent, very likely, to pick up something someone else had dropped in an unspecified location.

**Figure 5. Likelihood of Picking up Litter in Specific Situations (Q5).**



*N* ranges from 420 to 422

### III. TELEPHONE SURVEY: PERCEPTION OF AND REASONS FOR LITTERING

Table 5 shows the likelihood of picking up litter in the previously discussed situations for a variety of respondent groups. On average, respondents in all categories view themselves as likely to pick up litter in each situation, with mean responses at the 3.0 level or above for most groups for each of the three situations in question. Across all groups, respondents are noticeably more likely to state that they would pick up something they, themselves, dropped or something someone dropped on their property than they are to pick up something someone else dropped in an unspecified location (see *Column Average*).

A noticeable trend can be seen across several respondent groups. For likelihood of picking up something you dropped, responses tend to vary similarly by education and income. Mean likelihood tends to increase from the lower to the mid-range education and income categories but declines again in the upper categories.

Similar concomitant relationships are noticeable with respect to likelihood of picking up something someone dropped on your property. Likelihood is high in the lower ranges of education and income, dropping in the lower mid-range, and increasing again in the upper ranges. Patterns are less discernable with respect to likelihood of picking up something someone else dropped, with no location specified.

Significance tests were conducted to determine if one group is significantly more likely than another to pick up litter in the situations of interest. Differences in gender, education, and income were not statistically significant for this sample. Yet statistical significance in the number of children is noted: respondents living in households with four or more children are significantly less likely to affirm that they would pick up something they dropped than those with no children, one child, or two to three children. Those with four or more children do not differ from others in their willingness to pick up items others dropped or items on their property.

Four other relationships are also statistically significant: individuals between twenty-one and thirty-nine years are less likely to pick up something someone else dropped on their property than those forty years and older; renters are less likely to pick up something someone else dropped on their property than those living in owner occupied homes; individuals in their twenties are less likely to pick up litter across all three scenarios than those between fifty-one and seventy years; and renters are less likely to pick up litter across all three situations than those living in owner occupied homes.

### III. TELEPHONE SURVEY: PERCEPTION OF AND REASONS FOR LITTERING

**Table 5. Mean Likelihood of Picking up Litter (Q5a-c) by Selected Respondent Characteristics.**

Characteristic	Mean Likelihood of Picking Up:			Row N
	Something You Dropped	Something Someone Else Dropped	Something Someone Dropped on your Property	
<b>Gender</b>				
‣ Male	4.0	3.1	3.9	207-208
‣ Female	4.0	3.0	4.0	214-215
<b>Mean Age in Years</b>				
‣ 18 to 20	3.9	3.1	3.9	14
‣ 21 to 39	3.9	3.0	3.9†	108-109
‣ 40 to 59	4.0	3.1	4.0†	178-179
‣ 60 and Older	4.0	3.1	4.0†	116
<b>Educational Attainment</b>				
‣ Some High School or Less	3.9	2.9	4.0	16
‣ High School Graduate/GED	3.9	3.1	3.9	54
‣ Some College	4.0	3.0	3.9	102
‣ College Graduate	4.0	3.1	4.0	135
‣ Graduate Degree	4.0	3.0	4.0	113-115
<b>Household Income</b>				
‣ Under \$20,000	3.9	3.0	4.0	24
‣ \$21,000 to \$35,000	3.9	2.9	3.9	45
‣ \$36,000 to \$45,000	3.9	3.0	3.8	33
‣ \$46,000 to \$60,000	4.0	3.3	3.9	45
‣ \$61,000 to \$75,000	4.0	3.3	4.0	37
‣ \$76,000 to \$90,000	4.0	2.9	4.0	41
‣ \$91,000 to \$105,000	4.0	3.1	4.0	51-52
‣ \$106,000 and greater	3.9	3.2	4.0	64-65
<b>Children in Household</b>				
‣ None	4.0**	3.0	4.0	242-244
‣ One	4.0**	3.1	3.9	94
‣ Two to Three	4.0**	3.1	4.0	77
‣ Four or More	3.5**	2.9	4.0	8
<b>Residence</b>				
‣ Owner Occupied	4.0	3.1	4.0‡	341-343
‣ Rental	3.9	3.0	3.8‡	77
<b>COLUMN AVERAGE</b>	<b>3.929</b>	<b>3.064</b>	<b>3.950</b>	

\*Based on a 4-point scale as follows: Very Likely=4; Somewhat Likely=3; Somewhat Unlikely=2; Very Unlikely=1

\*\*Four or More Children is significantly different from None, One, and Two to Three (Scheffé Multiple Comparison Test, 0.05 level)

†21 to 39 years is significantly different from 40 to 59 years and 60 Years and Older (Scheffé Multiple Comparison Test, 0.05 level)

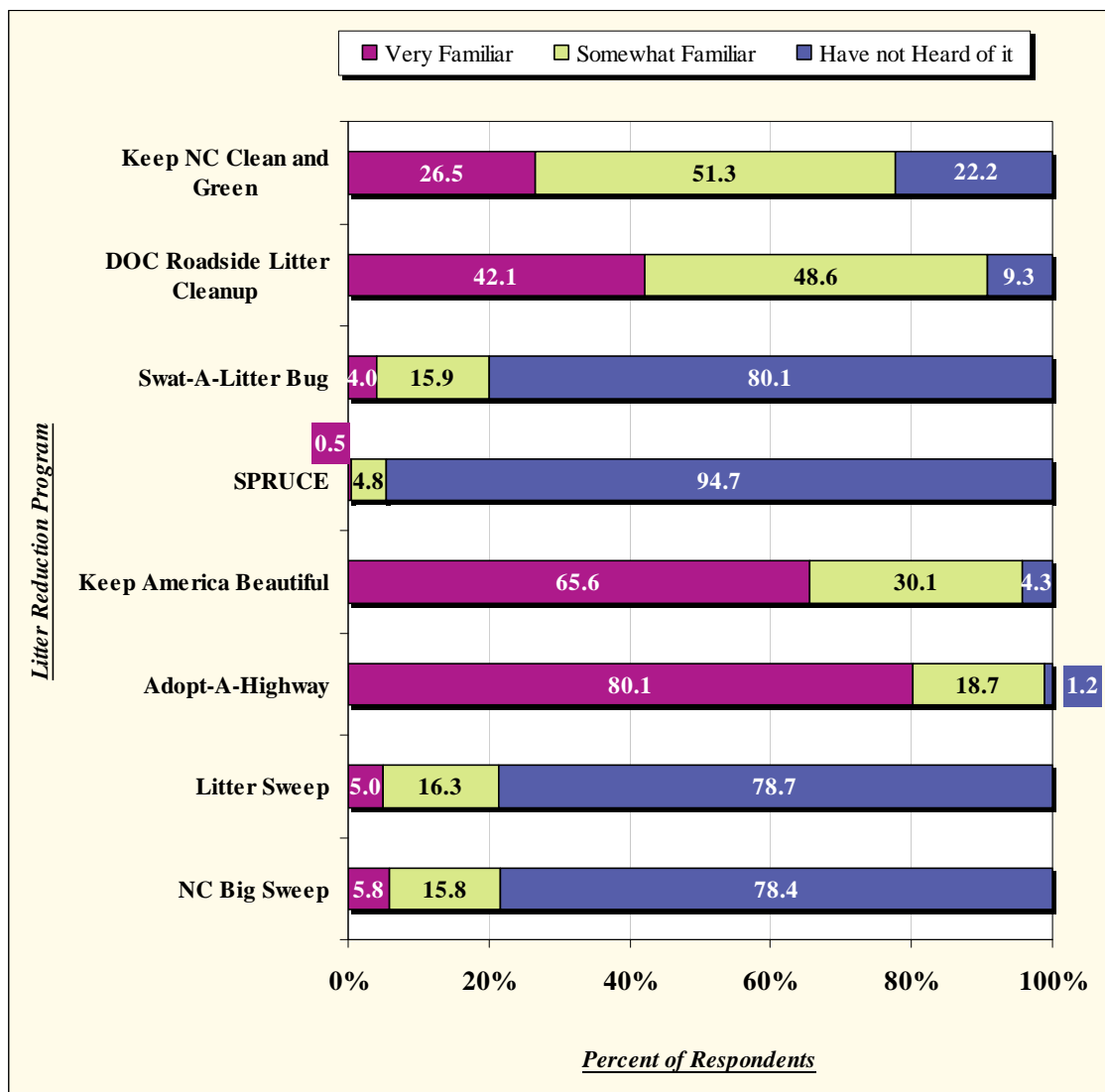
‡Owner occupied is significantly different from rental (Row Means Score Test, <0.0001 level)

#### IV. TELEPHONE SURVEY: PROGRAMS AND STRATEGIES FOR REDUCING LITTER

##### A. RESPONDENT FAMILIARITY WITH LITTER REDUCTION STRATEGIES

Respondents were asked to indicate their level of familiarity with a number of litter reduction programs that have been implemented in North Carolina in recent years. The Adopt-A-Highway Program was recognized by the largest number of respondents with over eighty percent stating that they are very familiar, and about eighteen percent, somewhat familiar, with the program (Figure 6). The vast majority were somewhat familiar or very familiar with Keep America Beautiful and the DOC Roadside Litter Cleanup Program. The majority of respondents had not heard of Litter Sweep, Big Sweep, Swat-a-Litter-Bug, or SPRUCE.

**Figure 6. Familiarity with Litter Reduction Programs (Q6).**



*Others include: Give a Hoot, Don't Pollute (n=2 Somewhat Familiar);*

*Neuse River Clean Up Program (n=2 Somewhat Familiar, n=3 Very Familiar);*

*Various Other programs (n=6 Somewhat Familiar, n=1 Very Familiar)*

#### IV. TELEPHONE SURVEY: PROGRAMS AND STRATEGIES FOR REDUCING LITTER

On average, respondents are familiar with about half of the eight programs listed in the survey. The mean number of programs with which respondents indicated that they are somewhat familiar or very familiar ranges from 3.9 to 4.5. No difference in number exists based on gender. Familiarity with programs tends to follow a slightly irregular curvilinear pattern by age with those in the upper and lower age ranges familiar with fewer programs. Familiarity increases with education, with mean numbers ranging from 4.2 among respondents with less than a high school education to 4.3 among those holding graduate degrees. Likewise, respondents living in owner occupied homes are familiar with a greater number of programs than renters.

**Table 6. Mean Number of Programs with which Respondent is Familiar (Q6a-h): by Selected Respondent Characteristics.**

Characteristic	Mean Number
<b>Gender</b>	
‣ Female	4.3
‣ Male	4.3
<b>Mean Age in Years</b>	
‣ 18 to 20	3.4
‣ 21 to 30	4.4
‣ 31 to 40	4.2
‣ 41 to 50	4.1
‣ 51 to 60	4.5
‣ 61 to 70	4.4
‣ 71 to 80	4.3
‣ 81 and Older	3.9
<b>Educational Attainment</b>	
‣ Some High School or Less	4.2
‣ High School/GED	4.2
‣ Some College	4.2
‣ College Graduate	4.3
‣ Graduate Degree	4.3
<b>Type Residence</b>	
‣ Owner Occupied	4.3
‣ Rental	4.1
<b>Perceived Change in Litter</b>	
‣ More than Two Years Ago	4.3
‣ Less than Two Years Ago	4.1
‣ About the Same	4.3

‡“Familiar” includes respondents who stated that they are “Very Familiar” or “Somewhat Familiar” with a specific slogan

Based on a 3-point scale as follows: Very Familiar=3; Somewhat Familiar=2; Haven’t Heard of It=1

#### IV. TELEPHONE SURVEY: PROGRAMS AND STRATEGIES FOR REDUCING LITTER

Table 7 presents information on mean number of programs with which respondents are familiar compared with mean likelihood of picking up litter, by selected respondent characteristics. Graphic depictions of the relationships are shown in Figures 7 through 10. Two analytic techniques were used. Mean scores on each scale were calculated for familiarity with number of programs (as in Table 6) and willingness to pick up litter under differing circumstances (based on a scale incorporating responses to survey Questions 5a-5c). Significance tests were conducted to determine statistically significant differences among respondent groups.

Although male and female respondents are, on average, familiar with the same number of programs, males are just slightly more likely to state that they would pick up litter in the three situations of interest (see Figure 7). The difference in likelihood is minimal, however: the average male likelihood of picking up litter is 11.0, whereas the comparable female average is 10.9. This difference in willingness to pick up litter is not statistically significant.

Age is related to both familiarity with the number of anti-litter programs and likelihood of picking up litter (Figure 8). Respondents scoring highest on each scale were those ranging in age from fifty-one to seventy years. The youngest and oldest age groups scored lowest for familiarity and likelihood of picking up. Individuals twenty-one to thirty years are significantly different from those fifty-one to seventy years, with older respondents significantly more likely to agree that they would pick up litter than their younger counterpart.

Respondents with less than a high school education are the least likely to agree that they would pick up litter in the situations of interest (Figure 9). These respondents show the same mean scores for familiarity with programs as high school graduates and those who have graduated from college. However, the latter two groups are more likely to be willing to pick up litter than the former. College graduates and post-graduates are familiar with the greatest number of programs. College graduates are the most likely to pick up litter, but those with graduate degrees are no more likely than others to do so. Differences among the levels of education for number of programs and willingness to pick up litter are not statistically significant. The relationship between the two variables remains constant when controlling for education.

Those who perceive less litter in their communities than two years ago are familiar with slightly fewer anti-litter programs than those who perceive similar or more litter (Figure 10). Respondents perceiving less litter are likewise least likely to pick up litter than those who regard litter as remaining the same or increasing. Individuals who believe litter has increased over the last two years are most likely to pick up trash. These findings suggest that when respondents sense that littering is an increasing threat within their communities, they will take action to remedy the problem. Alternatively, those persons already involved in clean-up efforts might be more sensitive to changes in litter quantity over time.

#### IV. TELEPHONE SURVEY: PROGRAMS AND STRATEGIES FOR REDUCING LITTER

**Table 7. Mean Number of Programs with which Respondent is Familiar (Q6a-h) Compared with Mean Likelihood of Picking up Litter (Q5a-c): All Respondents and by Selected Respondent Characteristics.**

Characteristic	Mean Number with which Respondent is Familiar*	Mean Likelihood of Picking up Litter**
<b>All Respondents</b>	<b>4.3</b>	<b>11.0</b>
<b>Gender</b>		
> Female	4.3	10.9
> Male	4.3	11.0
<b>Mean Age in Years</b>		
> 18 to 20	3.4	10.9
> 21 to 30	4.4	10.5†
> 31 to 40	4.2	11.0
> 41 to 50	4.1	11.0
> 51 to 60	4.5	11.1†
> 61 to 70	4.4	11.2†
> 71 to 80	4.3	10.9
> 81 and Older	3.9	10.8
<b>Educational Attainment</b>		
> Some High School or Less	4.2	10.8
> High School/GED	4.2	11.0
> Some College	4.2	10.9
> College Graduate	4.4	11.1
> Graduate Degree	4.3	10.9
<b>Perceived Change in Litter</b>		
> More than Two Years Ago	4.3	11.2
> Less than Two Years Ago	4.1	10.4
> About the Same	4.3	10.9

\*"Familiar" includes respondents who stated that they are "Very Familiar" or "Somewhat Familiar" with a specific program. Includes programs listed on the survey (Q6a-h). Excludes programs volunteered by respondent.

\*\* "Likelihood of Picking up Litter" is defined as sum of scores for questions 5a, 5b, and 5c:

- "Something You Dropped,"
- "Something Someone Else Dropped," and
- "Something Someone Else Dropped on Your Property."

Likelihood scale is based on a possible 12 point maximum score, as follows:

10-12= Very Likely; 7-9=Somewhat Likely; 4-6=Somewhat Unlikely; 1-3=Very Unlikely

†21 to 30 years is significantly different from 51 to 60 years and 61 to 70 years (Scheffé Multiple Comparison Test, <0.05 level)



#### IV. TELEPHONE SURVEY: PROGRAMS AND STRATEGIES FOR REDUCING LITTER

Figure 7. Mean Number of Programs with which Respondent is Familiar (Q6a-h) and Mean Likelihood of Picking up Litter (Q5a-c): by Gender (Q13).

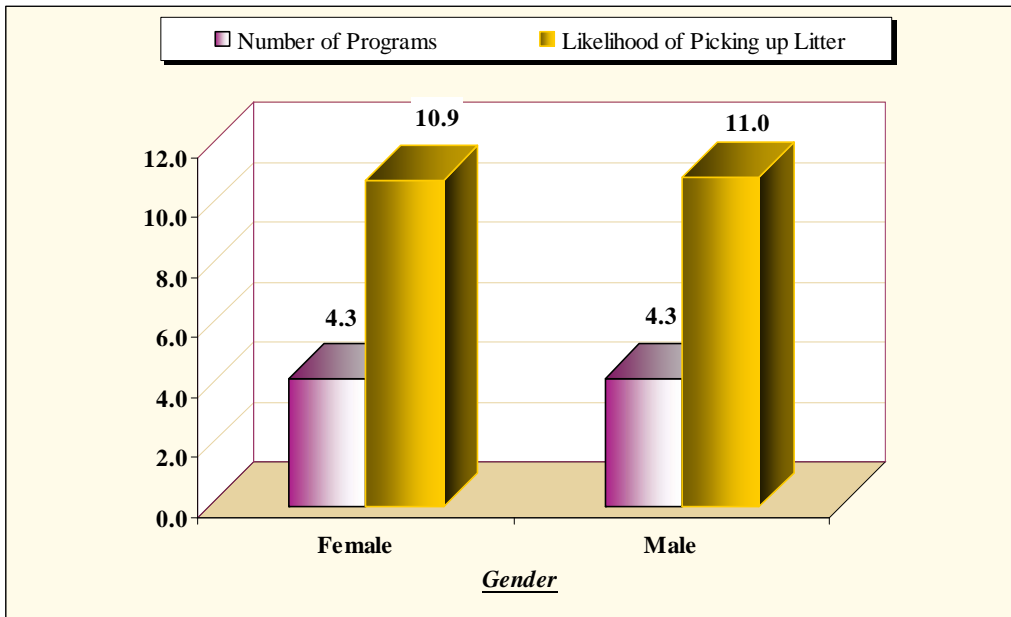
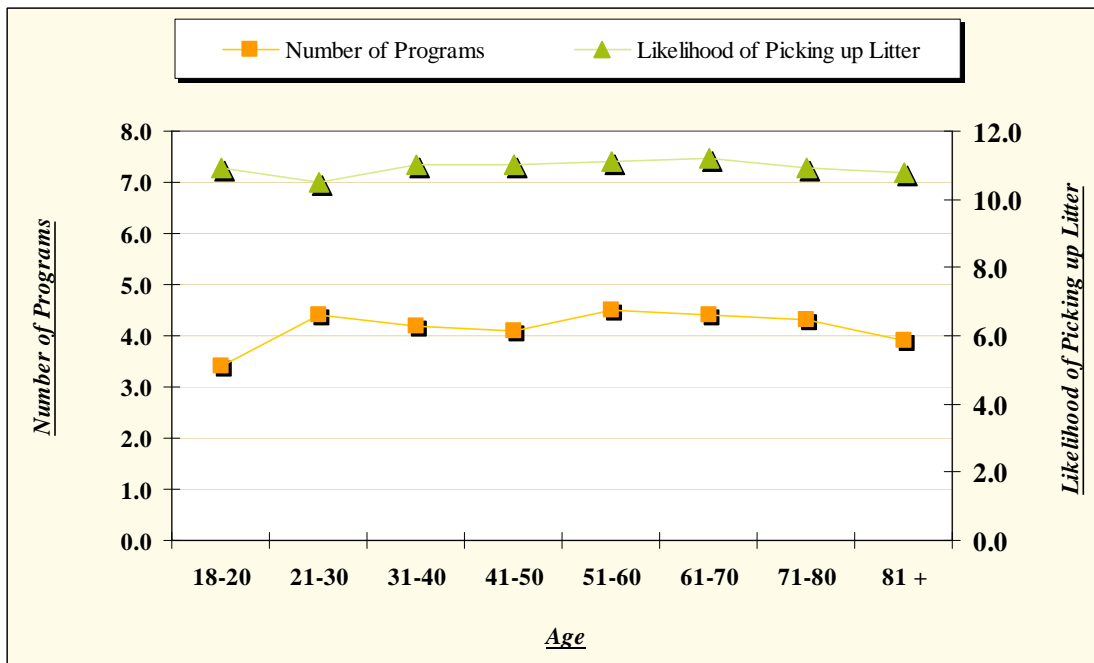


Figure 8. Mean Number of Programs with which Respondent is Familiar (Q6a-h) and Mean Likelihood of Picking up Litter (Q5a-c): by Age (Q14).



21 to 30 years is significantly different from 51 to 60 years and 61 to 70 years (Scheffé Multiple Comparison Test,  $<0.05$  level)

#### IV. TELEPHONE SURVEY: PROGRAMS AND STRATEGIES FOR REDUCING LITTER

Figure 9. Mean Number of Programs with which Respondent is Familiar (Q6a-h) and Mean Likelihood of Picking up Litter (Q5a-c): by Educational Attainment (Q11).

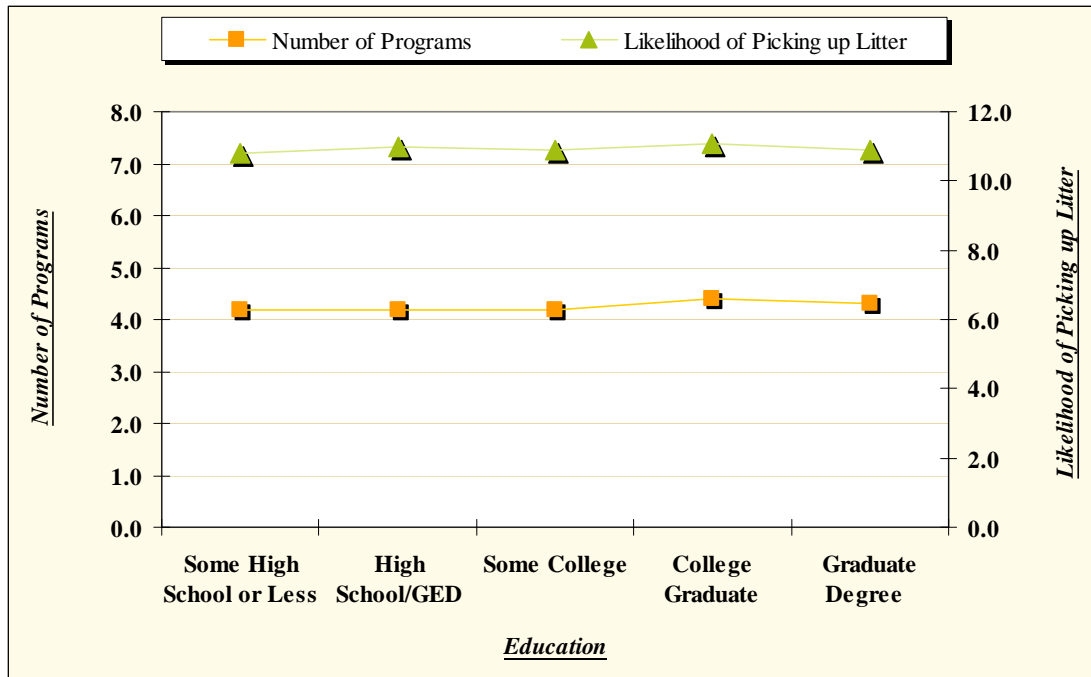
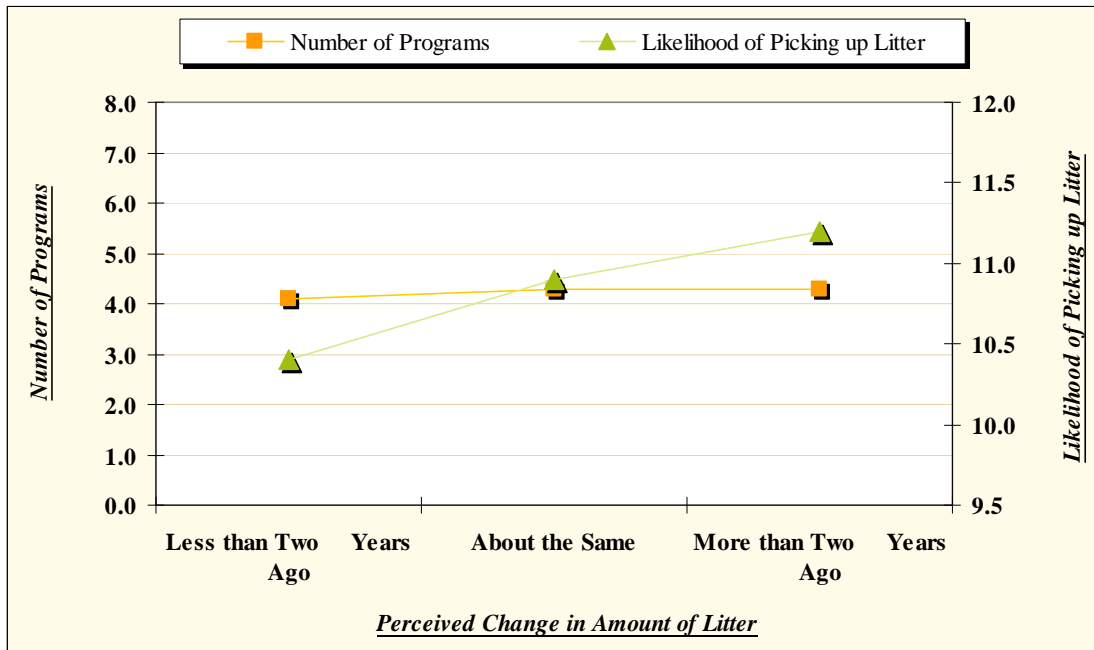


Figure 10. Mean Number of Programs with which Respondent is Familiar (Q6a-h) and Mean Likelihood of Picking up Litter (Q5a-c): by Perceived Change in Litter in Wake County in Last Two Years.



#### IV. TELEPHONE SURVEY: PROGRAMS AND STRATEGIES FOR REDUCING LITTER

Table 8 shows the relationships between individual characteristics, familiarity with anti-litter programs, and the likelihood of picking up litter. Responses are similar for respondents living in households with varying characteristics. Mean scores for familiarity with programs are above 4.0 regardless of household income, number of children in household, or type household. Scores for likelihood of picking up litter range from 10.4 to 11.2 out of a possible range of three to twelve.

**Table 8. Mean Number of Programs with which Respondent is Familiar (Q6a-h) Compared Mean Likelihood of Picking up Litter (Q5a-c): by Selected Household Characteristics.**

Characteristic	Mean Number of Programs*	Mean Likelihood of Picking up Litter**
<b>Type Household</b>		
‣ Owner Occupied	4.3	11.0‡
‣ Rental	4.1	10.7‡
<b>Number of Children in Household</b>		
‣ None	4.3	10.9
‣ One	4.2	11.0
‣ Two or Three	4.2	11.0
‣ Four or More	4.3	10.4
<b>Household Income</b>		
‣ Under \$20,000	4.2	10.9
‣ \$21,000 to \$35,000	4.1	10.8
‣ \$36,000 to \$45,000	4.4	10.7
‣ \$46,000 to \$60,000	4.3	11.2
‣ \$61,000 to \$75,000	4.4	11.2
‣ \$76,000 to \$90,000	4.1	10.9
‣ \$91,000 to \$105,000	4.7	11.0
‣ \$106,000 and greater	4.0	11.1
<b>Residence Population Size</b>		
‣ Less than 5,000	4.9	11.3
‣ 5,000 to 14,999	4.6	11.1
‣ 15,000 to 24,999	4.2	11.0
‣ 25,000 to 49,999	4.3	10.9
‣ 100,000 to 199,999	3.8	11.0
‣ 400,000 to 499,999	4.3	10.9

\*Includes respondents who stated that they are “Somewhat Familiar” or “Somewhat Familiar” with a specific slogan

\*\*“Litter” is defined as sum of scores for questions 5a, 5b, and 5c: “Something You Dropped,” “Something Someone Else Dropped,” and “Something Someone Else Dropped on Your Property.”

Based on a 4-point scale as follows: Very Likely=4; Somewhat Likely=3; Somewhat Unlikely=2; Very Unlikely=1

‡Owner occupied is significantly different from rental (Row Means Score Test, <0.05 level)

#### **IV. TELEPHONE SURVEY: PROGRAMS AND STRATEGIES FOR REDUCING LITTER**

Respondents who own their home are slightly more familiar with anti-litter programs than those who rent. Owners are likewise more likely to pick up litter than renters, and this difference is statistically significant (Table 8 reports averages; see Figure 11 for a graphic representation of relationships). Property owners may be more invested in their communities than renters, whose residence is likely less permanent. Owners might also care more about litter on their land than renters. Renters may view property and community maintenance as the responsibility of their landlords rather than their own.

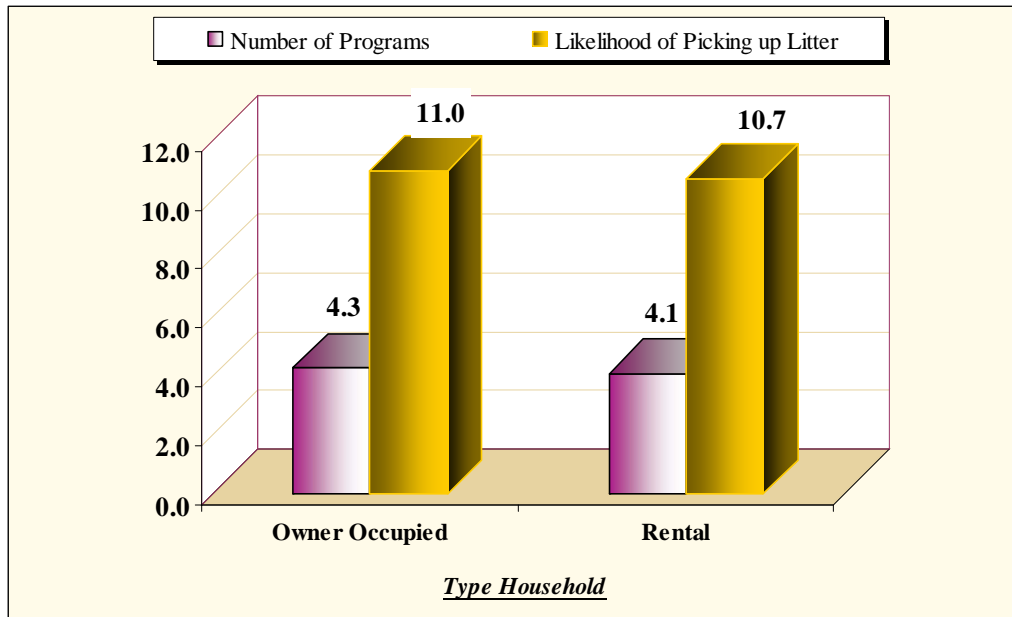
The number of children residing in a household has little impact on knowledge of anti-litter programs or the likelihood of picking up litter (Figure 12). Respondents who have four or more children are least likely to report that they would pick up litter, although this difference is not statistically significant.

Income is not related to familiarity with anti-litter campaigns. Willingness to pick up litter likewise varies little across income groups (Figure 13). Respondents who earn between \$46,000 and \$75,000 are most likely to report that they would pick up litter, but this difference is not statistically significant. Respondents further down the income hierarchy are least likely to pick up litter, although differences again fail to reach statistical significance.

Respondents who live in the smallest communities examined—those with fewer than 5,000 residents—are most likely to be familiar with anti-litter campaigns and to state that they would pick up litter (Figure 14). Those who live in the largest communities—housing 400,000 to 499,999 residents—are among the least likely to pick up litter. However, the relationships between population size, campaign familiarity, and willingness to pick up litter are not statistically significant.

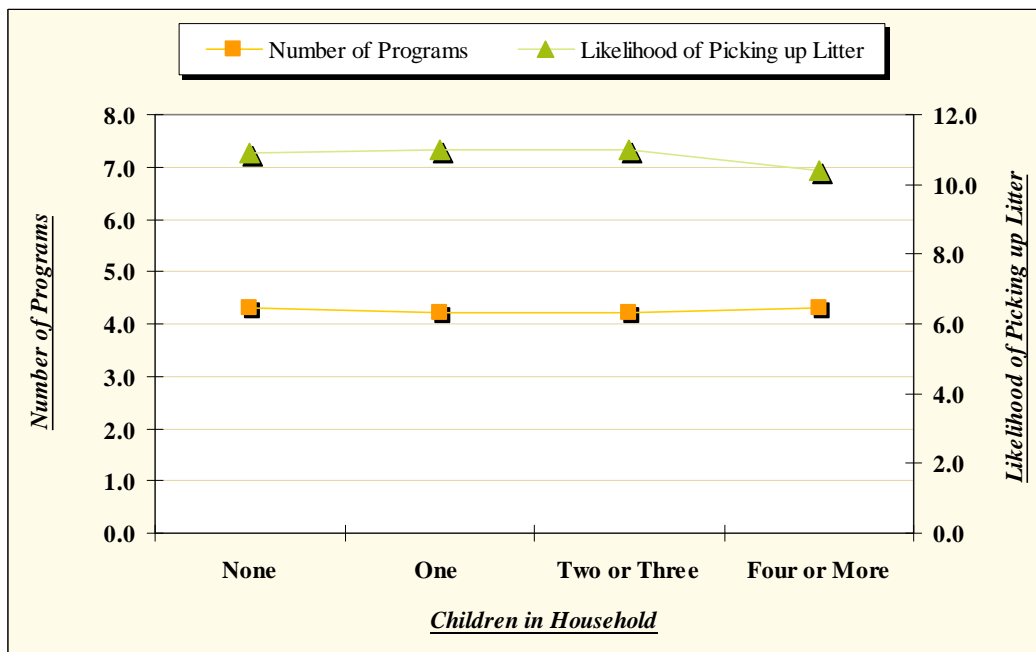
#### IV. TELEPHONE SURVEY: PROGRAMS AND STRATEGIES FOR REDUCING LITTER

Figure 11. Mean Number of Programs with which Respondent is Familiar (Q6a-h) and Mean Likelihood of Picking up Litter\* (Q5a-c): by Type Household.



\*Owner occupied is significantly different from rental (Row Means Score Test,  $<0.05$  level)

Figure 12. Mean Number of Programs with which Respondent is Familiar (Q6a-h) and Mean Likelihood of Picking up Litter (Q5a-c): by Number of Children in Household.



#### IV. TELEPHONE SURVEY: PROGRAMS AND STRATEGIES FOR REDUCING LITTER

Figure 13. Mean Number of Programs with which Respondent is Familiar (Q6a-h) and Mean Likelihood of Picking up Litter (Q5a-c): by Household Income.

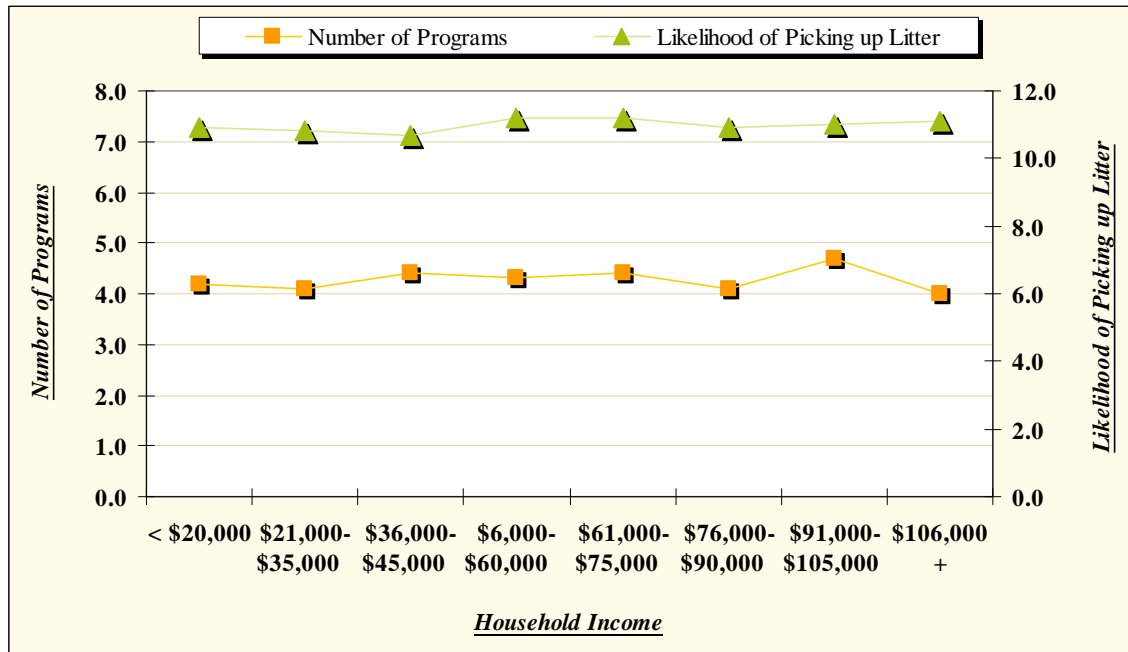
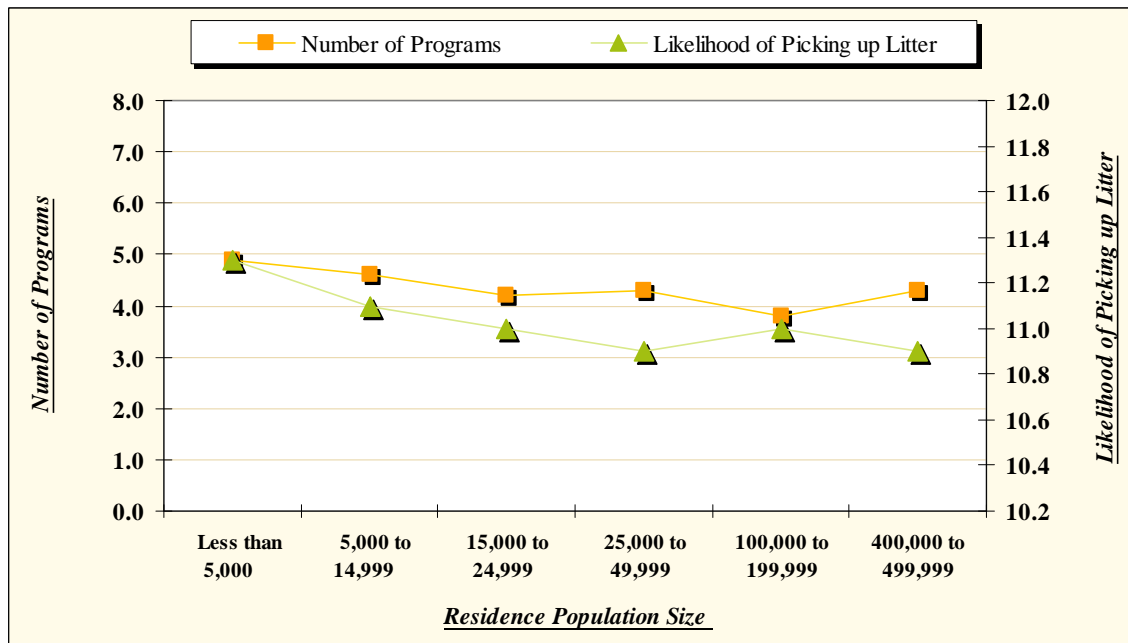


Figure 14. Mean Number of Programs with which Respondent is Familiar (Q6a-h) and Mean Likelihood of Picking up Litter (Q5a-c): by Residence Population Size.

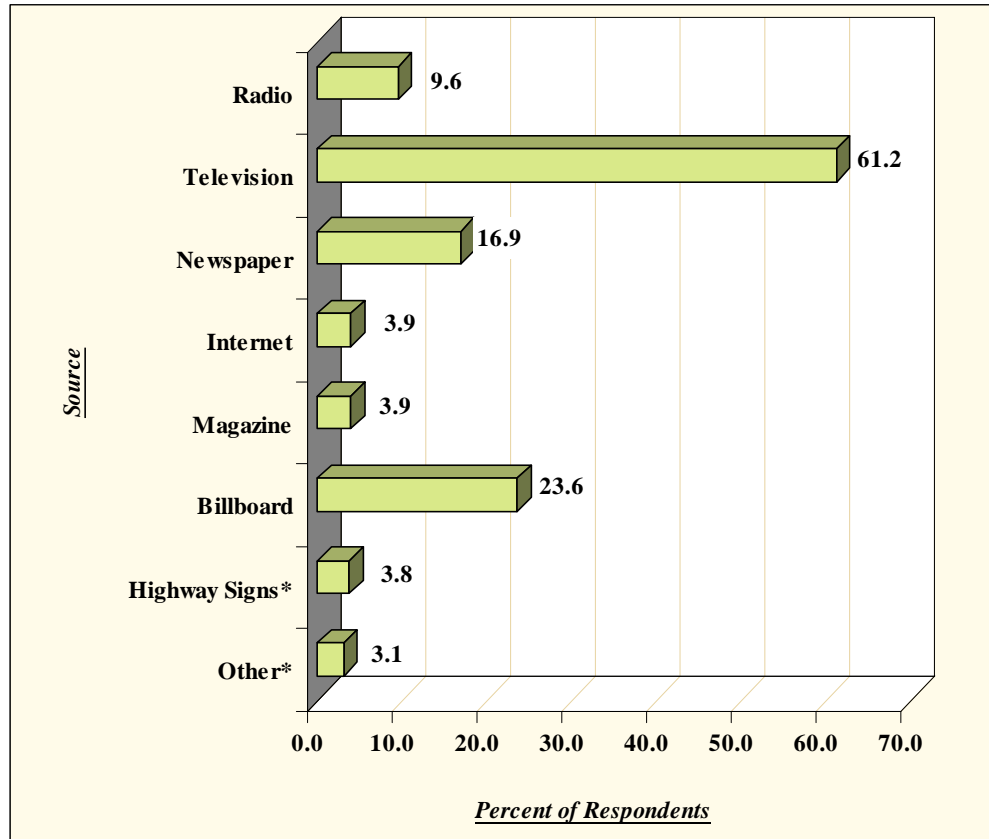


A total of 178 respondents saw or heard ads or public services messages concerning litter in the year prior to the survey. Over sixty percent of respondents recalled seeing ads on television (Figure 15). Over a fifth had seen ads on billboards and about seventeen percent had read ads in

#### IV. TELEPHONE SURVEY: PROGRAMS AND STRATEGIES FOR REDUCING LITTER

newspapers. Others sources were mentioned less frequently, ranging from ten percent for radio to about four percent for Internet and magazines.

**Figure 15. Source of Public Service Messages or Ads Concerning Litter that Respondent has Heard or Seen in the Last Year (Q9a-h).**



N=178 ‡

‡ Number includes respondents who have seen, read, or heard ad about littering in the last year (Q8=1) and were able to recall the location or source of the ad. Another 176 respondents believed that they had seen or heard ads but could not recall the source. These respondents were excluded from the analysis for this chart.

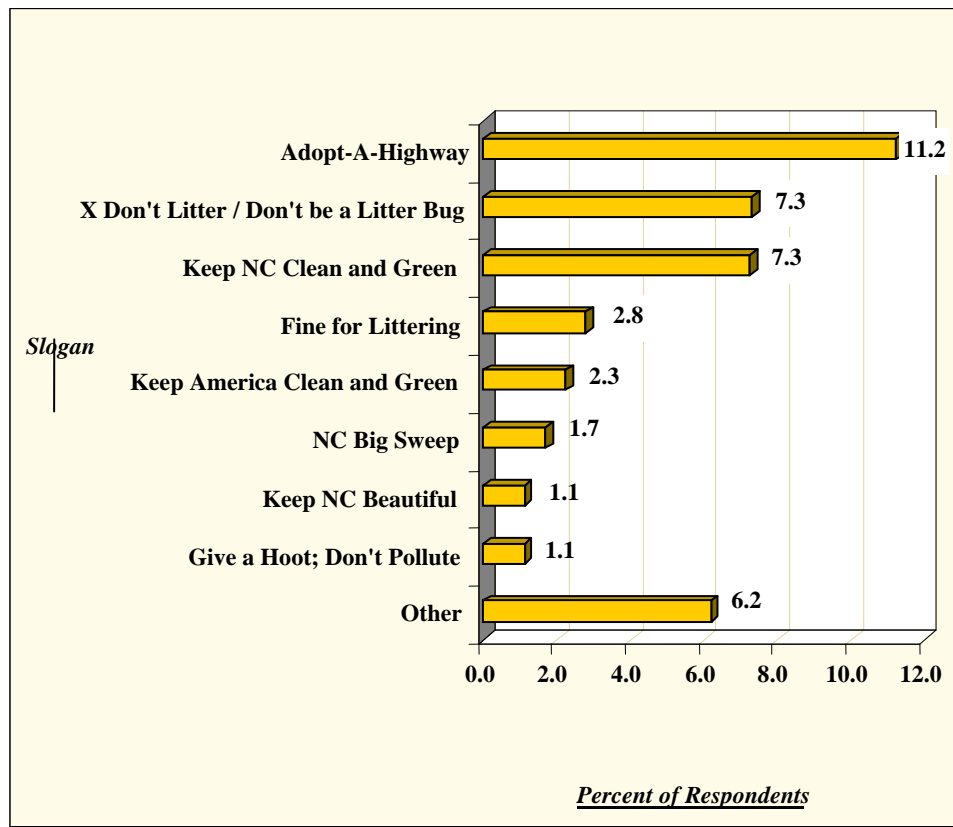
\*Includes Adopt-A-Highway Signs

\*\*Other includes: Church (n=6); School/School ads (n=4); Signs/Posters in stores (n=2); Bumper stickers on vehicles (n=2); Signs/Posters in office buildings (n=1); Trash cans (n=1)

Although 178 respondents stated that they had heard or seen ads about littering, recall of the content of the ads was less reliable. Most respondents were unable to specify the content of ad they had seen or heard. Figure 16 lists nine slogans that the 178 respondents cited. Adopt-A-Highway was the most widely recalled slogan, although only 11.2 percent (twenty respondents) cited it. All other ads or phrases were recalled by fewer than ten percent of the 178 respondents

#### IV. TELEPHONE SURVEY: PROGRAMS AND STRATEGIES FOR REDUCING LITTER

Figure 16. Slogans Used in Public Service Messages or Ads concerning Littering that Respondents has Heard or Seen in Last Year (Q9a-h).



N=178 respondents who had seen or heard ads or public services in the last year (Q8=Yes).

\*203 respondents did not recall seeing or hearing any ads or public services messages.

See Appendix B for exact verbiage provided by respondents who recalled other ads or messages.

#### B. PERCEIVED EFFECTIVENESS OF LITTER REDUCTION STRATEGIES

Respondents were asked to assess the effectiveness of litter reduction strategies (Figure 17). Most strategies are not seen as potentially very effective. Four strategies were rated as very effective by about a third of respondents or more: *Inform citizens that it costs millions of taxpayer dollars each year to clean up litter*, *Show pictures of what Wake County would look like if nobody cleaned up litter*, *Remind people that litter is illegal and violators are subject to fines and community service*, and *Tell citizens that there is a toll-free number for them to report people who litter*. Other very effective ratings ranged from around twenty-three percent to nine percent. A larger proportion of respondents rated most strategies as somewhat effective. The combined very effective and somewhat effective ratings ranged from forty to ninety percent. Respondents identified three strategies as the least effective, including: *Tell people littering is not the right thing to do*, *Use a famous person from the area to be a anti-litter spokesperson*, and *Remind people that even a small amount of trash is still litter*.

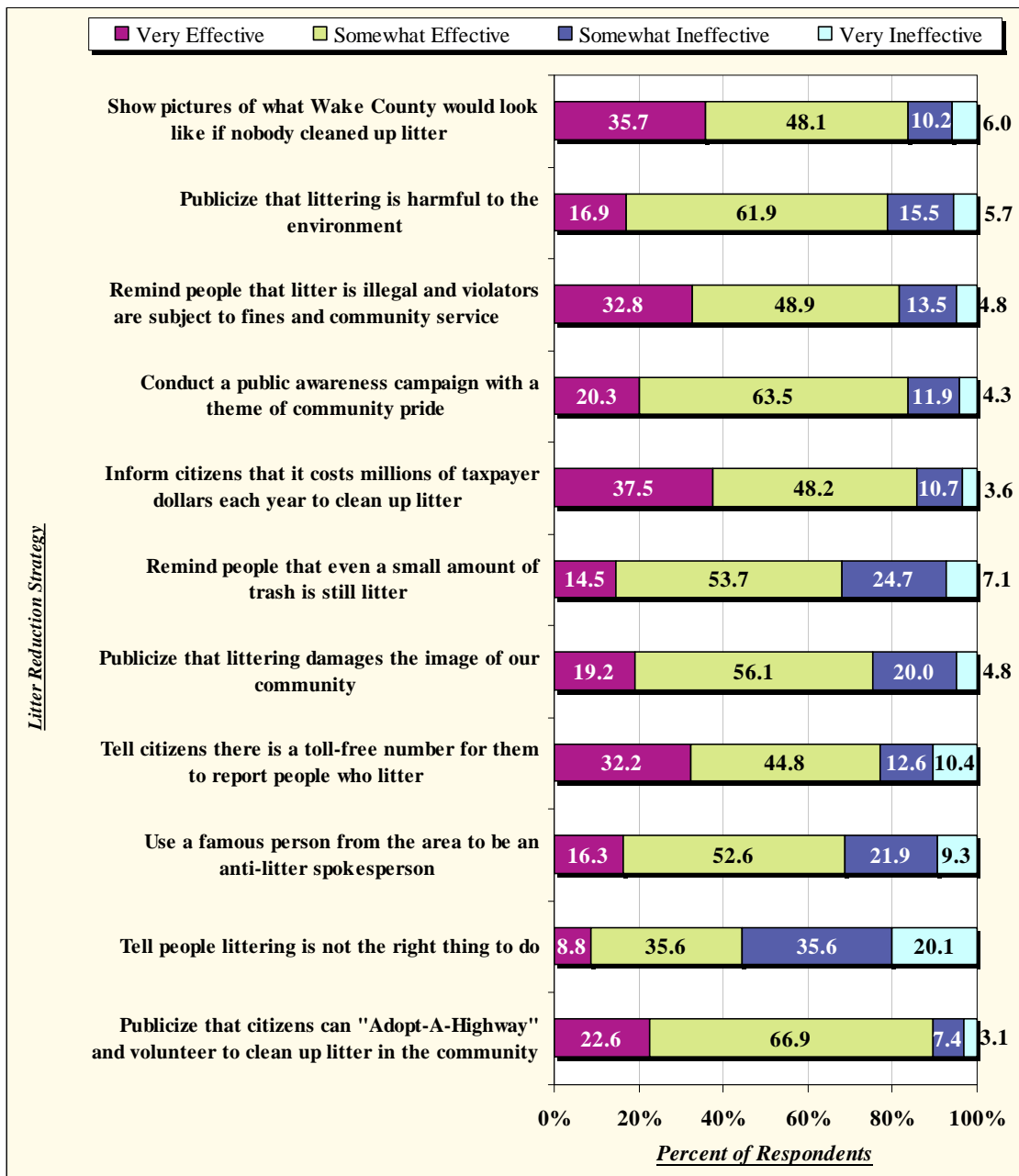
Respondents (n=130) also volunteered ideas for litter reduction strategies. Most suggestions



#### IV. TELEPHONE SURVEY: PROGRAMS AND STRATEGIES FOR REDUCING LITTER

avored legal action or consequences for reducing littering behavior (see *Appendix B*). Other groupings of suggestions pertained to Education, Public Awareness, Improvement of Availability/Accessibility of Amenities, Provision of Incentives for Reduction of Littering, and Encouraging Community/Personal Action & Responsibility.

**Figure 17. Strategies for Reducing Littering (Q7).**



N=411-422

Respondent groups varied little in their evaluation of litter reduction strategy effectiveness (Table 9). Older respondents generally rated strategies as more effective than younger respondents,

#### IV. TELEPHONE SURVEY: PROGRAMS AND STRATEGIES FOR REDUCING LITTER

although not by a large margin. Older respondents were much more likely to agree that *Publicize that littering damages the image of our community* is an effective strategy, whereas younger respondents favored *Use a famous person from the area to be an anti-litter spokesperson*.

Renters regard all proposed litter reduction strategies as slightly more effective than owners. The largest gaps in mean ratings of effectiveness were for the strategies *Show pictures of what Wake County would look like if nobody cleaned up litter* and *Remind people that even a small amount of trash is still litter*, although the magnitude of mean differences was only .2.

The number of children residing in a household was not associated with perceived effectiveness of litter reduction strategies in any uniform way. Respondents without children in the home favor the strategies, *Show pictures of what Wake County would look like if nobody cleaned up litter* and *Inform citizens that it costs millions of taxpayer dollars each year to clean up litter. Tell citizens there is a toll-free number for them to report people who litter* is perceived as most effective by respondents with four or more children.

**Table 9. Mean Rating of Effectiveness of Litter Reduction Strategies: by Respondent Group.**

Strategy	Respondent Group / Mean Rating of Effectiveness								
	Age				Type Residence		Children in Household		
	18-20	21-39	40-59	60+	Owner	Renter	0	1-3	4 +
Show pictures of what the County would look like if nobody cleaned up litter	3.1	3.1	3.1	3.2	3.1	3.3	3.2	3.0	3.0
Publicize that littering is harmful to the environment	2.8	2.8	2.9	3.0	2.9	3.0	3.0	2.8	2.9
Remind people that litter is illegal and violators are subject to fines and community service	2.9	3.2	3.0	3.2	3.1	3.2	3.1	3.0	2.8
Conduct a public awareness campaign with a theme of community pride	3.0	3.0	3.0	3.0	3.0	3.1	3.0	3.0	3.1
Inform citizens that it costs millions of taxpayer dollars each year to clean up litter	3.2	3.2	3.2	3.2	3.2	3.3	3.2	3.2	2.9
Remind people that even a small amount of trash is litter	2.5	2.7	2.8	2.8	2.7	2.9	2.8	2.7	3.0
Publicize that littering damages the image of our community	2.4	2.8	2.9	3.0	2.9	2.9	2.9	2.8	3.0
Tell citizens there is a toll-free number for them to report people who litter	2.6	3.0	3.0	3.1	3.0	3.1	3.0	2.9	3.3
Use a famous person from the area to be an anti-litter spokesperson	3.0	2.8	2.7	2.8	2.7	2.8	2.8	2.7	2.6
Tell people littering is not the right thing to do	2.2	2.4	2.3	2.4	2.3	2.4	2.3	2.3	2.4
Publicize that citizens can "Adopt-A-Highway" and volunteer to clean up litter in the community	3.0	3.0	3.1	3.2	3.1	3.1	3.1	3.0	3.1
<b>MEAN—ALL ITEMS</b>	<b>2.8</b>	<b>2.9</b>	<b>2.9</b>	<b>3.0</b>	<b>2.9</b>	<b>3.0</b>	<b>2.9</b>	<b>2.9</b>	<b>2.9</b>

## **V. WEB SURVEY: BACKGROUND INFORMATION**

### **A. PROCEDURES**

To expand on findings of the telephone survey, Wake County Environmental Services hosted a web survey as part of the *86it Anti-Litter Movement* baseline data collection (see *Appendix C*). The survey was conducted during the fall of 2010 and was open to adult residents of Wake County. All the questions on the telephone survey were incorporated into the web survey and a number of more detailed questions about littering in Wake County were added including items pertaining to the following:

- Littered areas and roadways in Wake County
- Sources of litter
- Contribution of types of litter to the overall littering problem
- Groups most likely to litter and intentionality of littering
- Willingness to volunteer to clean up litter in Wake County

Information on the survey was posted on the following relevant websites:

- Wake County website: main page
- Wake County website: recycling page
- Wake County website: littering information page

The *Raleigh News and Observer* ran an article publicizing the survey and upcoming litter campaign. The Town of Cary also sent emails to block group leaders with a link to the survey. Links to the survey were posted on the following Facebook pages:

- Wake County Government
- Keep NC Beautiful
- North Carolina Big Sweep

The survey was also reposted on two local websites and email notifications were sent to 463 potentially interested individuals identified by Wake Environmental Services.

Because the survey was open to all interested adults in Wake County, the final sample is an opportunity, or self-selected, sample and thus is not representative of Wake County's adult population. Due to the nature and sources of advertising for the web survey, the sample may actually reflect the views of a population of Wake County residents who are active in the community and interested in environmental issues, providing a useful contrast and comparison group with respect to the randomly selected telephone sample.

### **B. SAMPLE CHARACTERISTICS**

A total of 592 respondents completed the online survey. Slightly under two-thirds were female (Table 10), and the average age was 51.1 years. Over three-quarters of respondents have completed an undergraduate or higher degree. The majority of respondents have lived in Wake County more than ten years.

## V. WEB SURVEY: BACKGROUND INFORMATION

**Table 10. Respondent Sociodemographic Characteristics.**

Characteristic	Percent	Row N
<b>Gender</b>		
‣ Female	63.9	305
‣ Male	36.1	172
<b>Age in Years</b>		
‣ 18 to 20	0.4	2
‣ 21 to 30	6.2	28
‣ 31 to 40	18.2	82
‣ 41 to 50	22.4	101
‣ 51 to 60	26.2	118
‣ 61 to 70	20.0	90
‣ 71 to 80	6.2	28
‣ 81 and above	0.2	1
<b>Average Age (in years)</b>	<b>51.1</b>	<b>450</b>
<b>Educational Attainment</b>		
‣ High school / GED	4.8	23
‣ Some college	17.1	82
‣ College graduate	47.6	229
‣ Graduate school or higher	30.6	147
<b>Years Residing in Wake County</b>		
‣ Less than two years	2.2	12
‣ 2-4 years	10.6	59
‣ 5-10 years	21.4	119
‣ More than 10 years	65.9	367

A total of 475 of the 592 respondents provided information on place of residence. Of this group, over three-quarters live in Raleigh or Cary (Table 11). The remainder live in other suburban towns or more rural areas of Wake County. Of the 592 respondents, 382 provided information on the location of their jobs. (A number of respondents skipped the question and some noted that they were retired or unemployed.) Of this group, slightly under three-quarters work in Raleigh or Cary. About four percent work in Morrisville or Wake Forest and three percent in Apex. Other Wake County locations were represented by less than two percent each. Table 12 shows the corresponding population breakdowns for the home and work locations.

Over ninety percent of respondents live in owner occupied residences (Table 13) and over two-thirds have no children under age eighteen living in the home. Over sixty percent of respondents live in households with a total income of \$76,000 or higher.

## V. WEB SURVEY: BACKGROUND INFORMATION

**Table 11. Respondent Residence and Work Location.**

Location	Percent of Respondents	
	Residence	Employment
Angier, NC		0.3
Apex, NC	6.1	2.9
Cary, NC	24.4	14.7
Chapel Hill, NC		0.5
Charlotte, NC		0.5
Durham, NC		6.3
Four Oaks, NC		0.5
Fuquay Varina, NC	3.0	1.8
Garner, NC	2.3	1.6
Holly Springs, NC	1.9	0.5
King, NC		0.3
Knightdale, NC	0.6	0.3
Morrisville, NC	1.5	4.2
New Hill, NC		0.5
Raleigh, NC	51.8	58.6
Rolesville, NC	0.4	0.3
Smithfield, NC		0.3
Wake Forest, NC	4.8	3.9
Wendell, NC	0.8	0.5
Willow Spring, NC	1.1	0.5
Youngsville, NC	0.2	0.3
Zebulon, NC	1.1	0.8
<b>COLUMN N</b>	<b>475</b>	<b>382</b>

## V. WEB SURVEY: BACKGROUND INFORMATION

**Table 12. Population Size of Respondent's Residence and Work Location.**

Population	Location / Percent of Respondents	
	Home	Work
➤ Less than 5,000	1.7	2.6
➤ 5,000 to 14,999	4.0	6.0
➤ 15,000 to 24,999	4.8	2.4
➤ 25,000 to 49,999	13.3	8.1
➤ 50,000 to 74,999		0.5
➤ 100,000 to 199,999	24.4	14.7
➤ 200,000 to 299,999		6.5
➤ 400,000 to 499,999	51.8	58.6
➤ 500,000 and Above		0.5
<b>MEAN</b>	<b>248,917.7</b>	<b>280,527.6</b>
<b>TOTAL N</b>	<b>475</b>	<b>382</b>

**Table 13. Household Characteristics**

Characteristic	Percent of Respondents	Row N
<b>Type Household</b>		
➤ Owner Occupied	93.3	448
➤ Rental*	6.7	32
<b>Children under 18 in Household</b>		
➤ None	69.2	330
➤ One	12.8	61
➤ Two to Three	16.4	78
➤ Four or More	1.7	8
<b>Household Income</b>		
➤ Under \$20,000	0.7	3
➤ \$21,000 to \$35,000	5.0	21
➤ \$36,000 to \$45,000	9.7	41
➤ \$46,000 to \$60,000	12.5	53
➤ \$61,000 to \$75,000	12.5	53
➤ \$76,000 to \$90,000	14.4	61
➤ \$91,000 to \$105,000	13.2	56
➤ \$106,000 and greater	32.1	136
<b>TOTAL</b>	<b>100.0</b>	<b>424</b>

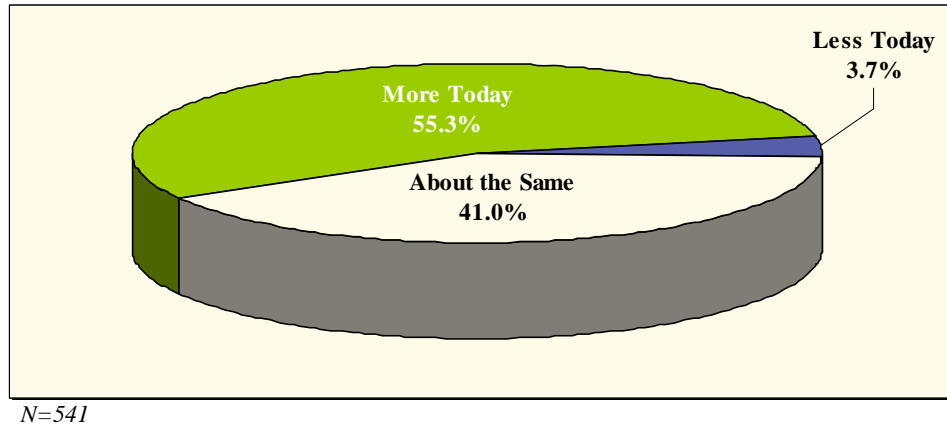
\*Includes one respondent who resides in a university residence hall.

## VI. WEB SURVEY: PERCEPTION OF AND REASONS FOR LITTERING

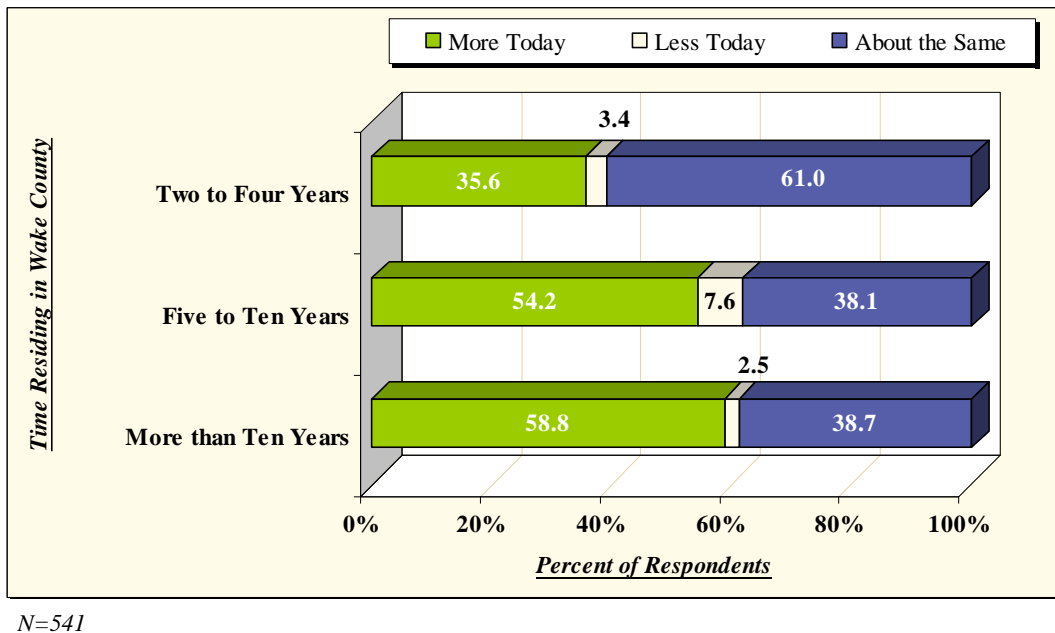
### A. PERCEPTION OF WAKE COUNTY'S LITTERING PROBLEM

Over half of respondents participating in the web survey believe that Wake County is more littered today than two years ago (Figure 18). Over forty percent believe that littering has remained the same. The longer respondents have resided in Wake County, the greater degree of change they perceive in littering (Figure 19).

**Figure 18. Perception of Change in Amount of Litter in Wake County over Last Two Years (Q3).**



**Figure 19. Perception of Change in Amount of Litter in Wake County over Last Two Years (Q3) by Time Residing in Wake County (Q2).**

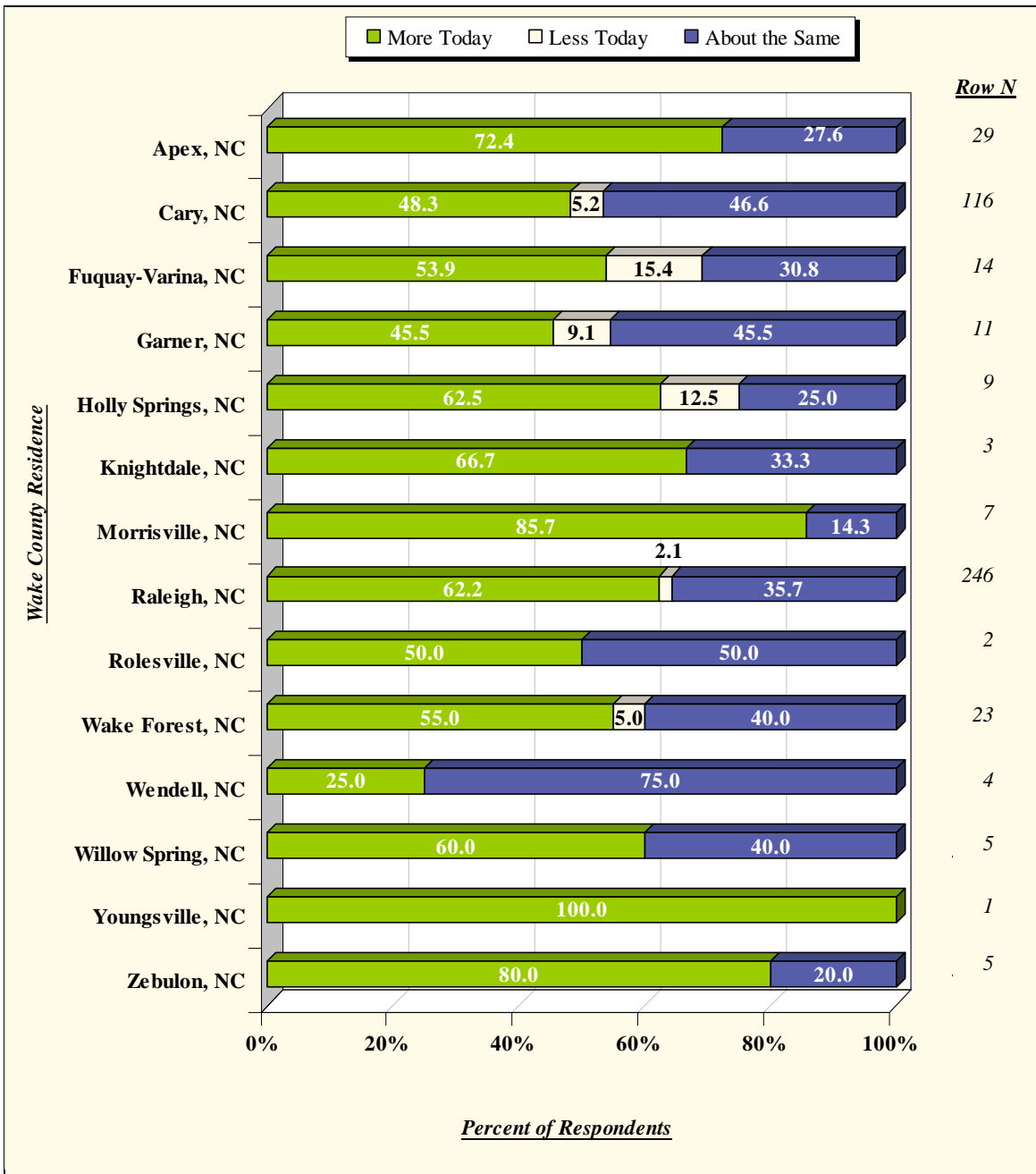


In general, respondents in most Wake County locations believe that the amount of litter has increased or stayed the same in the last two years (Figure 20). Respondents in Fuquay-Varina

## VI. WEB SURVEY: PERCEPTION OF AND REASONS FOR LITTERING

and Holly Springs are most likely to report that there is less litter today than two years ago. Several locations are represented by only a few respondents. Among locations with five or more respondents, respondents in Zebulon, Morrisville, and Apex are most likely to believe that littering has increased.

**Figure 20. Perception of Change in Amount of Litter in Wake County over Last Two Years (Q3) by Wake County Residence (Q12a).**



N=465



## **VI. WEB SURVEY: PERCEPTION OF AND REASONS FOR LITTERING**

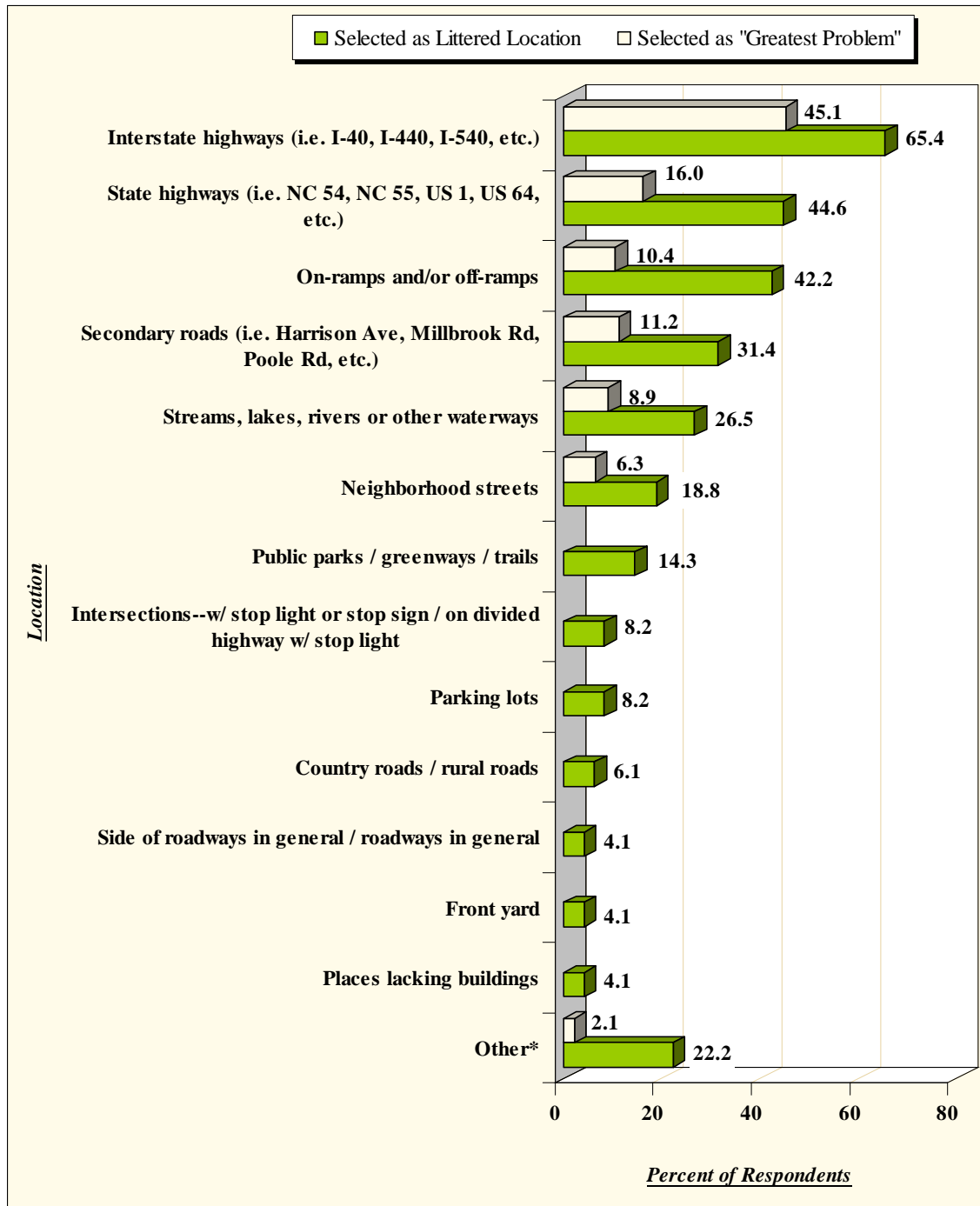
Slightly under two-thirds of respondents have seen litter on Interstate Highways (Figure 21) and over forty percent selected Interstates as the area with the most significant litter problem. State highways and on-off ramps were also seen as significant sources of litter. Respondents offered public parks, greenways and trails as unlisted locales where litter is often spotted. Of the options addressed in the survey, respondents were least likely to identify neighborhood streets or streams, rivers or other waterways as places where litter is present or poses the greatest problem.

Respondents were asked to list the specific roadway segments that they perceive to be the most littered in the county. Responses to this question referred to a wide variety of locations countywide and were almost as varied as the number of respondents. Various locations on Interstate highways are seen as the most littered type of road segment in the County (Figure 22). Interstate 40 and Interstate 540 or specific segments of the Interstates were each cited by over a fifth of respondents (See *Appendix D* for detailed listing of roads and roadway segments cited). Some respondents cited the south side of the I-440 Beltline whereas others cited segments on the north side. Of state highways mentioned, the various locations along US 1 were cited frequently. Slightly under a fifth of respondents listed specific city streets or locations, including a variety of neighborhood streets.

Many responses classified as “other” indicate that litter is a severe problem across the county—that is, no specific area or road segment could be singled out as most littered. In general, respondents expressed dismay at the extensive amount of litter along roadways. A number of respondents noted that their perspective on which areas appear most littered was influenced by where they live and/or work.

## VI. WEB SURVEY: PERCEPTION OF AND REASONS FOR LITTERING

**Figure 21. Areas where Litter is Most Often Seen† (Q4) and Area with the Greatest Littering Problem (Q5).**



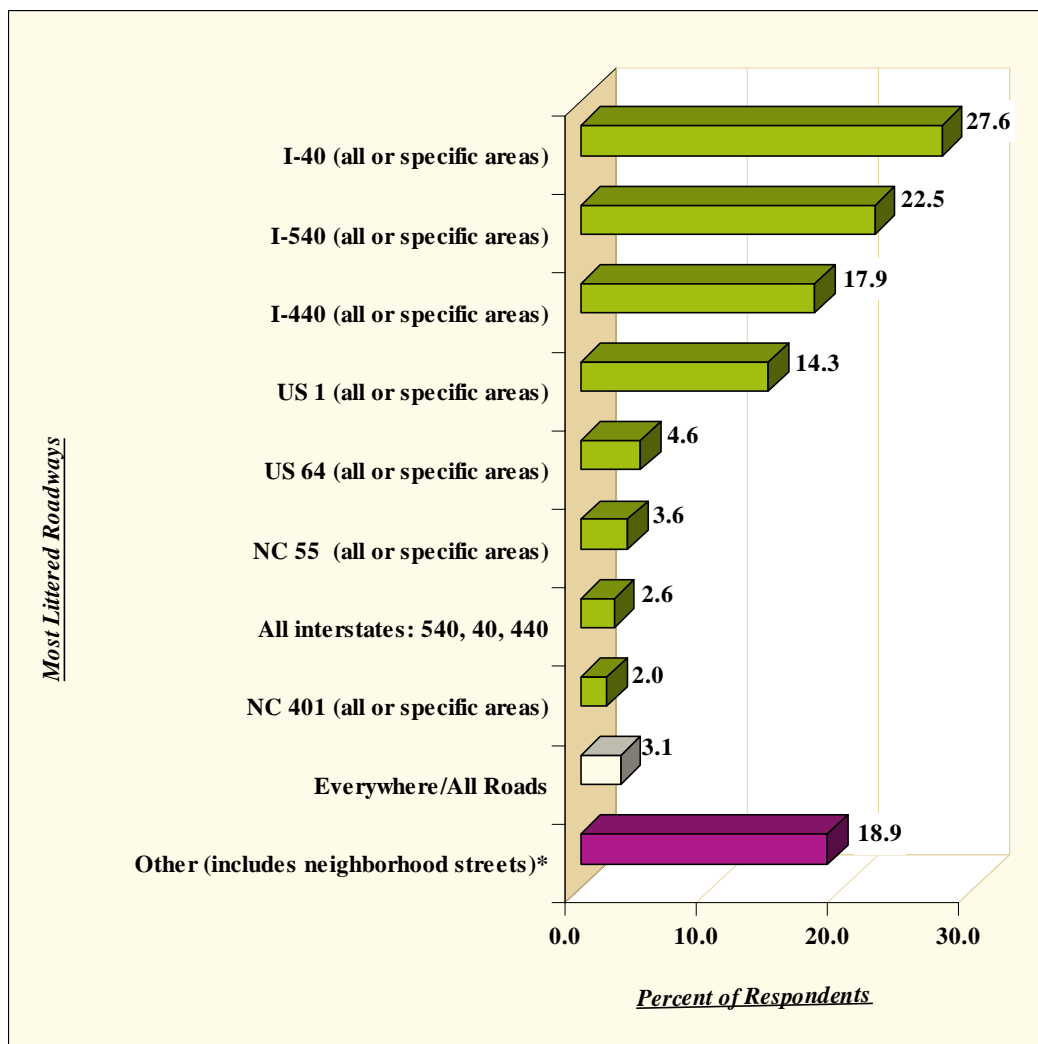
N=592 (where litter is seen)/ 537 (where litter is greatest problem)

\*Other—See Appendix D.

†Because respondents were allowed to select one or more areas where litter is most often seen, the column percent adds to greater than one-hundred percent. For the greatest littering problem, respondents selected only one area.

## VI. WEB SURVEY: PERCEPTION OF AND REASONS FOR LITTERING

Figure 22. Most Littered Roadways/Roadway Segments in Wake County (Q6).



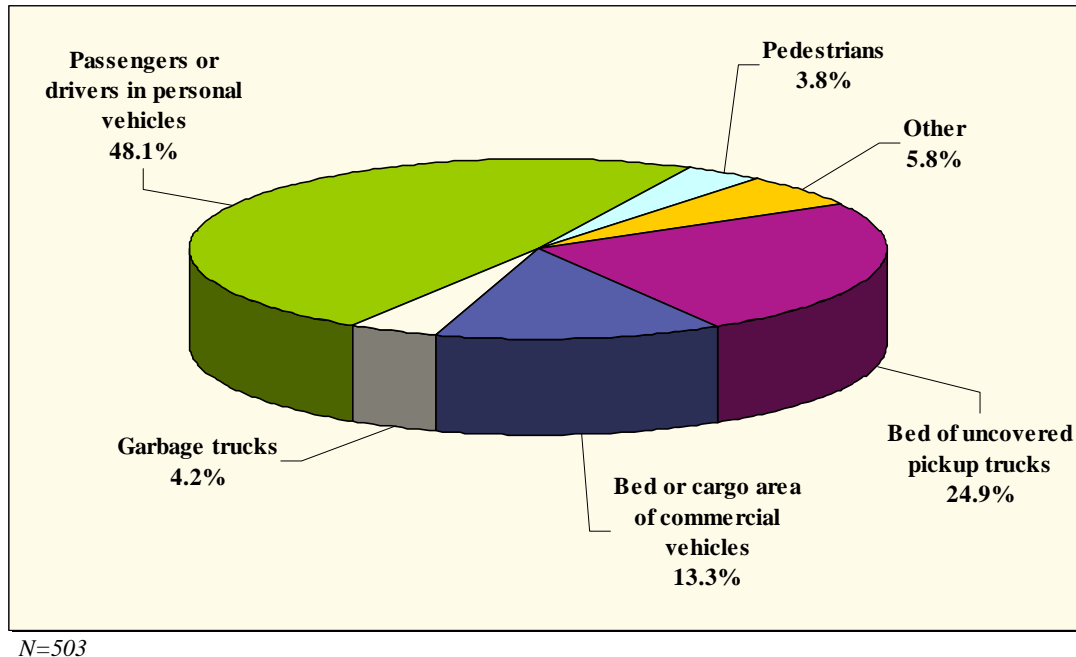
N=196 respondents who provided comments in Q6.

\*Other: See Appendix D

## VI. WEB SURVEY: PERCEPTION OF AND REASONS FOR LITTERING

Passengers or drivers in personal vehicles are seen as the greatest source of litter in Wake County, cited by almost half of respondents (Figure 23). Over a fifth of respondents mentioned beds of uncovered pickup trucks and about thirteen percent identified beds or cargo areas of commercial vehicles. Respondents regard pedestrians and garbage trucks as relatively inconsequential sources of litter.

**Figure 23. Main Source of Litter in Wake County (Q7).**

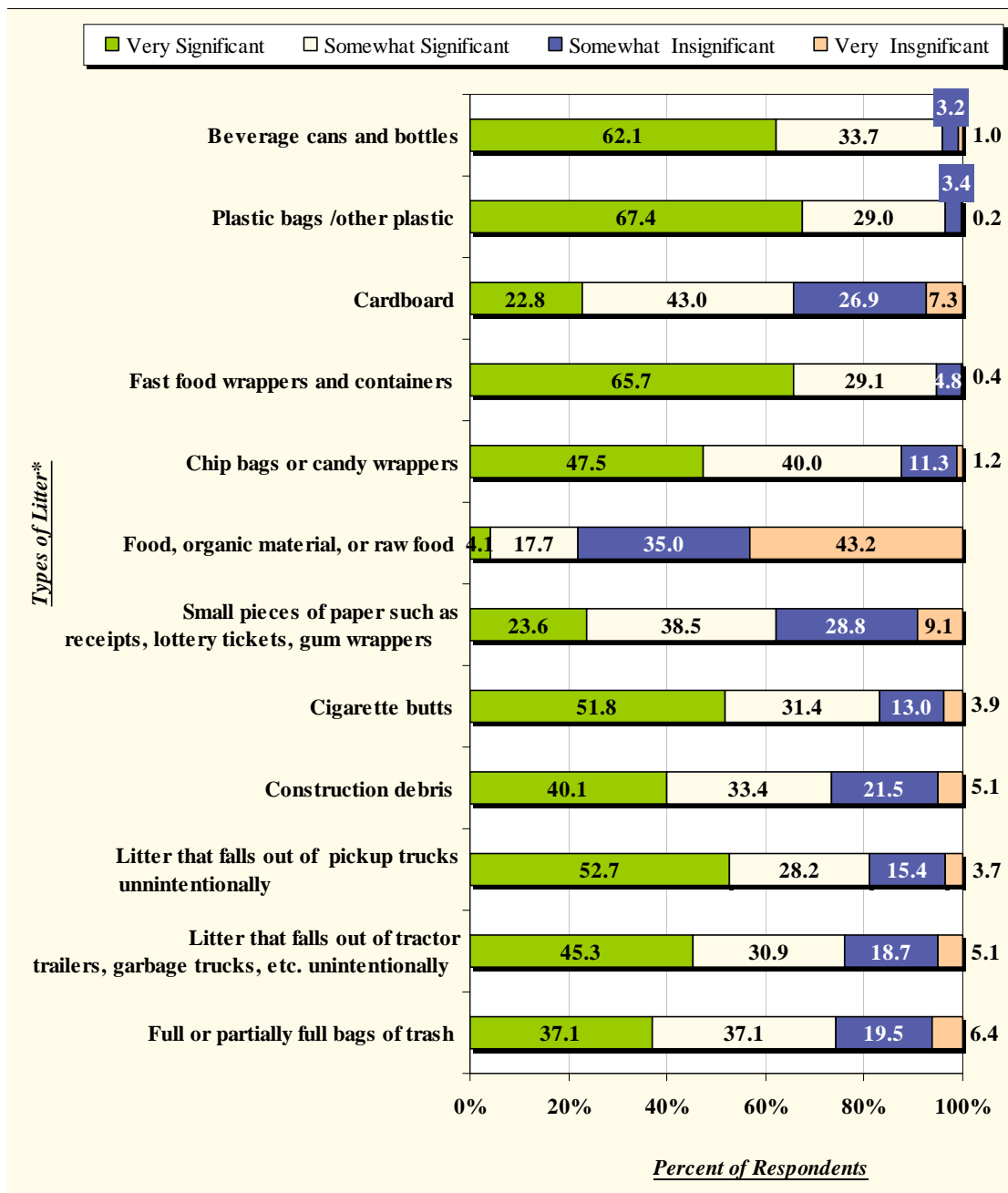


About two-thirds of respondents cited fast food wrappers and plastic bags or other plastics as “very significant” litter problems (Figure 24). Consistent with existing research, about sixty-two percent of respondents regard beverage cans and bottles as a significant problem. About half cited cigarette butts, chip bags or candy wrappers, or litter that falls out of pickup trucks unintentionally. About forty-five percent cited litter that falls out of tractor-trailers or garbage trucks.

Respondents are least concerned about food, organic material, and raw food litter. Nearly forty-three percent regard such organic waste as very insignificant. Cardboard and small pieces of paper are similarly viewed as relatively unimportant to most respondents.

## VI. WEB SURVEY: PERCEPTION OF AND REASONS FOR LITTERING

Figure 24. Significance of Problem Caused by Specific Types of Litter (Q8).



N ranges from 463 to 501.

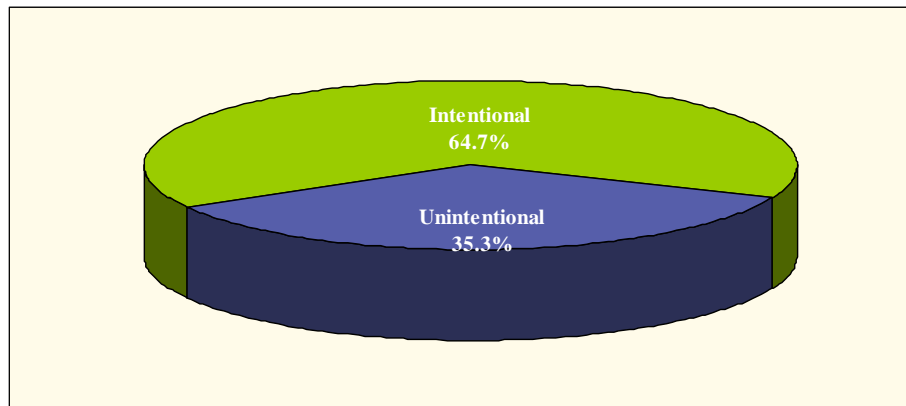
\*A total of 56 respondents mentioned other items or sources of litter. See Appendix D.

## VI. WEB SURVEY: PERCEPTION OF AND REASONS FOR LITTERING

### B. PERCEPTION OF LITTERING BEHAVIOR

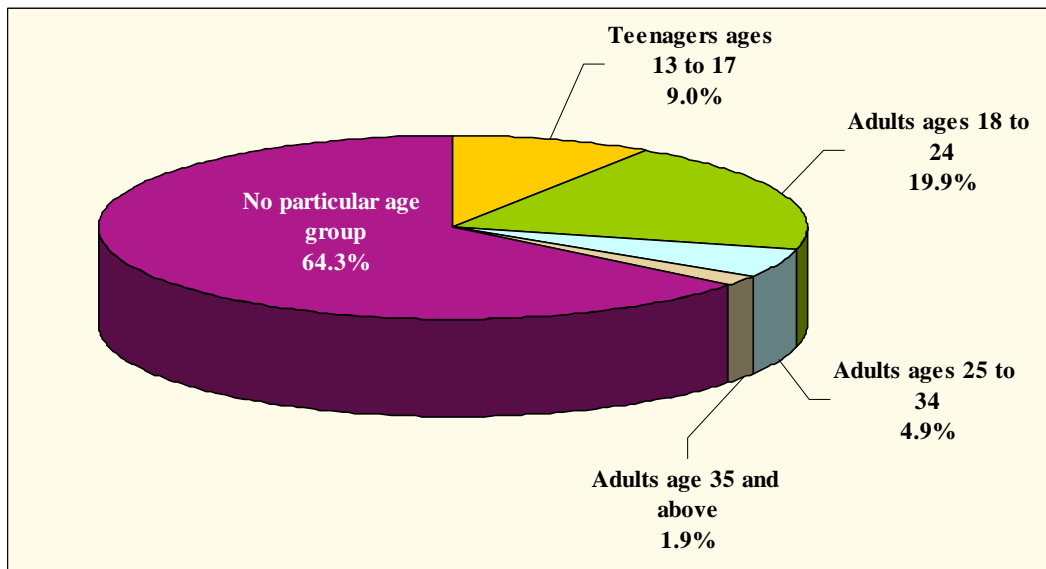
Respondents were asked several questions concerning their view of littering behavior. Around two-thirds believe that most littering is intentional (Figure 25). When asked which age group is most likely to litter, the sample overwhelmingly reported that no particular age group is to blame (Figure 26). One in five respondents regarded young adults aged 18-24 as most likely to litter, followed by teens aged 13-17. Adults over the age of 35 were perceived as least likely to litter.

**Figure 25. Intentionality of Littering (Q9).**



N=501

**Figure 26. Age Group Most Likely to Litter (Q17).**



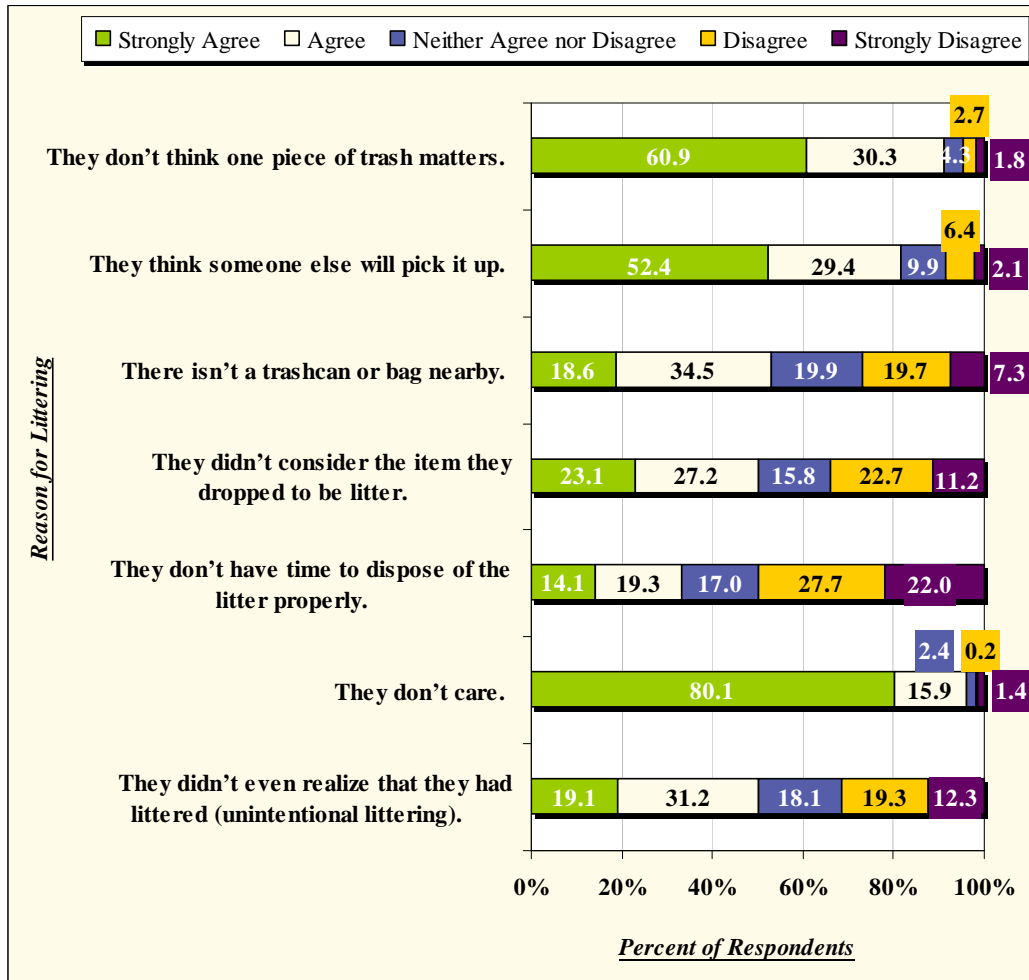
N=487

Twenty-five respondents made additional comments concerning groups likely to litter. See Appendix D.

## VI. WEB SURVEY: PERCEPTION OF AND REASONS FOR LITTERING

When asked reasons why people litter, most respondents reported that *They don't think one piece of trash matters* or *They don't care*, again reflecting individualistic explanations reflected in the phone survey results (Figure 27). Most respondents disagree or strongly disagree that offenders litter because (1) *They don't have time to dispose of the litter properly*, (2) *They didn't consider the item they dropped to be litter*, (3) *They didn't realize that they had littered*, or (4) *There isn't a trashcan or bag nearby*.

Figure 27. Agreement with Statements Concerning Reasons that People Litter (Q4).



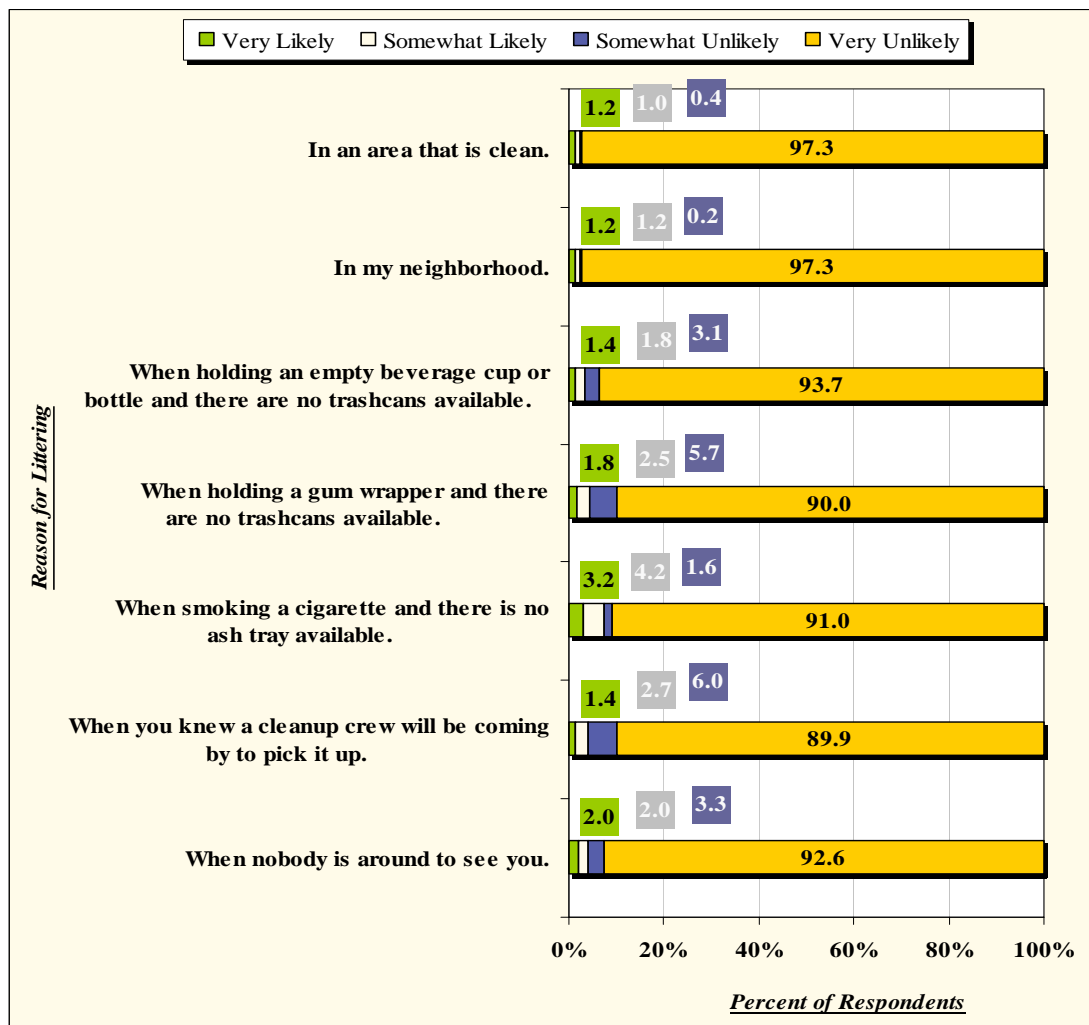
N ranges from 478 to 492.

## VI. WEB SURVEY: PERCEPTION OF AND REASONS FOR LITTERING

### C. PERSONAL BEHAVIOR

In discussing personal behavior, respondents reported that they would be very unlikely to litter across a variety of situations (Figure 28). Consistent with existing research, respondents report that they would be least likely to litter in clean areas or within their own neighborhoods. Littering is more likely when the respondent lacks access to a trash can or ash tray, when clean-up crews are expected to come by to collect litter, or when no one is around. Even in these scenarios, however, almost ninety percent of respondents report that they would be very unlikely to litter.

**Figure 28. Likelihood that Respondent would Litter in Specific Situations (Q12).**



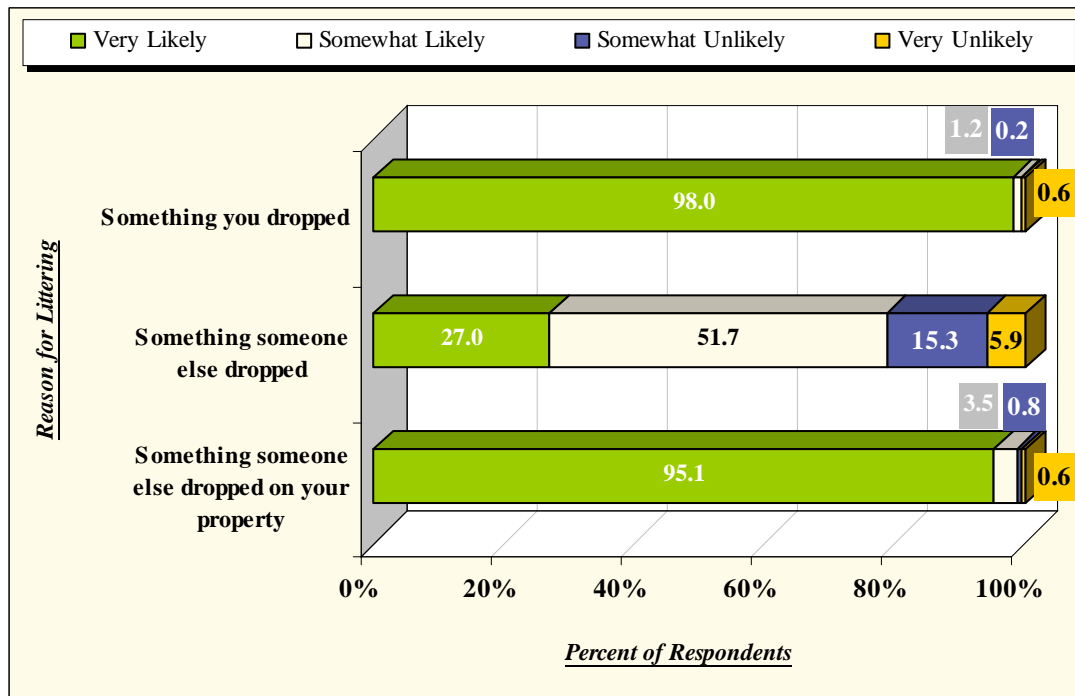
*N ranges from 377 to 489.*



## VI. WEB SURVEY: PERCEPTION OF AND REASONS FOR LITTERING

Respondents state that they are most likely to pick up items they have dropped; ninety-eight percent report that they would retrieve such items (Figure 29). Over ninety-five percent of respondents similarly report that they would pick up items discarded on their personal property. Yet respondents are somewhat hesitant to pick up items that others had dropped. Only about twenty-seven percent would be very likely to collect such litter. Only about twenty-seven percent would be very likely to collect such litter.

**Figure 29. Likelihood Respondent would Pick up Litter in Specific Situations (Q13).**



*N ranges from 489 to 490.*

Table 14 contains information on mean likelihood of picking up litter in the three situations of interest, among various respondent groups. For all groups in question, respondents are most likely to agree that they would pick up something they had dropped. Younger respondents, renters, and those with lower income and educational levels tended to score lower on this item than their counterparts. Across all groups, respondents appear generally less willing to pick up something someone else dropped in an unspecified location but all are more likely to pick up something dropped on their property. Among the groups examined, only one difference was statistically significant: respondents living in owner occupied residences are statistically more likely than renters to pick up something someone else dropped on their property.

## VI. WEB SURVEY: PERCEPTION OF AND REASONS FOR LITTERING

**Table 14. Mean Likelihood of Picking up Litter (Q13a-c) by Selected Respondent Characteristics.**

Characteristic	Mean Likelihood* of Picking Up:			Row N
	Something You Dropped	Something Someone Else Dropped	Something Someone Dropped on your Property	
<b>Gender</b>				
‣ Female	4.0	3.0	3.9	305
‣ Male	4.0	3.0	3.9	172
<b>Mean Age in Years</b>				
‣ 18 to 29 Years	3.9	2.6	3.8	22
‣ 30 to 49 Years	4.0	3.0	4.0	182
‣ 50 to 69 Years	4.0	3.0	3.9	204-205
‣ 70 Years or Older	4.0	3.1	4.0	41
<b>Educational Attainment</b>				
‣ High School Graduate/GED	3.9	3.0	3.8	23
‣ Some College	4.0	3.0	3.9	82
‣ College Graduate	4.0	3.0	4.0	229
‣ Graduate Degree	4.0	3.0	3.9	146-147
<b>Household Income</b>				
‣ Under \$20,000	4.0	3.7	4.0	3
‣ \$21,000 to \$35,000	3.9	3.7	2.7	21
‣ \$36,000 to \$45,000	3.9	2.8	3.9	41
‣ \$46,000 to \$60,000	4.0	3.1	4.0	53
‣ \$61,000 to \$75,000	4.0	2.9	4.0	53
‣ \$76,000 to \$90,000	4.0	3.0	3.9	60-61
‣ \$91,000 to \$105,000	4.0	2.9	4.0	56
‣ \$106,000 and greater	4.0	3.1	4.0	136
<b>Children in Household</b>				
‣ None	4.0	3.0	3.9	330
‣ One	4.0	3.1	3.9	61
‣ Two to Three	4.0	3.0	3.9	78
‣ Four or More	4.0	3.6	4.0	7-8
<b>Residence</b>				
‣ Owner Occupied	4.0	3.0	4.0†	447-448
‣ Rental	3.9	2.8	3.6†	32

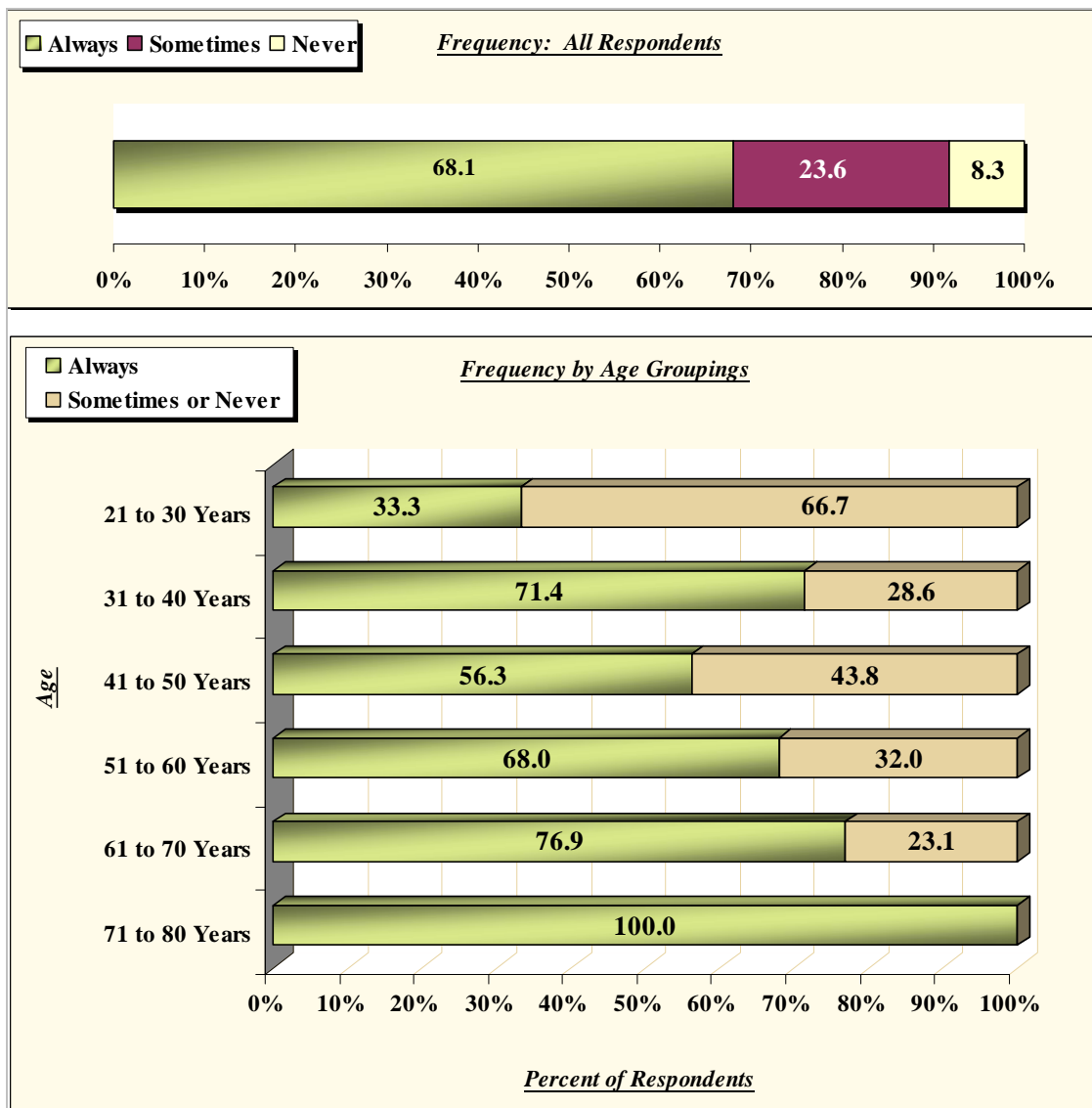
\*Based on a 4-point scale as follows: Very Likely=4; Somewhat Likely=3; Somewhat Unlikely=2; Very Unlikely=1

†Owner occupied is significantly different from rental (Row Mean Scores Test, <0.05 level)

## VI. WEB SURVEY: PERCEPTION OF AND REASONS FOR LITTERING

Among truck drivers in this sample (n=72), slightly over two-thirds routinely cover their truck bed when hauling items. Only about eight percent of these respondents report never covering their truck beds (Figure 30). With the exception of the thirty-one to forty age category, the likelihood of covering a truck bed generally increases with age; only one third of drivers between the ages of twenty-one and thirty, compared with 100 percent of respondents between seventy-one and eighty, state that they always cover their truck bed. Drivers aged thirty-one to forty to years are more likely to cover their beds than all groups except those above age sixty.

**Figure 30. Frequency Respondent Covers Truck Bed when Hauling Items (Q24): All Respondents and by Age Groups.**

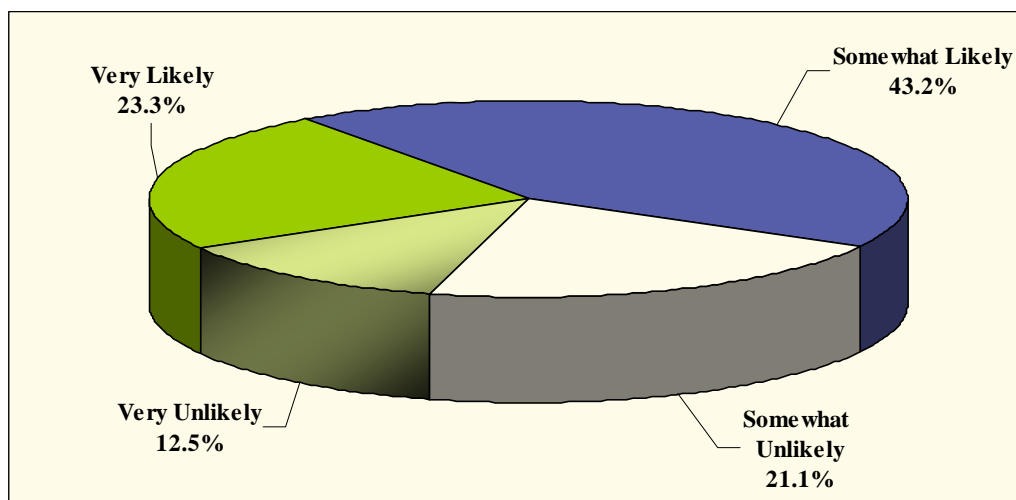


N=72

## VI. WEB SURVEY: PERCEPTION OF AND REASONS FOR LITTERING

When asked whether they would volunteer to pick up litter in Wake County, about two-thirds of respondents reported that they would be somewhat or very likely to participate (Figure 31). Only 12.5 percent said that they would be very unlikely to do so.

**Figure 31. Likelihood that Respondent would Participate in a Volunteer Program to Pick up Litter in Wake County (Q14).**



Among those who reported that they would be somewhat likely to participate, most would do so about two times per year (Table 15). Those who report they would be very likely to participate would be willing to do so slightly more often—between two and twelve times per year. Respondents who are somewhat likely to volunteer express the most ambivalence about donating their time on a monthly basis.

**Table 15. Likelihood that Respondent would in a Volunteer Program to Pick up Litter in Wake County (Q14): by Anticipated Frequency of Volunteering (Q15).**

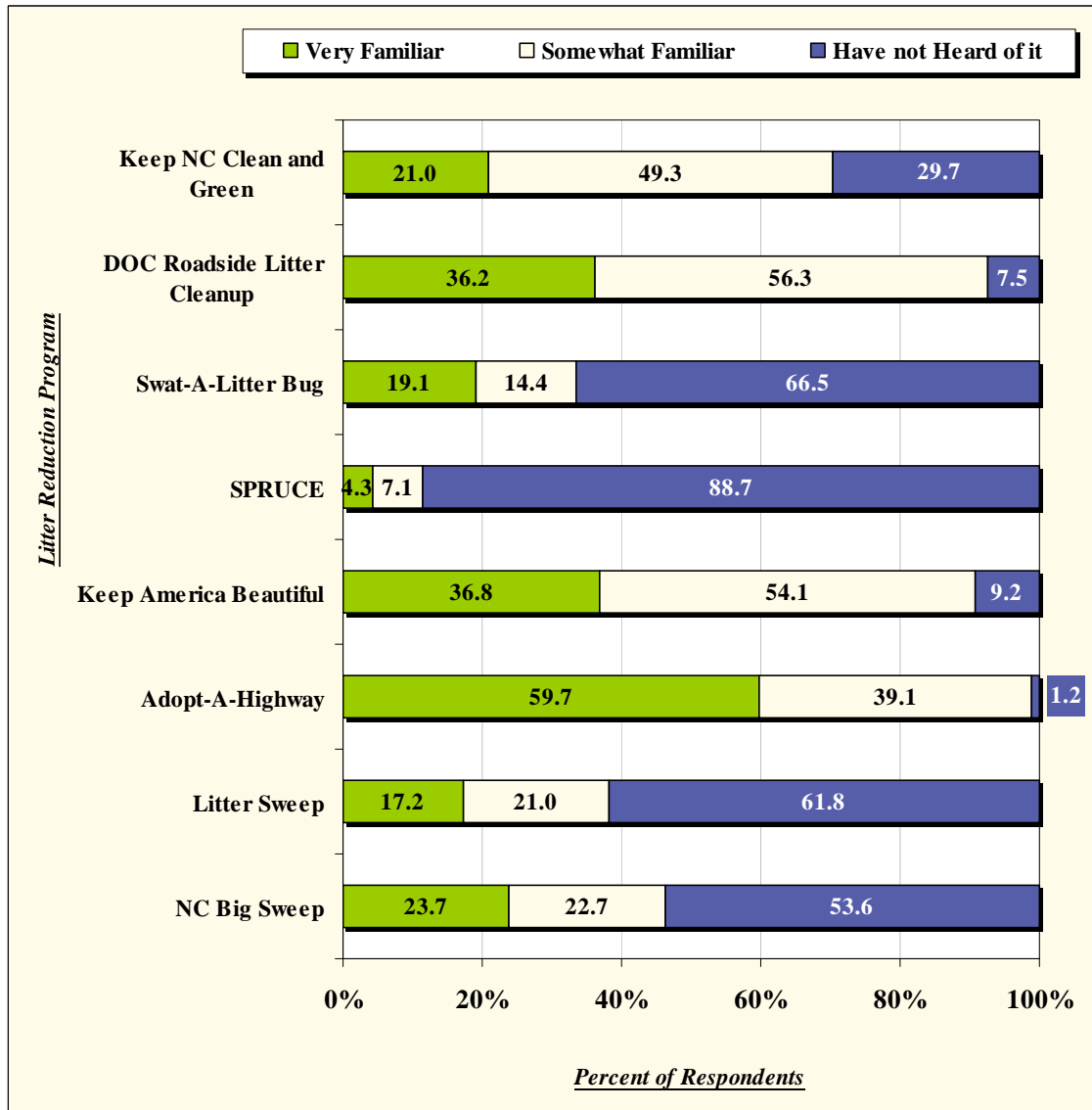
Likelihood of Volunteering	Anticipated Frequency of Volunteering				
	Row Percent ( <i>n</i> )				
	One Time a Year	Two Times a Year	More than Two Times a Year	Once a Month	Don't Know / Not Sure
Very Likely	7.9 (9)	27.2 (31)	38.6 (44)	21.9 (25)	4.4 (5)
Somewhat Likely	22.8 (48)	45.0 (95)	18.0 (38)	3.3 (7)	10.9 (23)

*N=325 respondents who are Somewhat Likely or Very Likely to volunteer.*

## VII. WEB SURVEY: PROGRAMS AND STRATEGIES FOR REDUCING LITTER

Close to sixty percent of respondents report that they are very familiar with the Adopt-a-Highway Program, the best known program listed. Less than twelve percent of respondents were familiar with SPRUCE, making this the least-known litter reduction campaign.

**Figure 32. Familiarity with Litter Reduction Programs (Q16a-h).**



*N* ranges from 467 to 486.

Twenty respondents listed other programs with which they are familiar (See Appendix D).

Table 16 reports information on respondent characteristics, litter reduction program familiarity, and likelihood of picking up litter. Figures 33 through 36 show graphic depictions of these relationships. Respondents report familiarity with a mean between 3.7 and 5.5 out of eight anti-litter programs, and a mean likelihood of picking up litter between 9.0 and 12.0 (out of a possible total of 12.0).

## VII. WEB SURVEY: PROGRAMS AND STRATEGIES FOR REDUCING LITTER

Among respondents in the web sample, men are slightly less familiar with litter reduction campaigns than women, but both sexes are equally likely to state that they would pick up litter in a variety of situations (figure 33).

Although respondents aged 18-20 are familiar with more litter reduction programs than other age groups, such individuals are least likely to be willing to pick up litter (Figure 34). Conversely, respondents aged 81 and older are among the least familiar with anti-litter campaigns, but report the greatest likelihood of picking up litter. Individuals aged 21 to 30 are least familiar with litter reduction campaigns.

**Table 16. Mean Number of Programs with which Respondent is Familiar (Q16a-h) and Mean Likelihood of Picking up Litter (Q13a-c): by Selected Respondent Characteristics.**

Characteristic	Mean Number with which Respondent is Familiar <sup>‡</sup>	Mean Likelihood of Picking up Litter <sup>‡‡</sup>
<b>Gender</b>		
‣ Female	4.8	10.9
‣ Male	4.5	10.9
<b>Mean Age in Years</b>		
‣ 18 to 20	5.5	9.0
‣ 21 to 30	3.7	10.4
‣ 31 to 40	4.7	10.9
‣ 41 to 50	4.9	11.0
‣ 51 to 60	4.9	10.8
‣ 61 to 70	4.6	11.1
‣ 71 to 80	4.4	10.9
‣ 81 and Older	4.0	12.0
<b>Educational Attainment</b>		
‣ High School/GED	5.3	10.7
‣ Some College	4.7	10.9
‣ College Graduate	4.9	11.0
‣ Graduate Degree	4.4	10.9
<b>Perceived Change in Amount of Litter</b>		
‣ More than Two Years Ago	4.9	11.0
‣ Less than Two Years Ago	4.2	10.5
‣ About the Same	4.6	10.8

<sup>‡</sup> "Familiar" includes respondents who stated that they are "Very Familiar" or "Somewhat Familiar" with a specific program. Includes programs listed on the survey (Q6a-h). Excludes programs volunteered by respondent. The maximum possible score on the familiarity scale is 8.

<sup>‡‡</sup> "Likelihood of Picking up Litter" is defined as sum of scores for questions 5a, 5b, and 5c:

"Something You Dropped,"

"Something Someone Else Dropped," and

"Something Someone Else Dropped on Your Property."

Based on a possible 12 point maximum score, as follows:

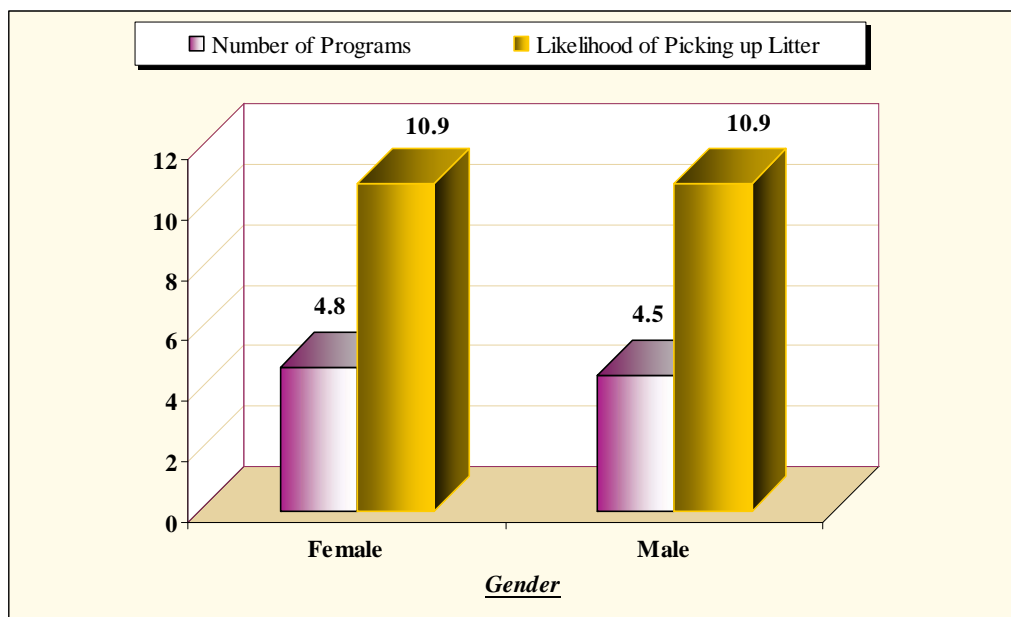
12= Very Likely; 9=Somewhat Likely; 6=Somewhat Unlikely; 3=Very Unlikely

## VII. WEB SURVEY: PROGRAMS AND STRATEGIES FOR REDUCING LITTER

Familiarity with litter reduction campaigns is not associated with education (Figure 35). Although respondents with a high school diploma or GED are most familiar with anti-litter programs, they are not as likely to pick up litter as more educated respondents. College graduates are most likely to agree that they would pick up trash in all situations combined, although by only a very small margin.

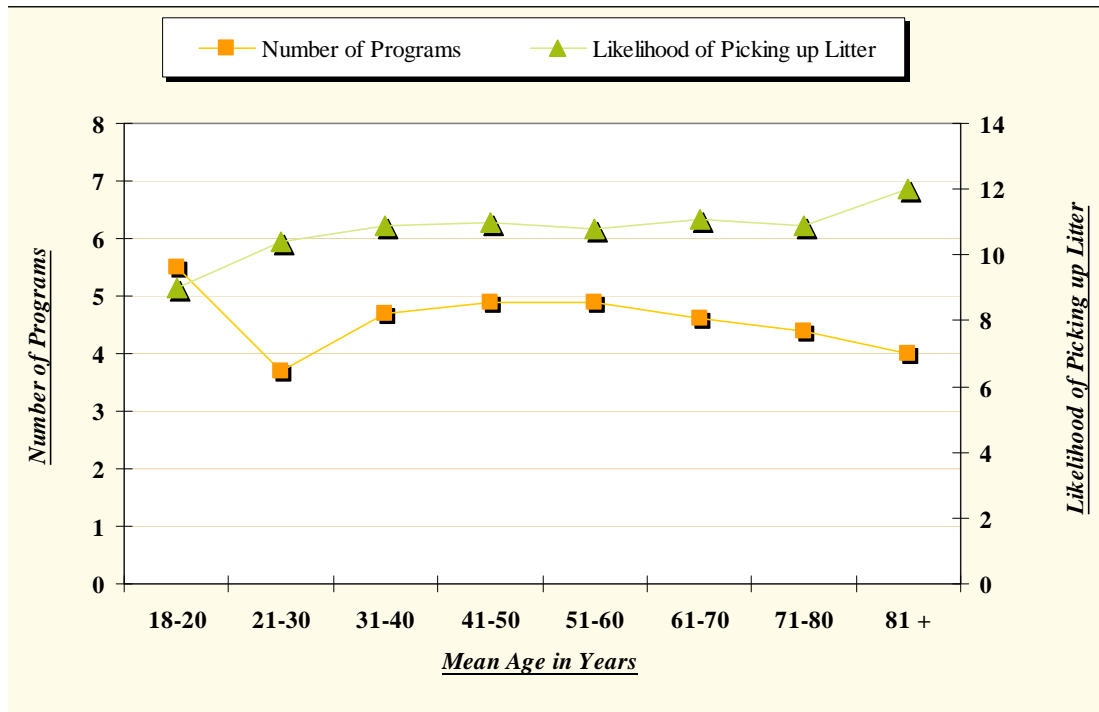
There is a linear relationship between familiarity with anti-litter programs and perception of change in amount of litter over time (Figure 36). Respondents who are aware of the greatest number of litter reduction programs are most likely to report that litter has increased over the last two years. Conversely, those familiar with the fewest programs perceive less litter today than two years ago. The likelihood that a respondent will pick up litter is likewise related to perception of change: those who believe that litter is more serious than in the past are most willing to pick up trash, whereas those who report that litter has remained the same or decreased are less likely to do so (Figure 36).

**Figure 33. Mean Number of Programs with which Respondent is Familiar (Q16a-h) and Mean Likelihood of Picking up Litter (Q13a-c): by Gender (Q28).**

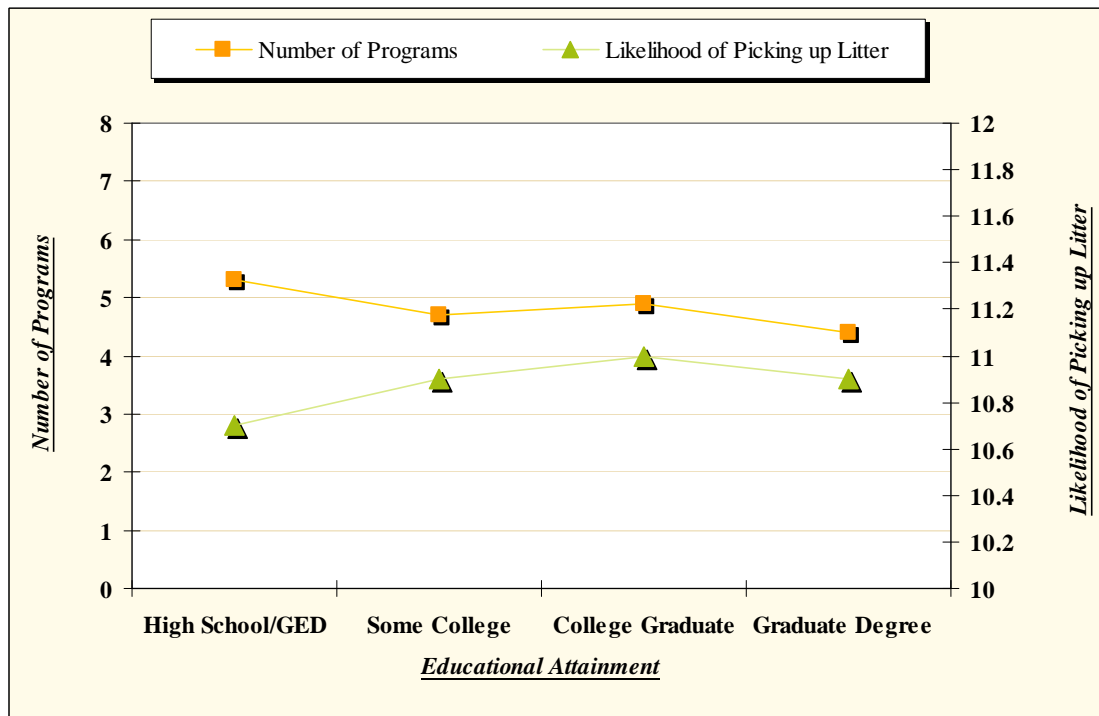


## VII. WEB SURVEY: PROGRAMS AND STRATEGIES FOR REDUCING LITTER

**Figure 34.** Mean Number of Programs with which Respondent is Familiar (Q16a-h) and Mean Likelihood of Picking up Litter (Q13a-c): by Mean Age in Years (Q29).



**Figure 35.** Mean Number of Programs with which Respondent is Familiar (Q16a-h) and Mean Likelihood of Picking up Litter (Q13a-c): by Educational Attainment (Q25).





## VII. WEB SURVEY: PROGRAMS AND STRATEGIES FOR REDUCING LITTER

**Figure 36. Mean Number of Programs with which Respondent is Familiar (Q16a-h) and Mean Likelihood of Picking up Litter (Q13a-c): by Perceived Change in Amount of Litter (Q3).**

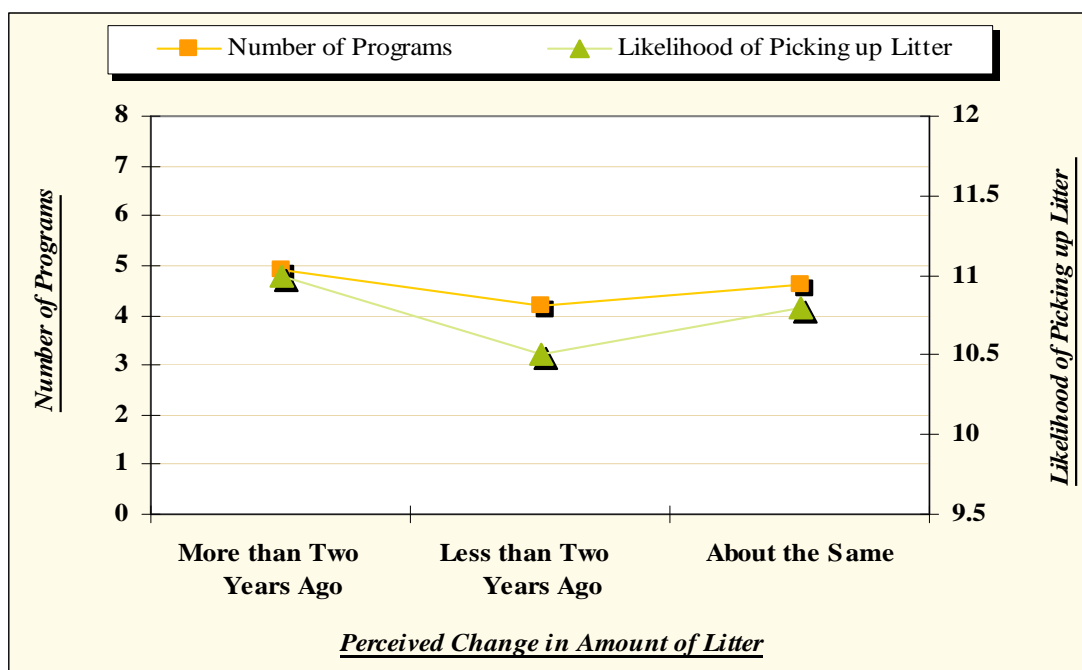


Table 17 shows the relationship between selected household characteristics, litter reduction program familiarity, and mean likelihood of picking up litter. Respondent familiarity with anti-litter programs ranges from 3.5 to 5.9, while the likelihood of picking up litter runs from 10.3 to 11.7.

Respondents living in owner occupied homes are familiar with more litter reduction programs and are more likely to pick up litter than their renting counterparts (Figure 37). This difference is statistically significant suggesting that property owners might receive more community-based communication and invest more in their neighborhoods than those who rent.

Respondents with more than four children are familiar with a greater number of anti-litter programs than others, and are slightly more likely to pick up trash than those with fewer children (Figure 38). These differences are not statistically significant.

Web respondents in the lowest income brackets report familiarity with the fewest litter reduction campaigns (Figure 39). This finding does not translate into behavior differences, however—the least affluent in the sample are *most* likely to report that they would pick up trash. Those who earn \$21,000-\$35,000 are least willing to pick up litter. Generally speaking, few trends are evident, and results are not statistically significant.

There are few differences in familiarity with litter reduction campaigns or willingness to pick up litter according to residence population (Figure 40). Whereas those in mid-sized communities are

## VII. WEB SURVEY: PROGRAMS AND STRATEGIES FOR REDUCING LITTER

least familiar with programs and those in relatively small towns are most likely to pick up litter, differences across the groups are small.

**Table 17. Mean Number of Programs with which Respondent is Familiar (Q16a-h) and Mean Likelihood of Picking up Litter (Q13a-c): by Selected Household Characteristics.**

Characteristic	Mean Number with which Respondent is Familiar <sup>‡</sup>	Mean Likelihood of Picking up Litter <sup>‡‡</sup>
<b>Type Household</b>		
‣ Owner Occupied	4.8	10.9**
‣ Rental*	4.3	10.4**
<b>Children in Household</b>		
‣ None	4.6	10.8
‣ One	4.5	11.0
‣ Two or Three	5.0	10.9
‣ Four or More	5.9	11.1
<b>Household Income</b>		
‣ Under \$20,000	3.7	11.7
‣ \$21,000 to \$35,000	3.5	10.3
‣ \$36,000 to \$45,000	4.1	10.6
‣ \$46,000 to \$60,000	5.1	11.1
‣ \$61,000 to \$75,000	5.0	10.9
‣ \$76,000 to \$90,000	4.9	10.8
‣ \$91,000 to \$105,000	4.6	10.8
‣ \$106,000 and greater	4.8	11.0
<b>Residence Population</b>		
‣ Less than 5,000	4.9	11.0
‣ 5,000 to 14,999	4.9	11.2
‣ 15,000 to 24,999	3.8	10.6
‣ 25,000 to 49,999	4.4	10.9
‣ 100,000 to 199,999	4.7	10.8
‣ 400,000 to 499,999	4.9	11.0

<sup>‡</sup> "Familiar" includes respondents who stated that they are "Very Familiar" or "Somewhat Familiar" with a specific slogan

<sup>‡‡</sup> "Litter" is defined as sum of scores for questions 5a, 5b, and 5c:

- "Something You Dropped,"
- "Something Someone Else Dropped," and
- "Something Someone Else Dropped on Your Property."

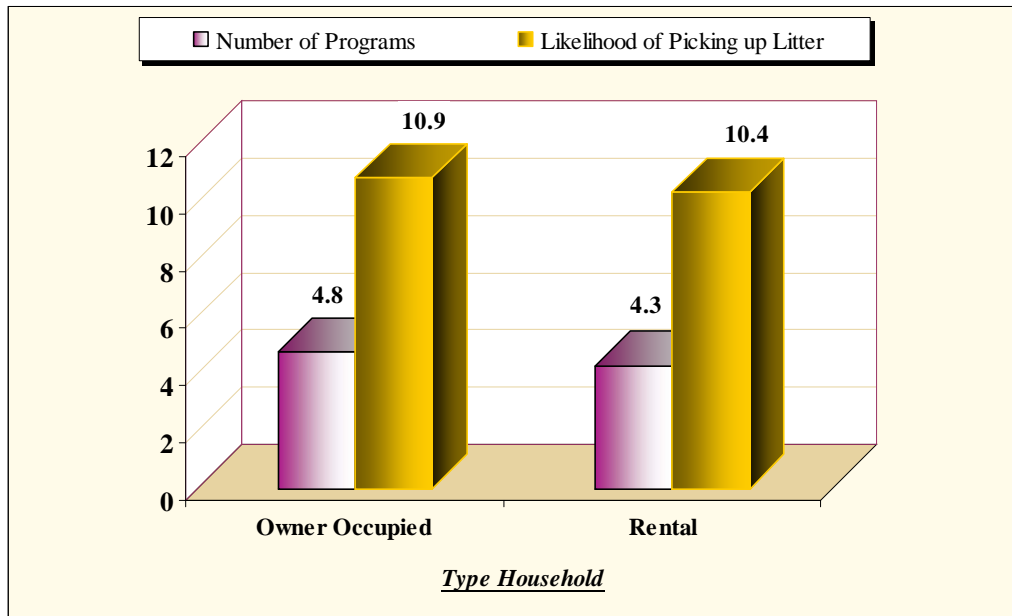
Based on a 4-point scale as follows: Very Likely=4; Somewhat Likely=3; Somewhat Unlikely=2; Very Unlikely=1

\*Includes Residence Hall (n=1)

\*\*Owner occupied is significantly different from rental (Row Means Score Test, <0.05 level)

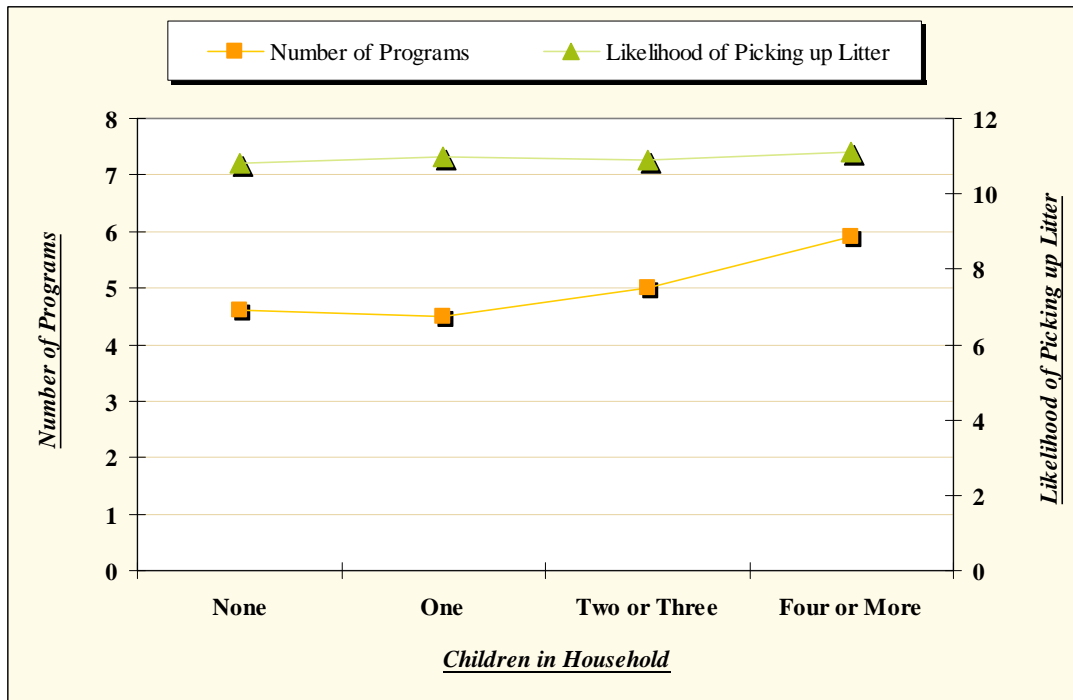
## VII. WEB SURVEY: PROGRAMS AND STRATEGIES FOR REDUCING LITTER

**Figure 37. Mean Number of Programs with which Respondent is Familiar (Q16a-h) and Mean Likelihood of Picking up Litter (Q13a-c): by Type Household (Q30).**



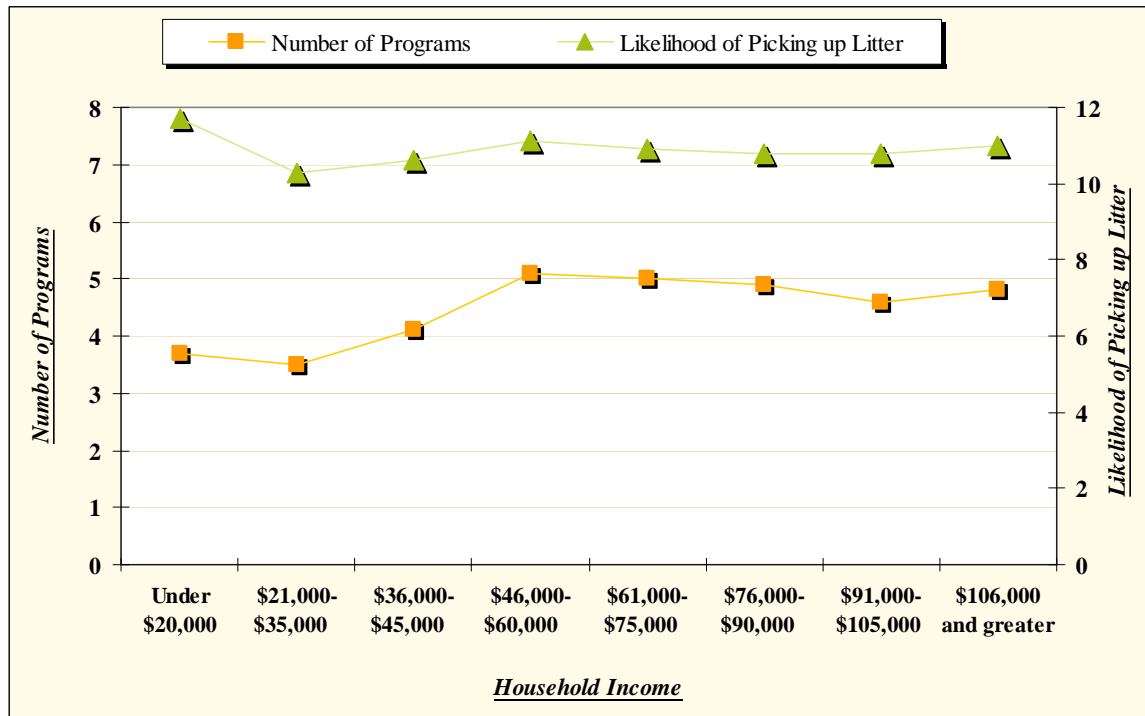
*Owner occupied is significantly different from rental (Row Means Score Test, <0.05 level)*

**Figure 38. Mean Number of Programs with which Respondent is Familiar (Q16a-h) and Mean Likelihood of Picking up Litter (Q13a-c): by Number of Children in Household (Q31).**

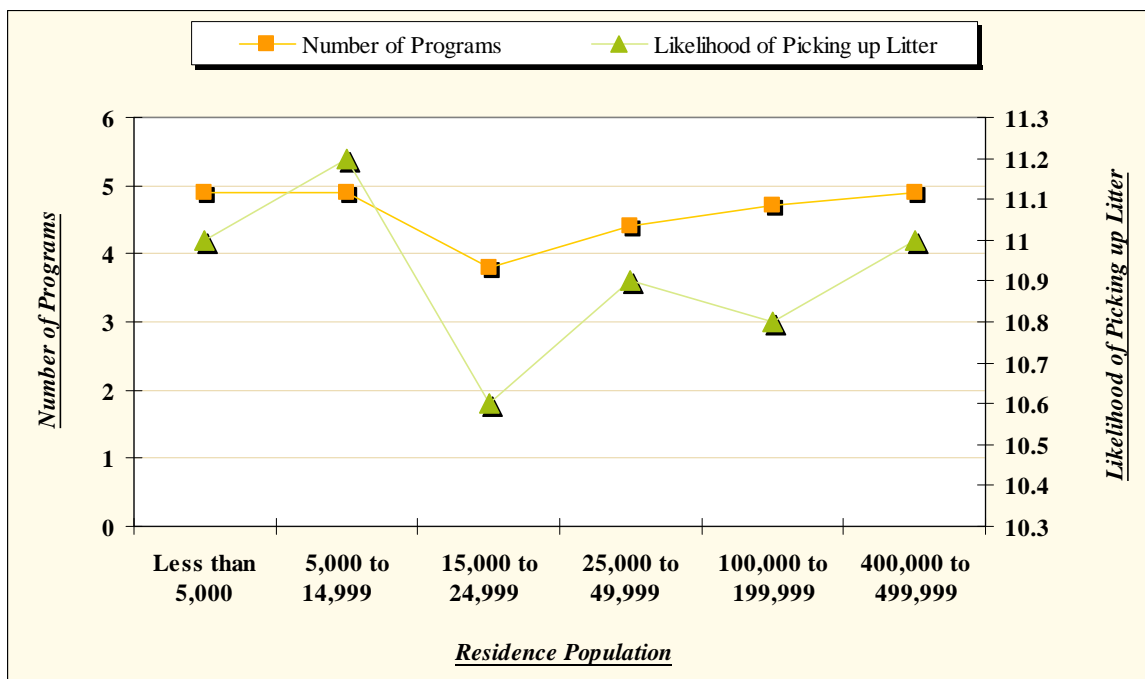


## VII. WEB SURVEY: PROGRAMS AND STRATEGIES FOR REDUCING LITTER

**Figure 39. Mean Number of Programs with which Respondent is Familiar (Q16a-h) and Mean Likelihood of Picking up Litter (Q13a-c): by Household Income (Q32).**



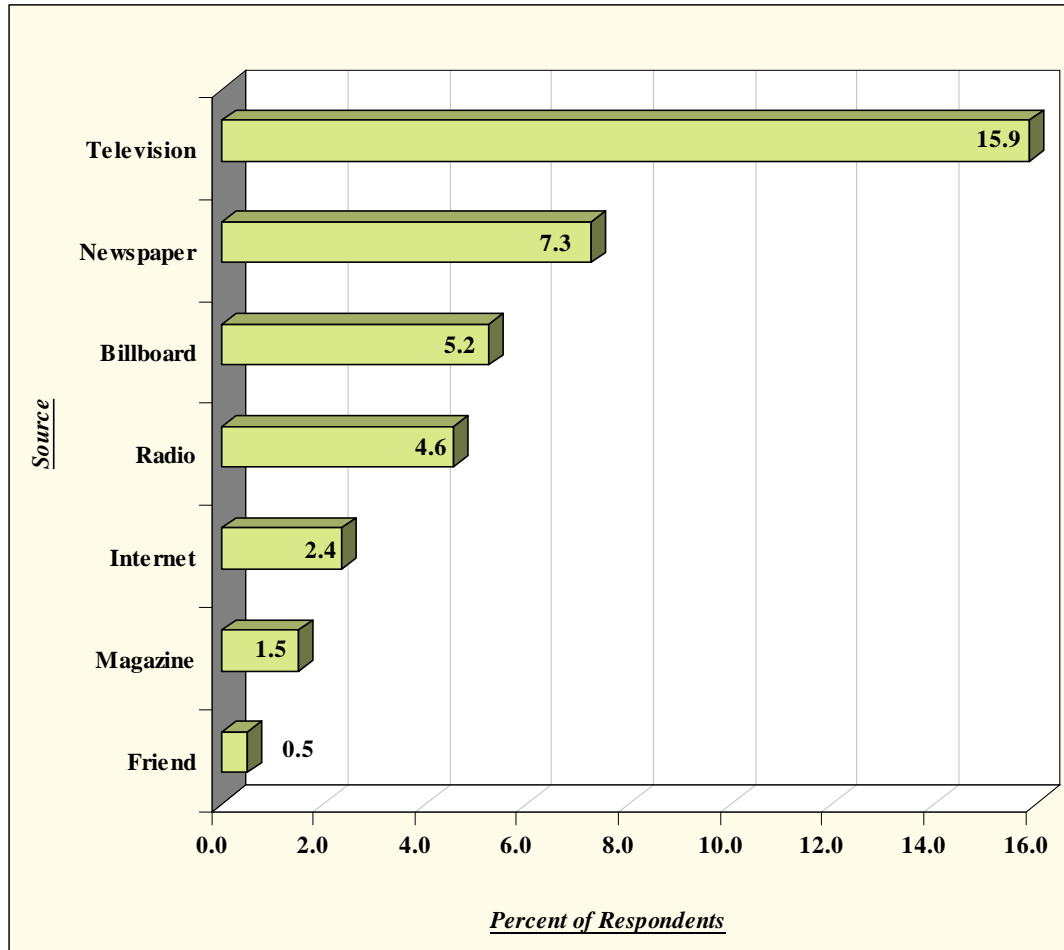
**Figure 40. Mean Number of Programs with which Respondent is Familiar (Q16a-h) and Mean Likelihood of Picking up Litter (Q13a-c): by Residence Population (Q26).**



## VII. WEB SURVEY: PROGRAMS AND STRATEGIES FOR REDUCING LITTER

Among those respondents who recalled specific anti-litter slogans, the overwhelming majority identified television as the source (Figure 41). About half as many read slogans in newspapers and approximately one-third as many read slogans on billboards. The fewest respondents report learning anti-litter slogans from friends.

**Figure 41. Source of Recalled Slogan: Percent of all Sources (Q21).**

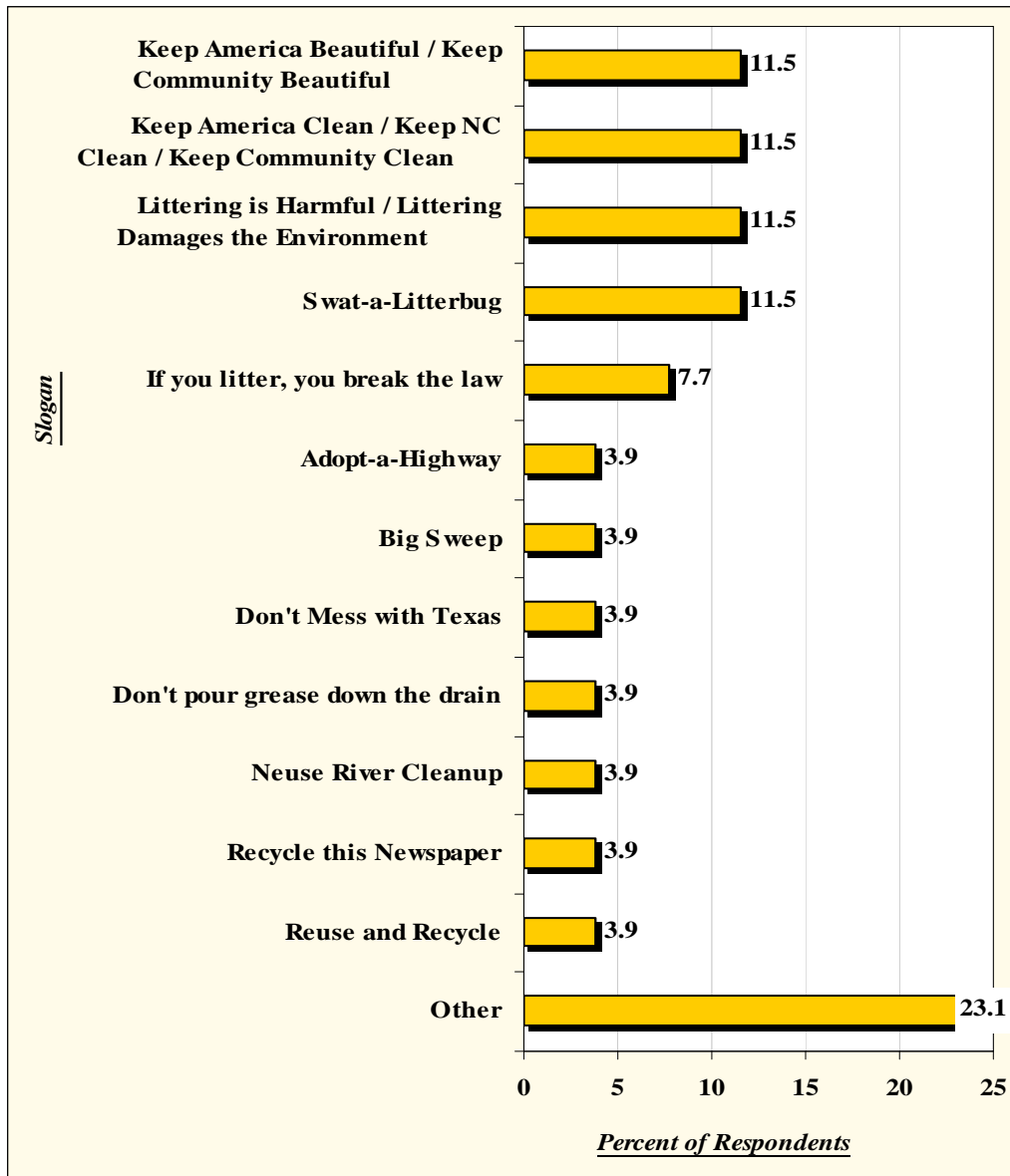


*See Appendix D for specific portions of slogans recalled by individual respondents.*

Although many respondents had a difficult time recalling specific anti-litter slogans, there was a great deal of variation in those reported (Figure 42). Respondents most commonly identified variants of Keep America Beautiful, Keep America/NC Clean, Littering is Harmful, and Swat-a-Litterbug. The majority of respondents listed slogans not identified by the researchers.

## VII. WEB SURVEY: PROGRAMS AND STRATEGIES FOR REDUCING LITTER

Figure 42. Recalled Slogans (Q22).

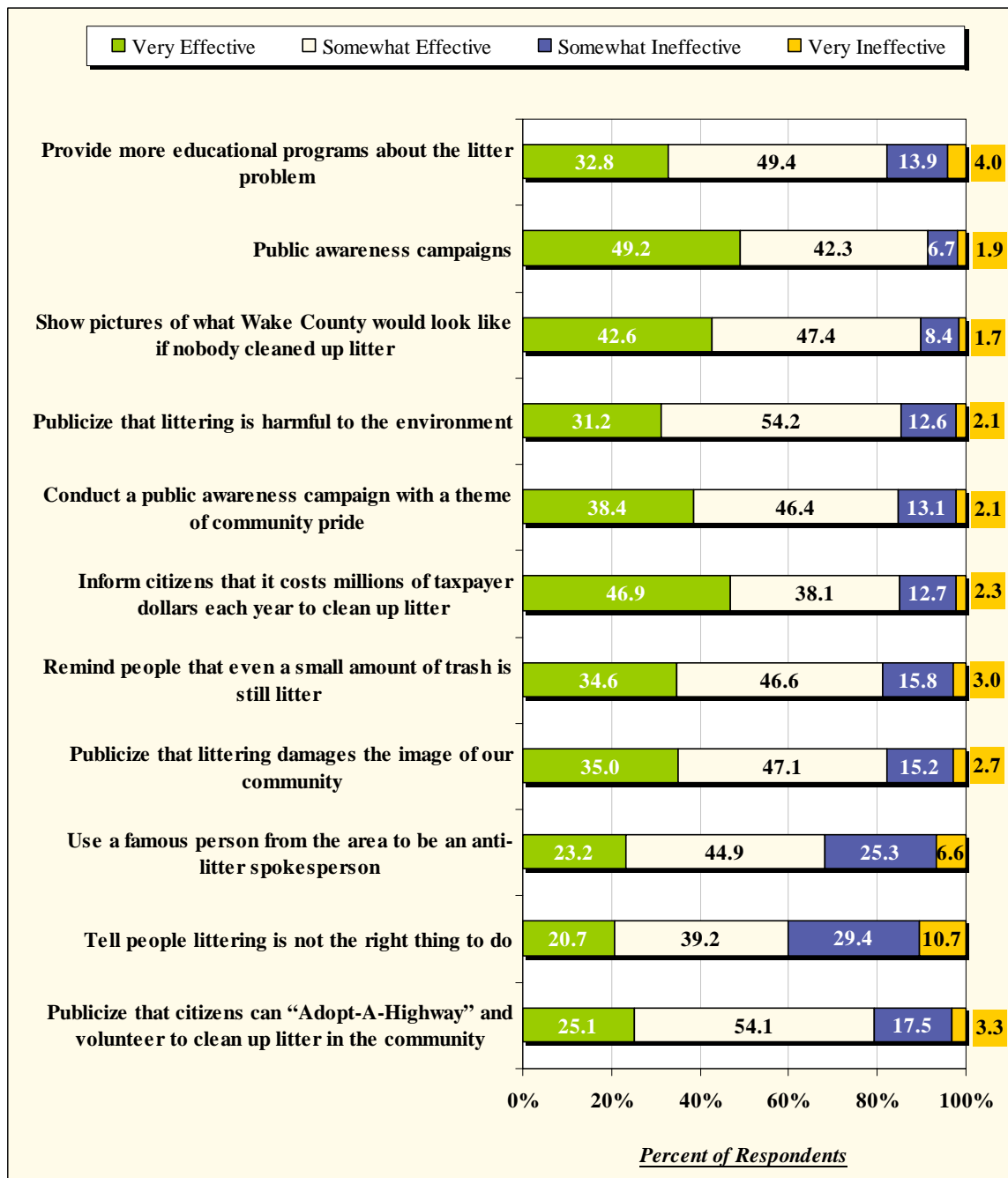


*N=26 respondents who recalled one or more slogans.*

When asked about the effectiveness of litter reduction educational programs, about half of all respondents identify public awareness campaigns as very effective, followed by informing citizens of clean-up costs and displaying photos of how Wake County would look without litter clean-up (Figure 43). Respondents have least confidence in the effectiveness of telling others that littering is wrong and using local celebrities to speak out against littering.

## VII. WEB SURVEY: PROGRAMS AND STRATEGIES FOR REDUCING LITTER

**Figure 43. Effectiveness of Educational / Public Awareness Programs as Strategies for Reducing Littering (Q18, Q19).**

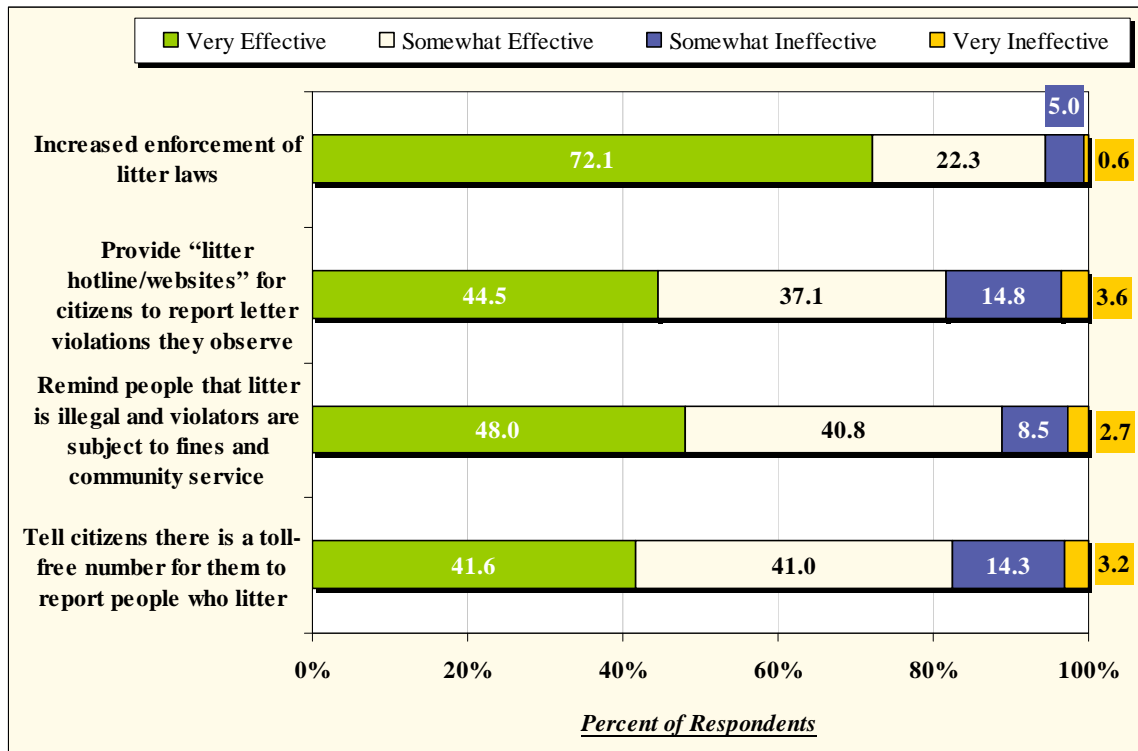


*N ranges from 462 to 480.*

## VII. WEB SURVEY: PROGRAMS AND STRATEGIES FOR REDUCING LITTER

Respondents share more consensus on the effectiveness of legal solutions for reducing littering (Figure 44). About three-fourths of the sample report that increased enforcement of litter laws can curb littering. Forty percent or more of the respondents cited other strategies to be very effective: providing avenues for citizens to report litterers, reminding citizens of the legal consequences of littering, and publicizing a toll-free litter reporting line. Of these strategies, respondents have the least confidence in reporting avenues such as hotlines and toll-free numbers.

**Figure 44. Effectiveness of Legal and Legal Education Solutions as Strategies for Reducing Littering (Q18, Q19).**



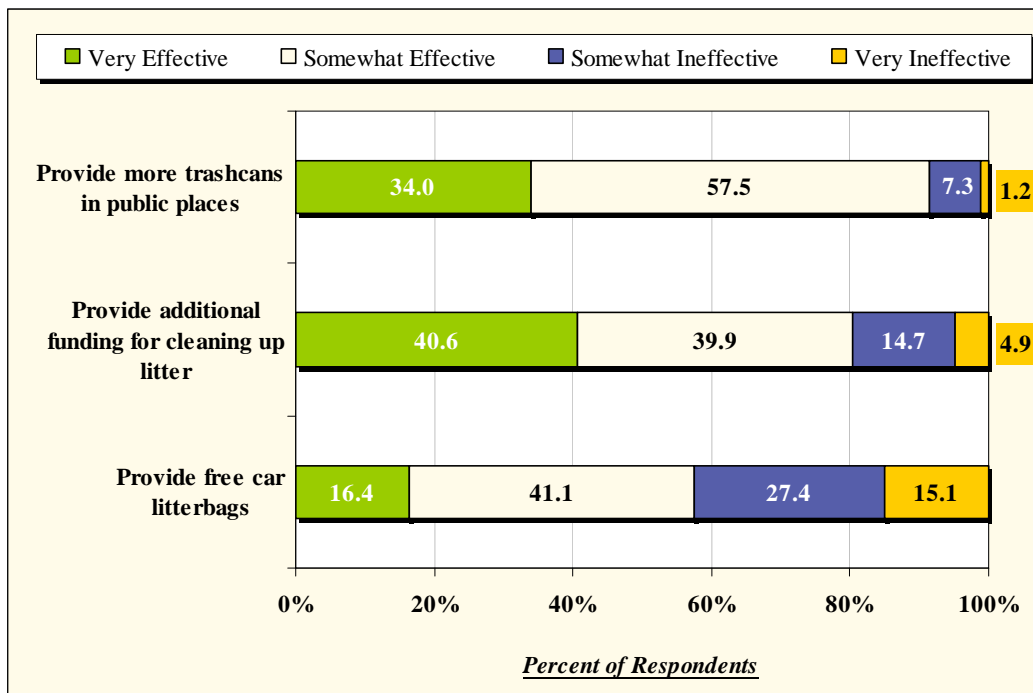
*N ranges from 474 to 481.*



## VII. WEB SURVEY: PROGRAMS AND STRATEGIES FOR REDUCING LITTER

Among funding or amenity strategies for reducing litter, about forty percent of respondents report that providing additional monies for clean-up is very effective. Providing more trashcans receives the most widespread support for funding/amenity strategies, viewed as either very or somewhat effective by over ninety percent of respondents. Respondents are more ambivalent about providing car trash bags to citizens as an effective litter reduction strategy.

**Figure 45. Provision of Funding or Amenities as Strategies for Reducing Littering (Q18, Q19).**

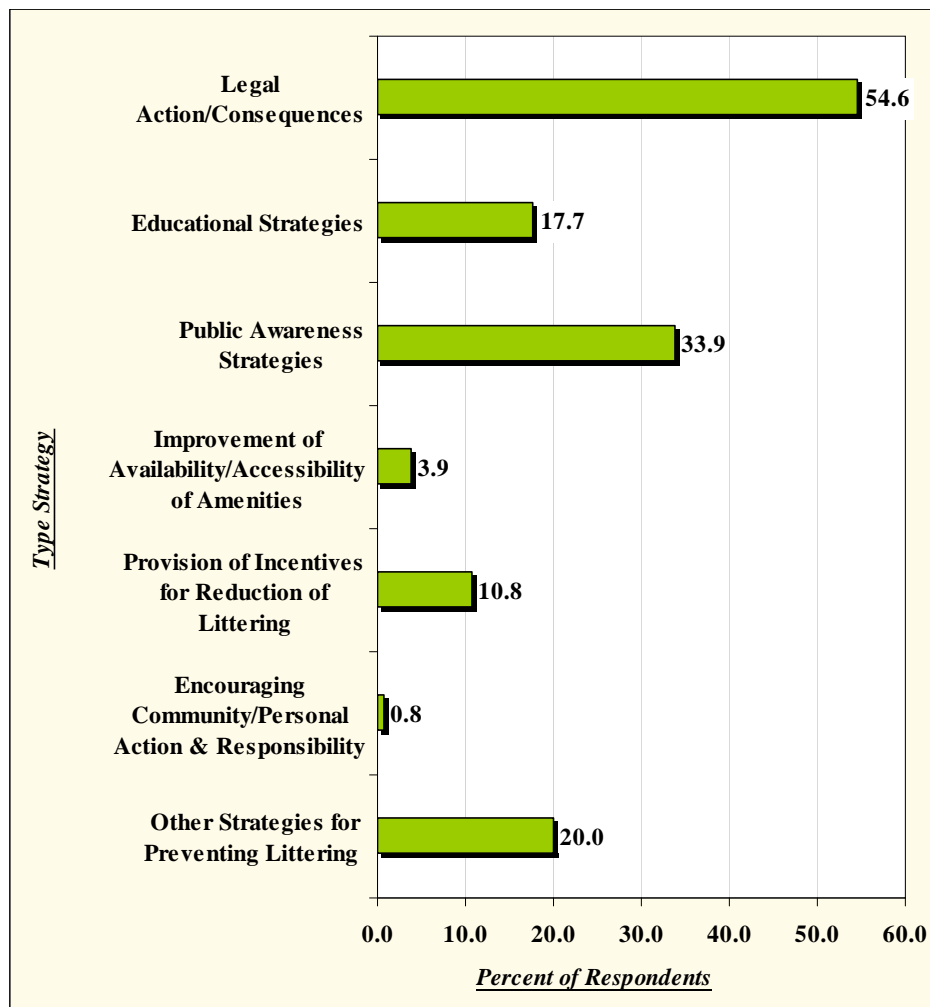


*N ranges from 457 to 482.*

## VII. WEB SURVEY: PROGRAMS AND STRATEGIES FOR REDUCING LITTER

In sum, like the telephone respondents, web respondents also regard legal solutions to litter reduction as most effective (Figure 46). Over half of the comments (made by 130 respondents) cited legal strategies for reducing or preventing littering. Half of the respondents listed strategies that pertain to educational or public awareness techniques. Increasing the accessibility and availability of amenities, provision of incentives, and stressing personal or community responsibility or action were cited by fewer respondents. (A complete listing of anti-litter approaches identified by respondents is shown in *Appendix D*.)

**Figure 46. Additional Strategies\* for Reducing Littering Suggested by Respondents (Q18h, Q19l).**



*N=130 respondents who listed additional strategies in Q18 or Q19.*

*See Appendix D for a detailed listing of respondent comments.*

*\*Includes strategies rated as Very or Somewhat Effective.*

## VIII. SUMMARY OF FINDINGS

### A. SAMPLE DIFFERENCES

The findings presented in this report represent points-of-view held by two distinct respondent groups. The telephone survey sample is comprised of a representative sample of Wake County households during the summer of 2010. Adult household members (age eighteen and older), but not necessarily heads-of-household, were eligible to be interviewed. The telephone survey sample is evenly split between male and female respondents ranging in age from eighteen to ninety-one years. Most respondents are college graduates and have resided in Wake County for over ten years.

The Internet sample consists of persons who volunteered to complete the survey. These individuals learned about the survey through the Wake County website, local environmental and litter-related websites, and through several civic groups in the county. It may be assumed that the web sample represents respondents who are more actively involved in the community and may have particular interest in civic activities as well as environmental issues. Unlike the phone sample, the web sample is predominantly female. Although age and years residing in Raleigh showed little variation across the samples, those who completed the web survey have higher educational levels. Salient differences in the demographic characteristics of respondents in the two samples are shown in Tables 18.

**Table 18. Respondent Sociodemographic Characteristics.**

Characteristic	Sample	
	Phone	Web
<b>Gender</b>		
‣ Female	50.8	63.9
‣ Male	49.2	36.1
<b>Age in Years</b>		
‣ Mean	49.5	51.1
‣ Median	49.0	52.0
‣ Minimum / Maximum	18 / 91	18 / 86
<b>Educational Attainment</b>		
‣ Some High School or Less	3.8	
‣ High School Graduate/GED	12.8	4.8
‣ Some College	24.2	17.1
‣ College Graduate	32.0	47.6
‣ Graduate School or Higher	27.3	30.6
<b>Years Residing in Wake County</b>		
‣ Less than two years	5.2	2.2
‣ 2-4 years	14.7	10.6
‣ 5-10 years	16.6	21.4
‣ More than 10 years	63.6	65.9

## VIII. SUMMARY OF FINDINGS

Table 19 describes the household characteristics of each sample. The Internet sample consists of a greater proportion of respondents living in owner-occupied residences than the telephone sample. Internet respondents, in general, are members of households with fewer minor children and higher household incomes and, on average, live in more highly populated areas.

**Table 19. Respondent Household Characteristics.**

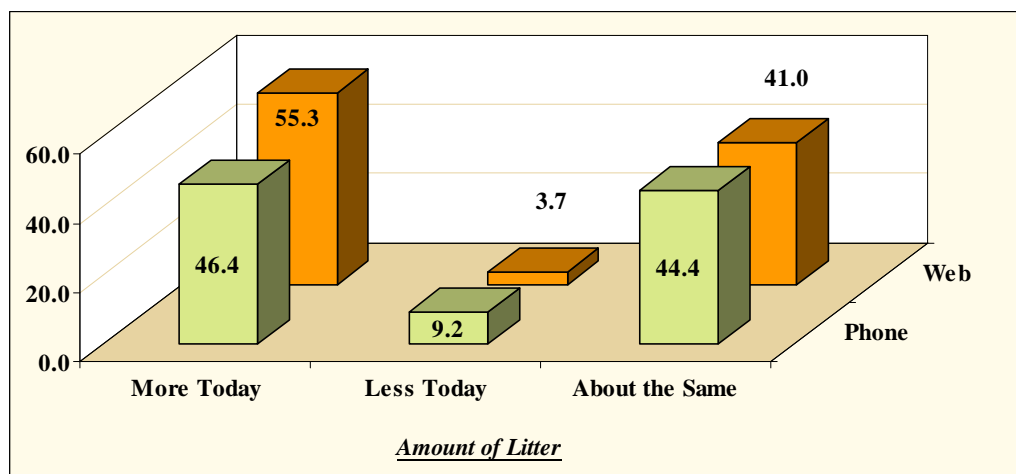
Characteristic	Sample	
	Phone	Web
<b>Household Type</b>		
‣ Owner Occupied	81.7	93.3
‣ Renter	18.3	6.7
<b>Children in Household</b>		
‣ None	57.5	69.2
‣ One	22.2	12.8
‣ Two to Three	18.4	16.4
‣ Four or More	1.9	1.7
<b>Household Income</b>		
‣ Under \$20,000	7.0	0.7
‣ \$21,000 to \$35,000	13.2	5.0
‣ \$36,000 to \$45,000	9.7	9.7
‣ \$46,000 to \$60,000	13.2	12.5
‣ \$61,000 to \$75,000	10.9	12.5
‣ \$76,000 to \$90,000	11.7	14.4
‣ \$91,000 to \$105,000	15.3	13.2
‣ \$106,000 and greater	19.1	32.1
<b>Residence Population Characteristics</b>		
‣ Mean Number*	204,820	248,918
‣ Median	136,637	405,612

\* 2009 Population Estimates: US Census of Population, American Fact Finder ([http://factfinder.census.gov/servlet/SAFFPopulation?\\_submenuId=population\\_0&\\_sse=on](http://factfinder.census.gov/servlet/SAFFPopulation?_submenuId=population_0&_sse=on))

Just as sociodemographic variables and household characteristics vary across the samples, qualitative differences in findings are evident. Web respondents are more likely to report that litter increased over the last two years than those who responded to the telephone survey (Figure 47). Fewer web than phone respondents report that there is less litter today than two years ago. Such differences suggest that those who elected to take the web survey are more concerned about littering than those in the general population.

## VIII. SUMMARY OF FINDINGS

**Figure 47. Perception of Change in Litter in Wake County in Last Two Years: By Sample.**



Findings based on respondent's residence (Table 20) support this conclusion. Internet respondents representing each of the population categories are more likely than their telephone sample counterparts to perceive a greater littering problem today than previously. Conversely, telephone sample members, regardless of the population size of their hometown, are more likely to view the situation as 'about the same' as two years ago.

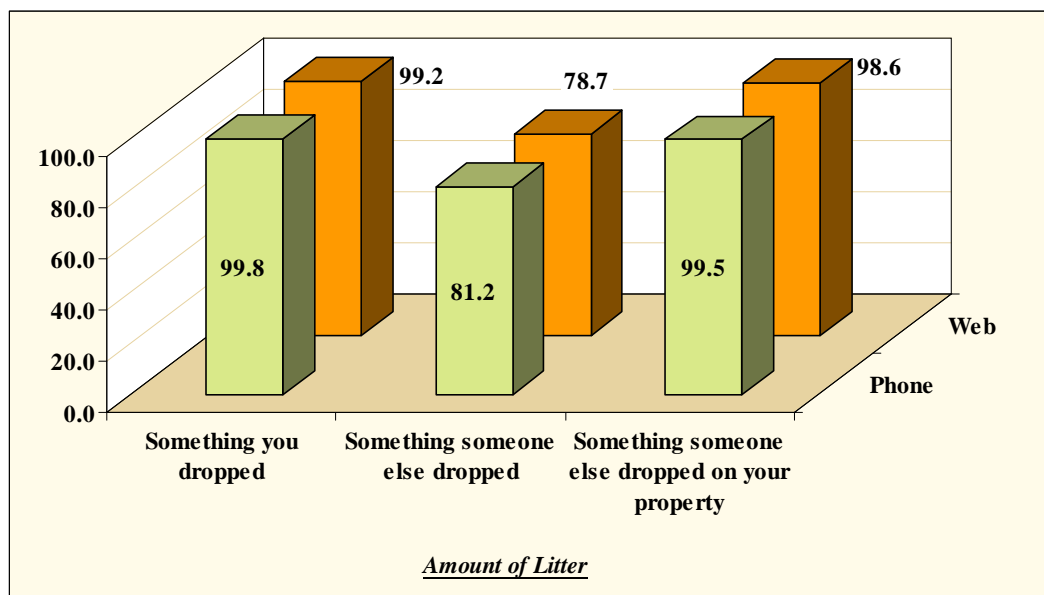
**Table 20. Mean Number of Programs with which Respondent is Familiar (Q16a-h) and Mean Likelihood of Picking up Litter (Q13a-c): by Selected Household Characteristics.**

Sample / Residence Population Size	Amount of Litter		
	More Today	Less Today	About the Same
<b>TELEPHONE</b>			
➤ Less than 5,000	66.7		33.3
➤ 5,000 to 14,999	54.1	8.1	37.8
➤ 15,000 to 24,999	44.1	8.8	47.1
➤ 25,000 to 49,999	43.2	13.5	43.2
➤ 100,000 to 199,999	37.9	3.5	58.6
➤ 400,000 to 499,999	47.4	10.3	42.3
<b>INTERNET</b>			
➤ Less than 5,000	75.0		25.0
➤ 5,000 to 14,999	63.2		36.8
➤ 15,000 to 24,999	57.1	14.3	28.6
➤ 25,000 to 49,999	61.7	3.3	35.0
➤ 100,000 to 199,999	48.3	5.2	46.6
➤ 400,000 to 499,999	62.2	2.1	35.7

## VIII. SUMMARY OF FINDINGS

Although web respondents may regard littering as a more pressing problem than telephone respondents, the two groups report similar likelihood of picking up litter in various situations (Figure 48). Based on self-assessments, telephone respondents are actually slightly more likely than web respondents to state that they would pick up something they have dropped, something someone else dropped, or litter someone dropped on their property. The extent to which respondents' anticipated behavior is likely to correspond to real behavior cannot be determined from the surveys.

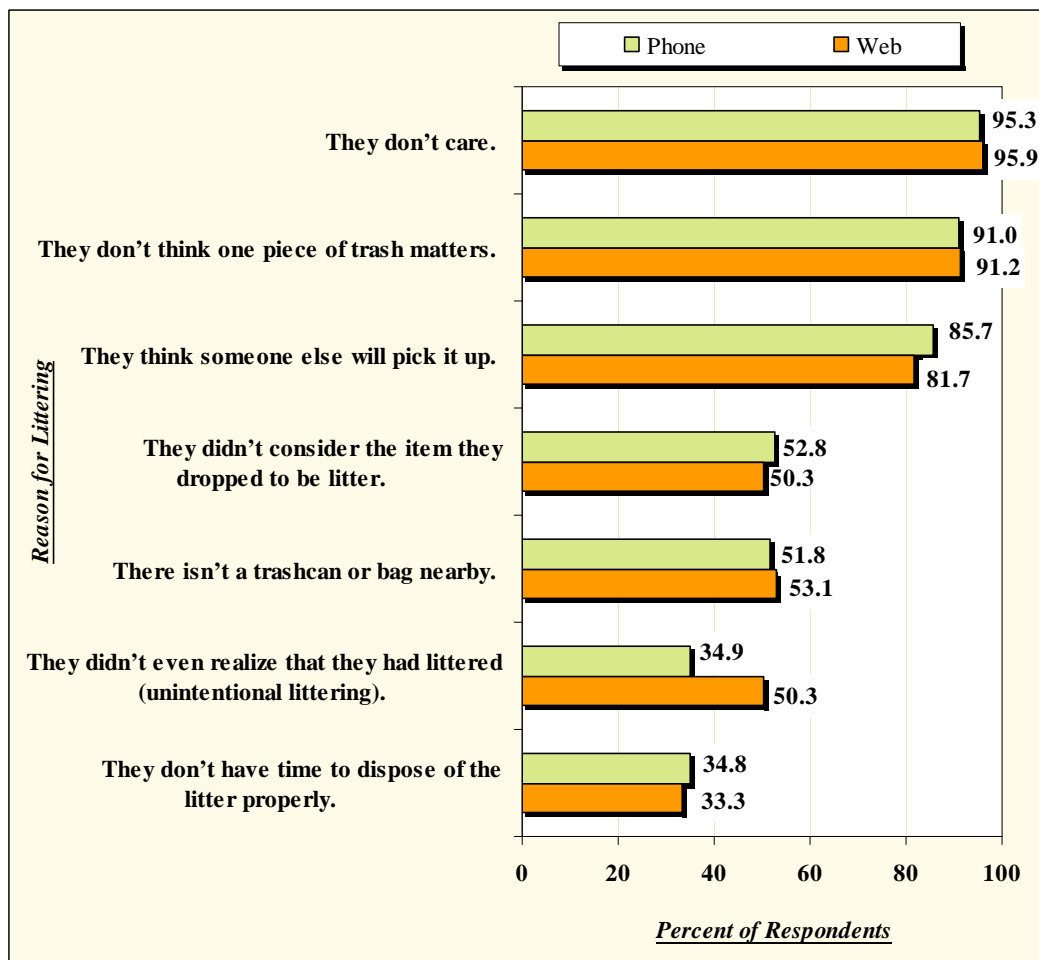
**Figure 48. Likelihood of Picking up Litter in Specific Situations: By Sample.**



## VIII. SUMMARY OF FINDINGS

Figure 49 shows the percent of respondents, by sample, who agree or strongly agree with specific statements about why people litter. Phone and web respondents tend to believe that people litter for largely similar reasons, although web respondents are much more likely than phone respondents to believe that individuals litter unintentionally. Phone respondents more commonly believe that litterers think someone else will pick up their trash, although this difference is much more modest than that associated with unintentional littering. Both groups strongly believe that others litter because they don't care and that they think one piece of trash doesn't matter.

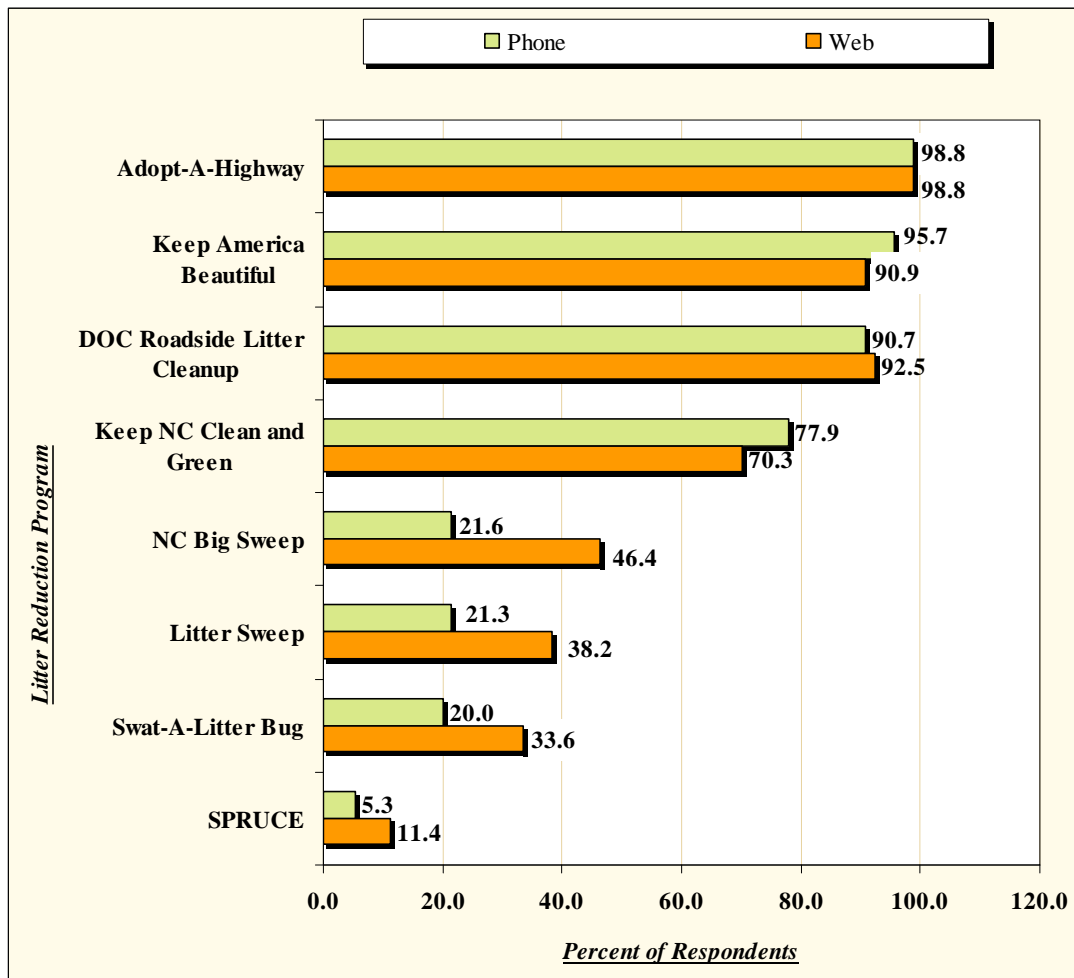
**Figure 49. Perceived Reasons for Littering: By Sample.**



## VIII. SUMMARY OF FINDINGS

Self-selected web respondents generally report greater familiarity with litter reduction programs than phone respondents (Figure 50). In several cases, web respondents average twice the awareness of phone respondents. Those surveyed by web are much more familiar with *Swat-a-Litter Bug*, *SPRUCE*, *Litter Sweep*, and *NC Big Sweep* than phone respondents. Phone respondents, however, named *Keep NC Clean and Green* and *Keep America Beautiful* slightly more often than web respondents.

Figure 50. Familiarity with Litter Reduction Programs: By Sample.

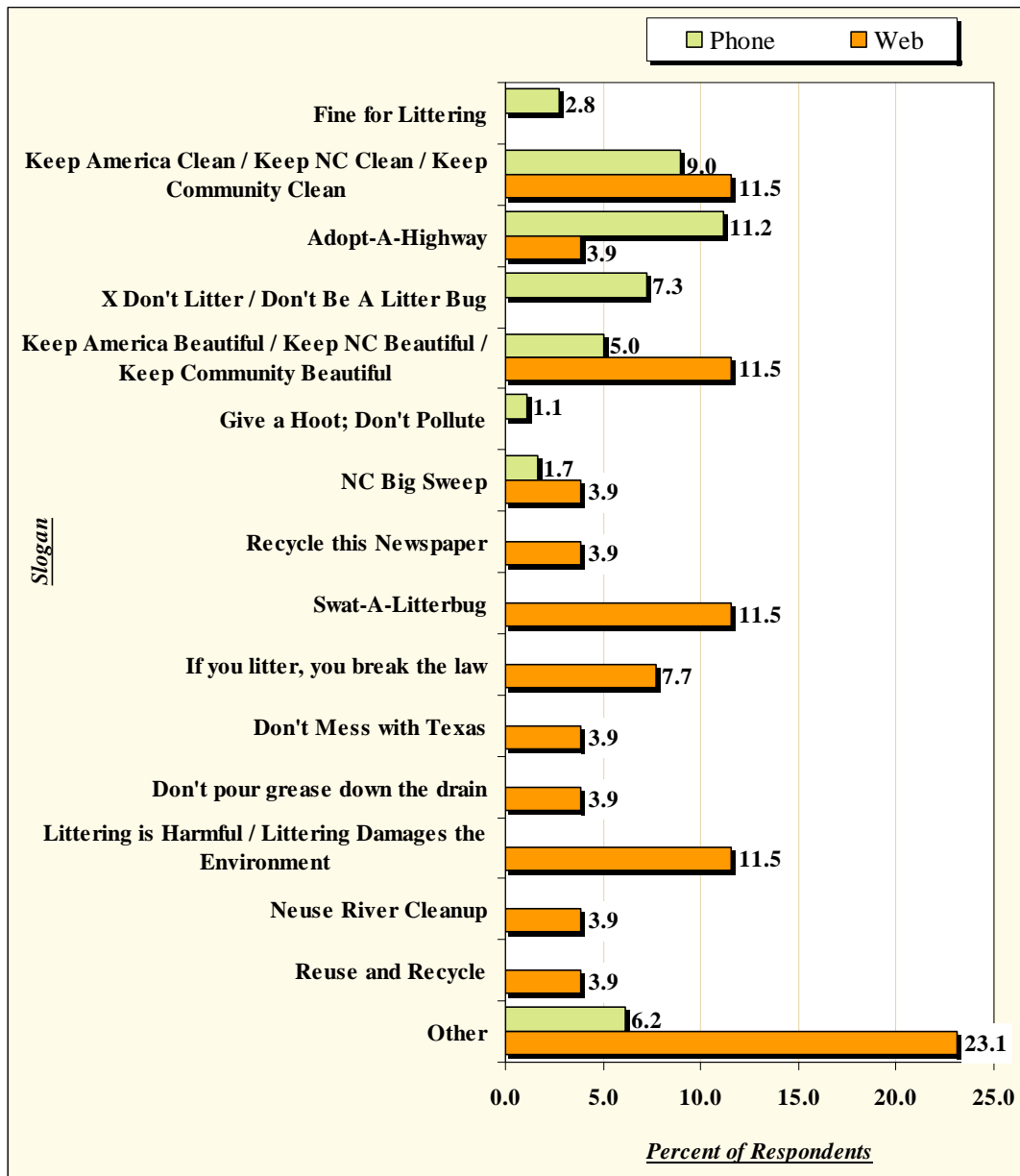




## VIII. SUMMARY OF FINDINGS

On average, web respondents are more likely to recall the content of anti-littering slogans than phone respondents. In fact, of the sixteen slogans identified, eight were mentioned only by individuals who completed the web survey. Exceptions include slogans about littering fines, *Adopt-a-Highway*, *Don't Litter/Don't be a Litter Bug*, and *Give a Hoot-Don't Pollute*.

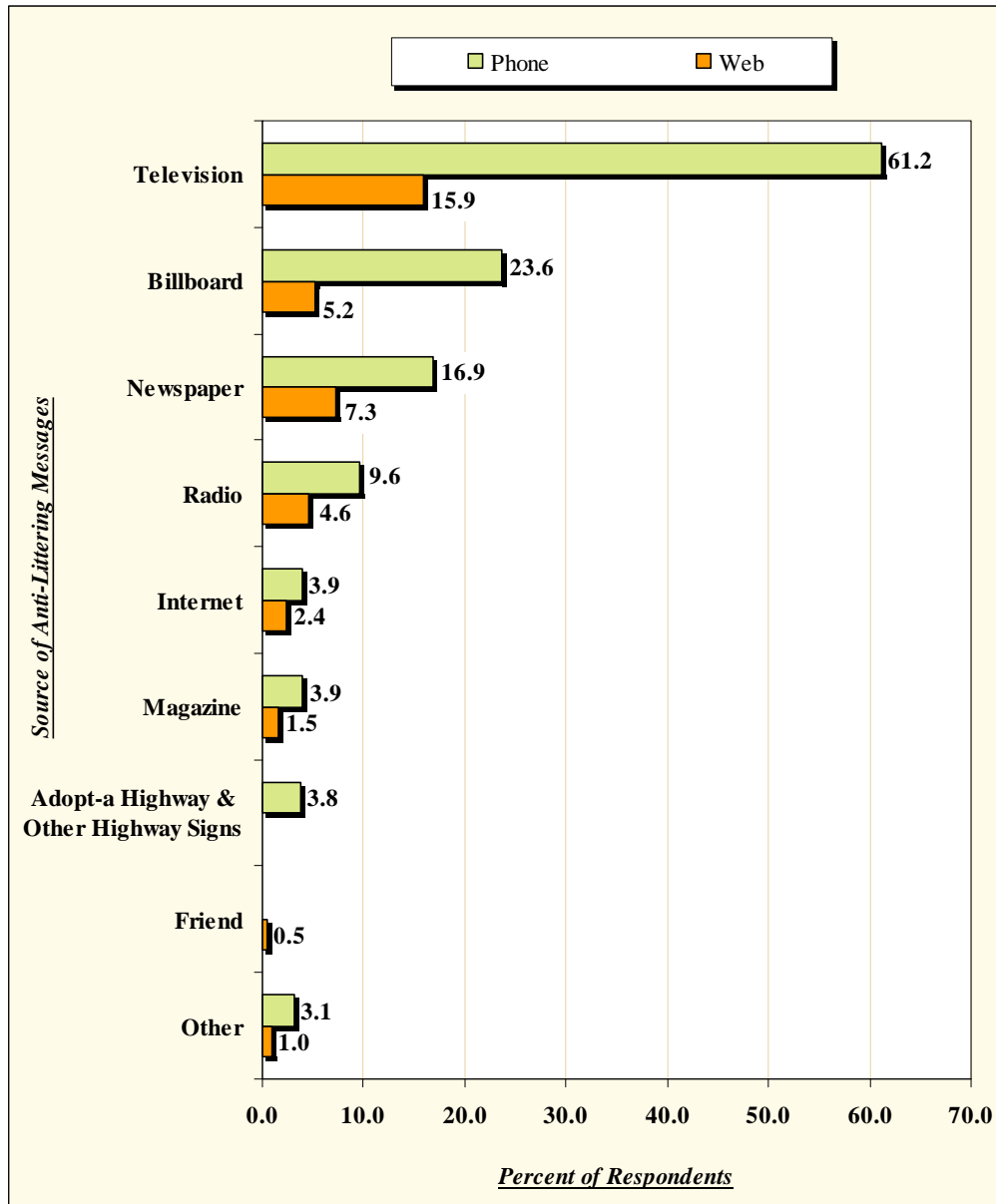
**Figure 51. Recall of Anti-Littering Slogans: By Sample.**



## VIII. SUMMARY OF FINDINGS

Members of both samples report television as the most common source of litter reduction information (Figure 52). Yet phone respondents are much more likely to report consuming anti-littering messages via radio, newspaper, and internet than phone respondents.

Figure 52. Source of Recalled Slogan: By Sample.



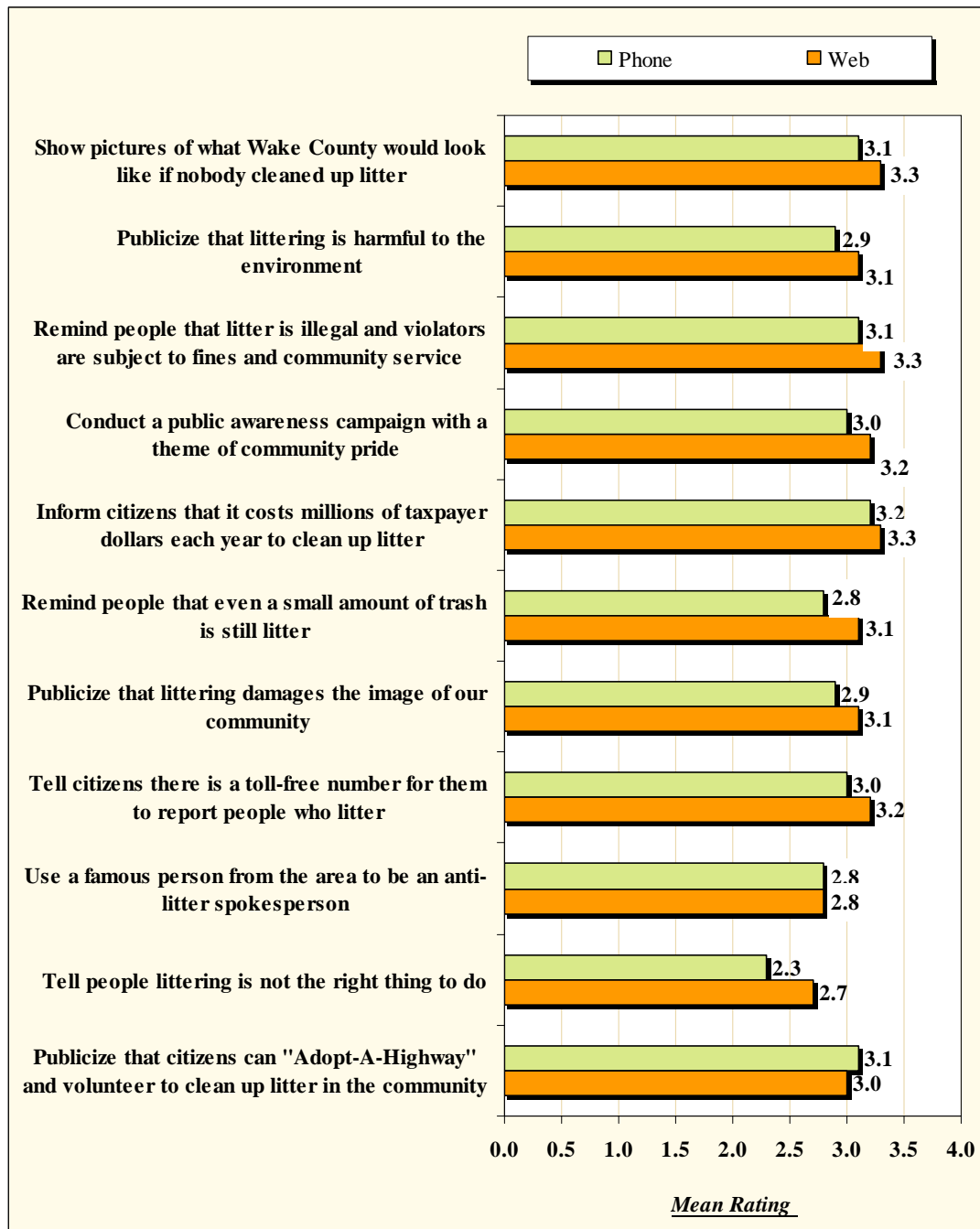
### B. RESPONDENT PERSPECTIVES ON LITTER REDUCTION IN WAKE COUNTY

Members of both samples were asked to rate the effectiveness of eleven litter reduction strategies. A majority of strategies proposed in the surveys involved educational and public awareness

## VIII. SUMMARY OF FINDINGS

tactics. Web respondents rated most strategies higher than phone respondents (Figure 53). *Use a famous person from the area to be an anti-litter spokesperson* received the same low mean rating—2.8 out of a possible 4.0—from each group. The less specific strategy, *Tell people littering is not the right thing to do*, also received low ratings from each group.

**Figure 53. Perceived Effectiveness of Litter Reduction Strategies: by Survey Sample.**

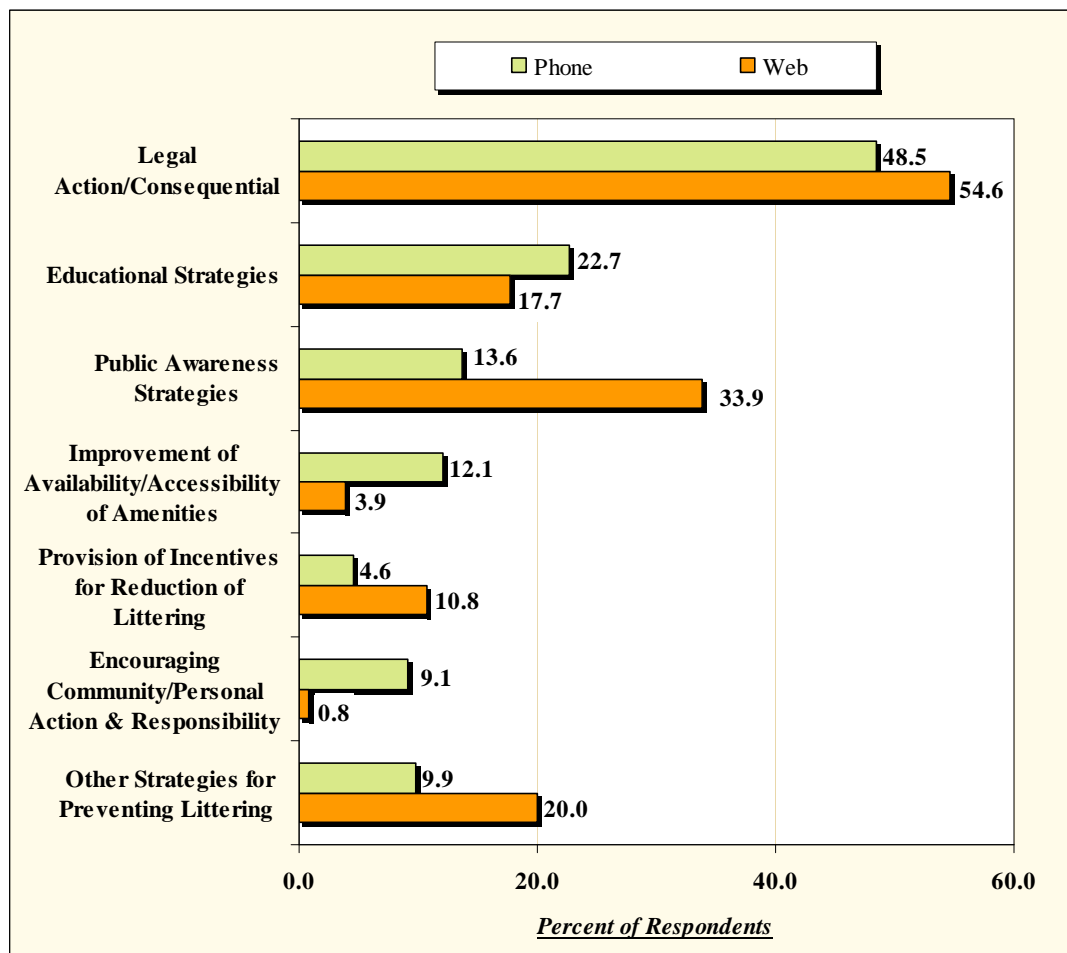


## VIII. SUMMARY OF FINDINGS

Both groups were asked to provide their own suggestions for litter reductions strategies. A total of 133 phone and 99 web respondent offered suggestions for reducing or preventing littering. Suggested strategies generally fell into six broad categories as shown in Figure 54. Antecedent approaches are represented by three categories: Education, Public Awareness, and Availability/Accessibility of Amenities. Consequential strategies are represented by the Legal Actions/Consequences category. The remaining categories—Provision of Incentives and Encouraging Community or Personal Action/Responsibility—include suggestions that represent both types of approaches to litter reduction. The former category refers to positive consequences for desired action. The latter includes comments such as, “Engage people in litter pickup days.”

For both samples, the most commonly mentioned litter reduction strategies fell into the Legal Action category. Respondents believe that legal intervention may prevent littering before the fact or punish prior behavior through the use of cameras, fines, enforcing existing laws, community service, and related strategies. Respondents also view public education and youth education/prevention as worthwhile means of preventing littering in the before it starts.

**Figure 54. Litter Reduction Strategies Suggested by Respondents: by Survey Sample.**



## IX. CONCLUSIONS

This two-part study was conducted by The Center for Urban Affairs and Community Services at North Carolina State University, on behalf of The Wake County Environmental Services Department. The study was designed to provide baseline data for the upcoming *86it Anti-Litter Movement* and to provide a better understanding of local knowledge and attitudes about littering. Using a representative phone sample of Wake County households and a voluntary web sample, information was gathered on perception of amount of litter and littering behavior, perceived effectiveness of strategies for reducing litter, and familiarity with existing litter reduction programs.

Generally, study findings support existing research. Among telephone respondents, those in the youngest age bracket—those in their twenties—are less likely to anticipate picking up litter under a variety of circumstances, especially litter that someone else dropped. Likewise, home owners are generally more likely to pick up litter that they, themselves, dropped or litter someone else dropped on their property (both samples). Because older respondents are more likely to own their homes than younger respondents, these findings are likely related.

As might be expected, because young people and renters may be more transient than older persons and home owners, respectively, it is safe to assume that such individuals would be less likely to pick up litter. Each group's impermanence undermines its connection with the local community. Existing research suggests that socially integrated individuals, who share community values and norms, are more likely to engage in prosocial environmental behavior than others (Cialdini 2003, Huffman et al. 1995).

An exception to this trend might be found with respect to large families. Although respondents in households with a large number of children may be socially integrated, this study's findings indicate that respondents with more than four children in the household are less likely to pick up something that they have dropped than those with fewer or no children. Although such respondents are as familiar with litter reduction programs as others, family demands likely constrain the amount of time and effort individuals are willing or able to expend on litter reduction.

Other possible predictors of littering behavior addressed in this research were less robust than children in the household and homeownership. Gender, income, and educational level were not strongly associated with littering attitudes, behavior, or knowledge either within or across the two study samples.

In light of these findings, the *86it Anti-Litter Movement* might focus litter prevention efforts among the relatively young, the property-less, and those with more children living in the household. Some recent research (e.g., Kollmuss and Agyeman, 2002) suggests that knowledge and pro-environmental attitudes are not enough to prevent littering. Even if citizens are informed about environmental degradation, concerned with environmental issues, and familiar with litter reduction campaigns, there are a myriad of reasons why they might continue to litter. Social, economic, and political constraints; local norms and culture; locus of control; and emotional

## **IX. CONCLUSIONS**

investment affect whether or not people will act in environmentally sustainable ways (Kollmuss and Agyeman 2002, Bickman 1972).

Furthermore, although study findings rarely differ dramatically across the two survey samples, those who initiated participation by web tend to be more concerned about the environment, and more familiar with anti-littering campaigns. Since the web survey was publicized within civic organizations, the lack of variation among web respondents may not be surprising. Yet the distinction between the samples may offer insight regarding how to inform the public and raise awareness within local communities: increase involvement in local coalitions.

Because social norms and socially-defined attitudes drive individual behavior (Kollmuss and Agyeman 2002), creating opportunities for cooperative efforts to prevent littering may be an effective means to undermine environmental destruction. Willingness to act on behalf of the environment is already evident among the voluntary web sample members: nearly three-fourths of these respondents report that they would be willing to volunteer in litter reduction programs. Such recommendations are supported by previously reviewed studies that suggest that community involvement increases the effectiveness of other litter reduction strategies. To the extent possible, promoting social involvement strategies along with educational and public awareness campaigns, as suggested by Huffman (1995), may be the most effective and comprehensive strategy for raising awareness and changing behavior in Wake County.

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APPENDIX A

TELEPHONE SURVEY



# 2010 ATTITUDINAL SURVEY FOR 86IT LITTER CAMPAIGN

WAKE COUNTY DEPARTMENT OF ENVIRONMENTAL SERVICES

**1. In your opinion, how important is litter prevention in Wake County? Would you say it's:**  
**[READ CATEGORIES. SELECT ONLY ONE.]**

- Very Important..... 5
- Important..... 4
- Neither Important nor Unimportant ..... 3
- Somewhat Unimportant ..... 2
- Not At All Important..... 1

**2. How long have you been a Wake County resident? [LET RESPONDENT VOLUNTEER. SELECT ONLY ONE.]**

- Less than two years [SKIP TO Q4] ..... 1
- 2-4 years..... 2
- 5-10 years..... 3
- More than 10 years..... 4

**3. Has the amount of litter in Wake County changed over the last two years? Would you say there is: [READ CATEGORIES. SELECT ONLY ONE.]**

- More litter today than two years ago?..... 1
- Less litter today than two years ago? ..... 2
- About the same amount as two years ago?..... 3

4.	Please indicate your level of agreement with each of the following statements about why people litter. Please use the categories.... [READ CATEGORIES. SELECT ONLY ONE FOR EACH ITEM.]						
	PEOPLE LITTER BECAUSE...	LEVEL OF SATISFACTION					Don't Know/ No Opinion
		Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	
a.	They don't think one piece of trash matters.	5	4	3	2	1	9
b.	They think someone else will pick it up.	5	4	3	2	1	9
c.	There isn't a trashcan or bag nearby.	5	4	3	2	1	9
d.	They didn't consider the item they dropped to be litter.	5	4	3	2	1	9
e.	They don't have time to dispose of the litter properly.	5	4	3	2	1	9
f.	They don't care.	5	4	3	2	1	9
g.	They didn't even realize that they had littered (unintentional littering).	5	4	3	2	1	9

5.	How likely are you to pick up a piece of litter in the following situations? .....Would you say you are: [READ CATEGORIES. SELECT ONE FOR EACH]					
	SITUATION	LIKELIHOOD				Don't Know/ No Opinion
		Very Likely	Somewhat Likely	Somewhat Unlikely	Very Unlikely	
a.	Something you dropped	4	3	2	1	9
b.	Something someone else dropped	4	3	2	1	9
c.	Something someone else dropped on your property	4	3	2	1	9

2010 ATTITUDINAL SURVEY FOR 86IT LITTER CAMPAIGN  
WAKE COUNTY DEPARTMENT OF ENVIRONMENTAL SERVICES

6.	<b>I'm going to read the names of several litter reduction programs . Please tell me how familiar you are with each program. Would you say you:</b> <b>[READ CATEGORIES. SELECT ONLY ONE FOR EACH ITEM.]</b>				
	PROGRAM	LEVEL OF FAMILIARITY			Don't Know/ No Opinion
		Very Familiar with it	Somewhat Familiar with it	Have Not Heard of it	
a.	Keep NC Clean and Green	3	2	1	9
b.	Department of Corrections Roadside Litter Cleanup	3	2	1	9
c.	Swat-A-Litter Bug	3	2	1	9
d.	SPRUCE	3	2	1	9
e.	Keep America Beautiful	3	2	1	9
f.	Adopt-A-Highway	3	2	1	9
g.	Litter Sweep	3	2	1	9
h.	NC Big Sweep	3	2	1	9
i.	Any other Program? [SPECIFY]_____	3	2	1	9

7.	I'm going to mention several strategies for keeping people from littering. Please tell me how effective you think each strategy might be, using the following categories:					
	[READ CATEGORIES. SELECT ONLY ONE FOR EACH ITEM.]					
	STRATEGY	LEVEL OF EFFECTIVENESS				Don't Know/ No Opinion
Very Effective		Somewhat Effective	Somewhat Ineffective	Very Ineffective		
a.	Show pictures of what Wake County would look like if nobody cleaned up litter	4	3	2	1	9
b.	Publicize that littering is harmful to the environment	4	3	2	1	9
c.	Remind people that litter is illegal and violators are subject to fines and community service	4	3	2	1	9
d.	Conduct a public awareness campaign with a theme of community pride	4	3	2	1	9
e.	Inform citizens that it costs millions of taxpayer dollars each year to clean up litter	4	3	2	1	9
f.	Remind people that even a small amount of trash is still litter	4	3	2	1	9
g.	Publicize that littering damages the image of our community	4	3	2	1	9
h.	Tell citizens there is a toll-free number for them to report people who litter	4	3	2	1	9
i.	Use a famous person from the area to be an anti-litter spokesperson	4	3	2	1	9
j.	Tell people littering is not the right thing to do	4	3	2	1	9
k.	Publicize that citizens can "Adopt-A-Highway" and volunteer to clean up litter in the community	4	3	2	1	9
l.	Other [SPECIFY & RATE EFFECTIVENESS]	4	3	2	1	9

2010 ATTITUDINAL SURVEY FOR 86IT LITTER CAMPAIGN  
WAKE COUNTY DEPARTMENT OF ENVIRONMENTAL SERVICES

<b>8. Have you seen, read, or heard any ads or public service messages related to litter or littering in the last year?</b>	
▪ Yes .....	1
▪ No [SKIP TO Q11] .....	2
▪ Don't Know [SKIP TO Q11] .....	9

<b>9. IF YES TO Q8: Where did you see, read, or hear the ad(s) or public service message(s)?</b>	
[LET RESPONDENT VOLUNTEER. SELECT ALL THAT APPLY.]	
▪ Radio.....	1
▪ Television .....	1
▪ Newspaper .....	1
▪ Internet.....	1
▪ Magazine .....	1
▪ Billboard .....	1
▪ Friend.....	1
▪ Other [SPECIFY] _____	
▪ Don't Know/Can't Remember .....	9

<b>10. What was (were) the main slogan(s) used? [PRINT EACH <u>AS STATED</u>.]</b>	
▪ _____	
▪ _____	
▪ _____	
▪ Don't Know/Remember .....	9

For data analysis purposes, I would like to ask you a few background questions:

<b>11. What is the highest level of education you've completed? [LET RESPONDENT VOLUNTEER. PROBE AS NEEDED. SELECT ONLY ONE.]</b>	
▪ Grade school or less .....	1
▪ Some high school .....	2
▪ High school graduate/GED .....	3
▪ Some college .....	4
▪ College graduate.....	5
▪ Graduate school or higher .....	6
▪ Don't know / Refused .....	9

<b>12. a. What is your home zip code? [RECORD 5 DIGIT ZIP CODE]</b>	
b. What is your work zip code? [RECORD 5 DIGIT ZIP CODE]	<div style="border-bottom: 1px solid black; width: 100px; margin: 0 auto;"></div> <div style="border-bottom: 1px solid black; width: 100px; margin: 0 auto;"></div>

2010 ATTITUDINAL SURVEY FOR 86IT LITTER CAMPAIGN  
WAKE COUNTY DEPARTMENT OF ENVIRONMENTAL SERVICES

**13. What is your gender?**

- Male ..... 1
- Female..... 2

**14. In what year were you born? [LET RESPONDENT VOLUNTEER. RECORD YEAR.]**

— — — —

**15. How would you describe the home you currently live in? Is it: [READ CATEGORIES. SELECT ONLY ONE.]**

- Owner occupied?..... 1
- A Rental? ..... 2
- Other [SPECIFY]..... 4
- Don't know ..... 9

**16. How many children under the age of 18 live in this household? [LET RESPONDENT VOLUNTEER. SELECT ONLY ONE.]**

- None..... 1
- One..... 2
- Two to Three..... 3
- Four or more..... 4

**17. What was your household income range (before taxes) in 2009?**

- Under \$20,000..... 1
- \$21,000 to \$35,000..... 2
- \$36,000 to \$45,000..... 3
- \$46,000 to \$60,000..... 4
- \$61,000 to \$75,000..... 5
- \$76,000 to \$90,000..... 6
- \$91,000 to \$105,000..... 7
- \$106,000 and greater..... 8
- Don't Know/Refused ..... 9

**18. Would you like to be included in our email database to receive updates on the upcoming anti-litter program in Wake County?**

- Yes ..... 1
- No [SKIP TO END] ..... 2

**19. IF YES TO Q18: What is your email address? [PRINT EMAIL ADDRESS AS STATED. READ BACK TO RESPONDENT FOR CLARIFICATION.]**

\_\_\_\_\_

**THAT CONCLUDES THE INTERVIEW. THANK YOU FOR YOUR PARTICIPATION!**

# APPENDIX B

## TELEPHONE SURVEY OPEN-ENDED RESPONSES





**APPENDIX B**  
**TELEPHONE SURVEY: OPEN ENDED RESPONSE**

<b>OTHER LITTER REDUCTION PROGRAMS: RESPONDENT COMMENTS (Q6)</b>
<ul style="list-style-type: none"><li>➤ Neuse River program every April in Wake County.</li><li>➤ Chuck it (NC State).</li><li>➤ REI (Rubbish Economy Industry). Its nationwide - in store campaign.</li><li>➤ Give a hoot, don't pollute.</li><li>➤ My Garden Club</li><li>➤ Neuse River clean up.</li><li>➤ Bumper stickers to say - Please don't litter.</li><li>➤ Keep stream alive.</li><li>➤ Give a hoot, don't pollute.</li><li>➤ NC park clean up programs.</li><li>➤ Community clean up.</li><li>➤ The Neuse River keeper.</li><li>➤ Neuse River.</li><li>➤ Neuse River cleanup.</li></ul>

## APPENDIX B

### TELEPHONE SURVEY: OPEN ENDED RESPONSE

#### LEGAL ACTION/CONSEQUENTIAL STRATEGIES TO REDUCE LITTERING: RESPONDENT SUGGESTIONS (Q711)

- Give tickets for littering.
- Fines.
- Get law enforcement to cite people for littering.
- Experience the fines now!
- Use cameras to catch motorists littering.
- Citation / or warning should be given to litterer.
- There should be stiffer penalties / fines for such behavior.
- Charge people stiffer fines if caught littering.
- Make violators pay higher fines.
- Fine people that litter \$500 or more.
- Strengthen law enforcement and use cameras to enforce the laws.
- No open trucks that haul trash (with open back) need to be closed.
- Actually enforce laws already on books.
- Should require all community service people to pick up trash along with a part of their other sentence.
- Make people caught get mandatory consequences and have them pick up litter.
- Have consequences immediately like if someone is convicted of littering, they should be obligated to pick up trash for 1 mile or 1/2 mile.
- Need more prisoners who are honor grade / work release weekender types to perform trash pickups from roads etc.
- Increase the fines for littering and make it hurt.
- Should increase littering fines.
- Charge the maximum penalty allowed!
- Enforce!
- Enforce fines.
- More fines.
- Fines.
- Enforce the law.
- Stiffer penalties and heavier fines.
- Require that all cover trucks and work vehicles so that trash doesn't fly off onto the roads and highways.
- Enforce laws.
- Law enforcement should be stronger.
- Higher fines should be imposed.
- Use inmates.
- Have more people enforcing the law.
- Sentence people caught littering to a time to pick up litter.
- Have consequences such as fines and / or public disclosure of litterers.
- Give people who litter a ticket.
- Mandate that construction vehicles and garbage trucks keep tarps on their vehicles. Garbage trucks are a big offender.
- Increase the fine for littering.
- Law enforcement officers should stop people when they see them littering.
- Law enforcement should enforce the laws on the books.
- Make people pay fines.

## APPENDIX B

### TELEPHONE SURVEY: OPEN ENDED RESPONSE

#### LEGAL ACTION/CONSEQUENTIAL STRATEGIES TO REDUCE LITTERING: RESPONDENT SUGGESTIONS (Q711)

- Make contractors keep the debris covered.
- Would help if they did use fines.
- Increase fines.
- Find some way to make people pay fines for littering.
- Actually fine them and write tickets. Unless you hurt them in their pocketbooks, they will continue to litter (so fine).
- Catch people and cuss them out - fine them.
- Increase fines.
- Have more inmates clean-up, we pay taxes so they can work on this!
- Fine if you do not pick up your trash yourself.
- We should install litter cameras or use the red light cameras and mail violators a ticket.
- We need to enforce the laws.
- Increase the fines.
- Enforce the laws on books, get judges to back them up at meetings, have fresh law enforcement officers to attend and make notes of suggestions.
- Fine them and enforce them (the laws).
- More fines enforced.
- Patrol should pull over and fine them (large fine).
- Require people to pay a fine for littering.
- No open pick up trucks with trash.
- There should be a greater penalty such as a higher fine for littering.
- When people are convicted of minor crimes and required to pay fines also require that they do community service of picking up litter for several days. Minor crimes such as speeding, worthless checks.
- Increase the fine for littering (exempt organic litter (apple core, etc.)).
- Enforce our laws.
- We need to enforce the laws and make people pay the fine.
- Use cameras that are on intersections to take pictures of litterers and fine them.
- We need to enforce our laws and make them pay fines.
- Use a video monitoring system like stop light camera.
- Should have litter patrol.
- Have police ticket people caught littering (\$50).
- Make pickup trucks use/law a tarp when hauling trash.
- Enforce laws that fine people who litter.
- Enforce law / police should fine people for littering.
- Construction trucks should cover loads.
- Give people caught littering in their community a punishment of picking up litter in their same community.

**APPENDIX B**  
**TELEPHONE SURVEY: OPEN ENDED RESPONSE**

**EDUCATIONAL STRATEGIES TO REDUCE LITTERING: RESPONDENT SUGGESTIONS (Q711)**

- Educate kids in schools - get the kids going in elementary, high school, college.
- Start teaching children at an early age about the consequences of littering.
- Should be taught in school pollution instead of global warming.
- Continue exposure to littering from K-12. Show pictures before after what litter looks like.
- Educate kids not to litter (in school).
- Educate parents about setting an example.
- Help parents encourage children to help clean up around their own yards and neighborhoods.
- Teach our children all early.
- Give classes in middle and high school to teach students about environmental clean up and the green movement. The graduate students can learn to do environmental projects.
- Start teaching kids at a young age not to litter and why.
- We should train kids while they are young.
- Recommend that we start teaching at a young age the importance of keeping litter picked up.
- Develop programs and start training our young people early in life and carry training into schools (K-12).
- Training young children.
- Teach children not to litter. Start very young.
- We need to cultivate attitudes in our educational programs starting at the younger ages.
- Start teaching kids in school at an early age.
- Teach young kids at daycare and kindergarten not to litter.
- Educate kids early!
- Talk to school kids (like anti smoking campaign) about littering. 'In high schools, do when driver ed course is taken. Teach them not to litter.
- Educate kids, have them participate.
- Educate children in schools about littering.
- Trained people early.
- We need to start teaching our children at a young age to pick up trash even though they did not drop it.
- Teach children at a young age to not litter.
- Education in school - get young.
- Parents should practice not littering and teach their children not to litter.
- Educate through the schools.
- Get parents to tell their children not to litter (individual responsibility).
- Raise your children better - teach not to litter.
- Teach our children while young.

**APPENDIX B**  
**TELEPHONE SURVEY: OPEN ENDED RESPONSE**

**PUBLIC AWARENESS STRATEGIES TO REDUCE LITTERING:  
RESPONDENT SUGGESTIONS (Q711)**

- Do campaign one person, one neighborhood at a time, walk neighborhoods.
- If everybody in Wake County tossed a soda can / chip bag. Show what it would cost and look like. If only 10 % littered what would it look like and cost. (show causes of littering and cost)
- Add notices to all NC government websites about littering.
- Show what one candy wrapper would look like and then multiply that by a thousand candy wrappers.
- Post more “no litter” signs.
- Campaign spokesperson should be able to speak Spanish and English.
- Use Tonto as ad person, do ad like Jay Silverman (Tonto) did years ago.
- Use more PSAs.
- Run a campaign to pick up litter for our troops. Since they work for America, let’s do our work too!
- Put signs up that it’s against the law and you could go to jail.
- Encourage people to put a sign on their property to take their trash and don’t prop it here.
- Expand on the adopt a highway program.
- We need to use bigger signs when advertising “don’t litter”. People say they “didn’t see the sign”.
- More education on TV about effects of littering on environment.
- Have a litter prevention campaign using Boys and Girls Club and other youth programs.
- Show people an image of places they live, work, go everyday and what they would look like littered (more personal).
- Increase awareness to people / more ads.
- Figure how much it takes to keep a park clean and equate that amount to an item Wake County could have instead and publicize that to the public (i.e., ambulance, police car).

**APPENDIX B**  
**TELEPHONE SURVEY: OPEN ENDED RESPONSE**

**AVAILABILITY / ACCESSIBILITY OF AMENITIES TO REDUCE LITTERING:  
RESPONDENT SUGGESTIONS (Q711)**

- Have more trash cans in parks / city streets.
- Place more trash receptacles in public areas.
- Give them [litter bags] free to folks.
- Make more trash bins available in public areas.
- Place dumpsters at the recycling places so that we can dump regular trash as well.
- Install more trash cans and they should be convenient and accessible.
- Place more trash cans around and make them more decorative / noticeable.
- Should make recycling places more accessible.
- Put trash receptacles on every street / corners must be on all of these trash bins.
- Ask fast food restaurants to provide drive-up trash cans a few feet away from drive thru window.
- Give out free litter bags for vehicles.
- We need to have more visible waste containers.
- Make more trash cans available in parks and hiking trails.
- More recycling bins around schools and sports areas.
- More trash cans to place litter.
- Put more trash cans out for public use. Since 9-11 there is not enough trash containers out.

**PROVISION OF INCENTIVES TO REDUCE LITTERING: RESPONDENT SUGGESTIONS (Q711)**

- Encourage high school students to clean up litter by offering college admission advantages or other incentives for non college recognition.
- Encourage by having contests.
- Offer rewards to people.
- Step up the recycle program like go back to offering money for bottles for some incentive.
- We should go back to the bottle law, pay for return of bottle and cans.
- Every person take part in cleaning - reward system needed.

**APPENDIX B**  
**TELEPHONE SURVEY: OPEN ENDED RESPONSE**

**COMMUNITY / PERSONAL ACTION OR RESPONSIBILITY TO REDUCE LITTERING:  
RESPONDENT SUGGESTIONS (Q711)**

- Encourage people to keep a litter bag in their car.
- Give toll free number and offer cards large enough for citizens to request to write down the info you request on your website for reporting offenders.
- Encourage folks to report. If you see someone throw trash out of window, take down license plate number. Report it to proper place.
- Have kids pick up their litter in school area, while they are in school.
- Encourage people to recycle more.
- Get citizens to report license plate of persons they see littering on the highways.
- Offer toll free number.
- Have children volunteer to clean up their community.
- Encourage people to keep a trash bag in their car.
- Get more people to clean up, teenagers, etc.
- Get young people involved.
- Work in coalition with communities to clean up!!
- Go to youth organizations and get them involved in litter cleanup.

**OTHER STRATEGIES TO REDUCE LITTERING: RESPONDENT SUGGESTIONS (Q711)**

- Get people on public assistance to do 2 hours a week picking up litter.
- Review what states are doing. Check to see what they do in Tennessee - no trash (litter) there.
- Make people understand that it's a serious violation like wearing seat belts or texting.
- Get rid of cigarette butts and count as litter.
- Better coordination between grass cutting and litter pickup so litter is picked up before grass is cut on the roadways.
- Contact authorities in the Bahamas and find out what they are doing as it appears to be working for them.
- Make sure Wake County / City pick up trash bags left by work crews.
- Use littering stops as an opportunity to check car and people further for other violations.
- Give people the tools to organize through Facebook, MySpace, texting, etc. Use social media (online) to organize and show people what littering looks like.
- Put litter on people's lawns (well taken care of) to show what it looks like to ruin a lawn.
- Look at what other states are doing / replicate.
- Empty public trash cans regularly.
- Use unemployed people in areas of high littered areas; pay them to clean: cleaner areas will produce pride and people will keep cleaner. The unemployed will also have more self-pride from working.

**APPENDIX B**  
**TELEPHONE SURVEY: OPEN ENDED RESPONSE**

<b>LOCATION OF PUBLIC SERVICE MESSAGES: RESPONDENT COMMENTS (Q9)</b>
<ul style="list-style-type: none"> <li>➤ Black and white sign beside the street.</li> <li>➤ Bumper sticker on auto.</li> <li>➤ School.</li> <li>➤ Highway sign - fine for littering.</li> <li>➤ Signs on highway.</li> <li>➤ Bumper sticker.</li> <li>➤ Department of Corrections Sign at Work</li> <li>➤ Adopt a highway sign.</li> <li>➤ Church</li> <li>➤ Roadside sign.</li> <li>➤ Signs on the highway.</li> <li>➤ Church</li> <li>➤ Signs in store windows.</li> <li>➤ Road sign.</li> <li>➤ Adopt a highway signs.</li> <li>➤ Adopt a highway signs.</li> <li>➤ School ads.</li> <li>➤ Church sermon.</li> <li>➤ School poster.</li> <li>➤ In a store poster.</li> <li>➤ On trash cans.</li> <li>➤ Church</li> <li>➤ Community meetings at my church.</li> <li>➤ Sign on highway.</li> <li>➤ Adopt a highway signs.</li> <li>➤ Signs along highway.</li> <li>➤ Mailers - school.</li> <li>➤ Signs by the roadside.</li> <li>➤ Road signs.</li> <li>➤ Church bulletin.</li> <li>➤ Road sign.</li> <li>➤ Adopt a highway signs.</li> </ul>



**APPENDIX B**  
**TELEPHONE SURVEY: OPEN ENDED RESPONSE**

<b>SLOGANS RECALLED BY RESPONDENT</b> <b>(Q10)</b>	
➤	Something about there is a fine for littering. (Exact wording.)
➤	Keep NC Clean and Green
➤	Fraternity Adopting-A-Highway
➤	Keep NC Clean
➤	X Don't Litter (Circle Reads Don't Litter)
➤	Don't Be a Litter Bug
➤	Adopt-A-Highway
➤	Recycling and Keeping Litter Picked Up
➤	Keep NC Clean
➤	Don't Be a Litter Bug
➤	Fine for Littering
➤	Keep America Beautiful
➤	Keep NC Beautiful
➤	Cartoon about Littering
➤	Keep America Beautiful
➤	Indian with Tear Running Down Cheek
➤	Adopt-A-Highway
➤	No one trashes North Carolina with toll free number to report litter bugs.
➤	Keep America Clean
➤	Give a Hoot Don't Pollute
➤	Adopt-A-Highway to Help
➤	Litter Sweep
➤	Adopt-A-Highway
➤	They dropped a small piece of trash and then they were in a landfill.
➤	Keep NC Clean
➤	Keep NC Green
➤	Don't Litter (I Think)
➤	Don't Be a Litter Bug
➤	Keep NC Clean and Beautiful
➤	Keep America Beautiful
➤	Keep America Green
➤	Littering is a Fine "Able" Offense
➤	Adopt-A-Highway
➤	It will cost you if you litter.
➤	Adopt-A-Highway
➤	Adopt-A-Highway
➤	Keep America Beautiful
➤	Adopt-A-Highway HVC
➤	Adopt-A-Highway
➤	Don't Litter
➤	Keep NC Clean and Green
➤	Keep America Clean
➤	Keep NC Beautiful
➤	Trash Can Talking
➤	Adopt-A-Highway
➤	Smokey the Bear
➤	Don't Be a Litter Bug
➤	Give a Hoot Don't Pollute
➤	Swat-A-Litter Bug
➤	Keep Area Litter Free
➤	Adopt-A-Highway

**APPENDIX B**  
**TELEPHONE SURVEY: OPEN ENDED RESPONSE**

<b>SLOGANS RECALLED BY RESPONDENT (Q10)</b>
<ul style="list-style-type: none"><li>➤ Adopt-A-Highway</li><li>➤ NC Big Sweep - Garner, NC</li><li>➤ Keep America Beautiful</li><li>➤ Adopt-A-Highway</li><li>➤ Keep America Beautiful</li><li>➤ Keep NC Clean and Green</li><li>➤ Rivers - Big Sweep</li><li>➤ X Littering</li><li>➤ Something about volunteering to clean up the highways.</li><li>➤ Keep America Clean</li><li>➤ Report People that Litter</li><li>➤ Clean and Green</li><li>➤ Keep It Green</li><li>➤ Adopt-A-Highway</li><li>➤ Litter is Illegal and There is a Fine</li><li>➤ Adopt-A-Highway</li><li>➤ Do Not Litter! What Is Litter?</li><li>➤ Adopt-A-Highway</li><li>➤ Adopt-A-Highway</li><li>➤ Keep America Beautiful</li></ul>

# APPENDIX C

## WEB SURVEY



## 2010 ATTITUDINAL SURVEY FOR 86IT LITTER CAMPAIGN

WAKE COUNTY DEPARTMENT OF ENVIRONMENTAL SERVICES

The Department is getting ready to launch a new litter reduction and prevention campaign. The purpose of this survey is to collect benchmark data on the community's attitudes and perceptions of litter before the new campaign starts. After implementing the campaign, Wake County will conduct a second survey and compare the results. By having good data we can accurately measure the effective of the litter reduction campaign over time.

Thank you in advance for your cooperation.

a. Are you a resident of Wake County?

- YES ..... ☐
- NO ..... ☐

IF NO: We are only interviewing Wake County residents. Thanks for your time.

b. Are you 18 years old or older?

- YES ..... ☐
- NO ..... ☐

IF NO: We are only interviewing persons 18 and older. Thanks for your time.

1. In your opinion, how important is litter prevention in Wake County? Would you say it's:  
[SELECT ONLY ONE.]

- Not At All Important ..... ☐
- Somewhat Unimportant..... ☐
- Neither Important nor Unimportant..... ☐
- Important..... ☐
- Very Important ..... ☐

2. How long have you been a Wake County resident? [SELECT ONLY ONE.]

- Less than two years [SKIP TO Q4]..... ☐
- 2-4 years ..... ☐
- 5-10 years ..... ☐
- More than 10 years ..... ☐

3. How has the amount of litter in Wake County changed over the last two years? Would you say there is: [SELECT ONLY ONE.]

- More litter today than two years ago? ..... ☐
- Less litter today than two years ago? ..... ☐
- About the same amount as two years ago?..... ☐

4. Where do you most often see litter? [SELECT ALL THAT APPLY.]

- Interstate highways (i.e., I-40, I-440, I-540, etc.)..... ☐
- State highways (i.e., NC 54, NC 55, US 1, US 64, etc.) ..... ☐
- On-ramps and/or off-ramps ..... ☐
- Secondary roads (i.e., Harrison Ave, Millbrook Rd, Poole Rd, etc.) ..... ☐
- Neighborhood streets..... ☐
- Streams, lakes, rivers or other waterways ..... ☐
- Other (Specify)\_\_\_\_\_ ☐

2010 ATTITUDINAL SURVEY FOR 86IT LITTER CAMPAIGN  
WAKE COUNTY DEPARTMENT OF ENVIRONMENTAL SERVICES

5. Of the areas listed below, which has the greatest littering problem? [SELECT ONLY ONE.]

- Interstate highways (i.e., I-40, I-440, I-540, etc.)..... ☐
- State highways (i.e., NC 54, NC 55, US 1, US 64, etc.) ..... ☐
- On-ramps and/or off-ramps ..... ☐
- Secondary roads (i.e., Harrison Ave, Millbrook Rd, Poole Rd, etc.) ..... ☐
- Neighborhood streets..... ☐
- Streams, lakes, rivers or other waterways ..... ☐
- Other (Specify)\_\_\_\_\_ ☐

6. Is there a specific roadway segment that you believe is the most littered in Wake County?  
[RECORD RESPONSE]

\_\_\_\_\_

7. What do you consider to be the main source of litter in Wake County? Would you say it's:  
[SELECT ONLY ONE.]

- Passengers or driver in a personal vehicle (e.g., car, truck, motorcycle, etc.)..... ☐
- Bed of uncovered pickup trucks ..... ☐
- Garbage trucks..... ☐
- Bed or cargo area of a commercial vehicle ..... ☐
- Pedestrians..... ☐
- Some Other Source (Specify)\_\_\_\_\_ ☐

8. How significant a part of our litter problem are the following types of materials:  
[READ CATEGORIES. SELECT ONLY ONE.]

	MATERIAL	SIGNIFICANCE OF PROBLEM				Don't Know/ No Opinion
		Very Significant	Significant	Insignificant	Very Insignificant	
a.	Beverage cans and bottles	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b.	Plastic bags /other plastic	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c.	Cardboard	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d.	Fast food wrappers and containers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e.	Chip bags or candy wrappers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f.	Food, organic material, or raw food	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g.	Small pieces of paper such as receipts, lottery tickets, gum wrappers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h.	Cigarette butts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i.	Construction debris	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
j.	Litter that falls out of pickup trucks unintentionally	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
k.	Litter that falls out of tractor trailers, garbage trucks, etc. unintentionally	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
l.	Full or partially full bags of trash	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
m.	Other (please specify)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

# 2010 ATTITUDINAL SURVEY FOR 86IT LITTER CAMPAIGN

WAKE COUNTY DEPARTMENT OF ENVIRONMENTAL SERVICES

**9. If you had to choose only one option, would you say that the majority of litter in Wake County is:** [READ CATEGORIES. SELECT ONLY ONE.]

- Intentional ..... ☐
- Unintentional ..... ☐

**10. Have you dropped a piece of litter or had a piece of litter blow from your vehicle within the last six months?** [SELECT ONLY ONE.]

- Yes ..... ☐
- No ..... ☐
- Don't Know ..... ☐

**11. Please indicate your level of agreement with each of the following statements about why people litter. Please use the categories.....** [READ CATEGORIES. SELECT ONLY ONE FOR EACH ITEM.]

	SERVICE	LEVEL OF AGREEMENT					Don't Know/ No Opinion
		Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree	
a.	They don't think their one piece of trash matters.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b.	They think someone else will pick it up.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c.	There isn't a trashcan or bag nearby.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d.	They didn't consider the item they dropped to be litter.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e.	They don't have time to dispose of the litter properly.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f.	They don't care.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g.	They didn't even realize that they had littered (unintentional littering).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**12. Please indicate how likely you would be to litter in the following situations. ....Please use the categories.....** [READ CATEGORIES. SELECT ONLY ONE FOR EACH ITEM.]

	SITUATION	LEVEL OF LIKELIHOOD					Don't Know/ No Opinion / Not App.
		Very Likely	Likely	Neither Likely not Unlikely	Unlikely	Very Unlikely	
a.	In an area that is clean.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b.	In your neighborhood.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c.	When holding an empty beverage cup or bottle and there are no trash cans available	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d.	When holding a gum wrapper and there are no trashcans available.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e.	When smoking a cigarette and there is no ash tray available (if applicable)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f.	When you know a cleanup crew will be coming by to pick it up.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g.	When nobody is around to see you.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2010 ATTITUDINAL SURVEY FOR 86IT LITTER CAMPAIGN  
WAKE COUNTY DEPARTMENT OF ENVIRONMENTAL SERVICES

- 13. How likely are you to pick up a piece of litter in the following situations? .....Would you say you are:**  
[READ CATEGORIES. SELECT ONE FOR EACH]

		LEVEL OF LIKELIHOOD				Don't Know / No Opinion / Not App.
		Very Likely	Likely	Unlikely	Very Unlikely	
a.	Something you dropped	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b.	Something someone else dropped	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c.	Something someone else dropped on your property	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- 14. How likely would you be to participate in a volunteer program to pick up litter on roads in the Wake County area? Are you: [READ CATEGORIES. SELECT ONLY ONE.]**

- Very unlikely [SKIP TO Q16] ..... ☐
- Unlikely [SKIP TO Q16] ..... ☐
- Somewhat likely ..... ☐
- Likely ..... ☐
- Very likely ..... ☐

- 15. How often would you participate in a volunteer program for this purpose? Would you participate: [READ CATEGORIES. SELECT ONLY ONE.]**

- One time a year? ..... ☐
- Two times a year? ..... ☐
- More than twice a year but less than monthly? ..... ☐
- Once a month? ..... ☐
- Don't Know ..... ☐

- 16. Please tell me if how familiar you are with each of the following litter reduction programs.**  
[READ CATEGORIES. SELECT ONLY ONE FOR EACH ITEM.]

	SERVICE	LEVEL OF AWARENESS			Don't Know / No Opinion / Not App.
		Have Heard of it and are Very Familiar with it?	Have Heard of it and are Somewhat Familiar with it?	Have Not Heard of it?	
a.	Keep NC Clean and Green	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b.	Department of Corrections Roadside Litter Cleanup	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c.	Swat-A-Litter Bug	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d.	SPRUCE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e.	Keep America Beautiful	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f.	Adopt-A-Highway	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g.	Litter Sweep	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h.	NC Big Sweep	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i.	Other (please specify)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



# 2010 ATTITUDINAL SURVEY FOR 86IT LITTER CAMPAIGN

WAKE COUNTY DEPARTMENT OF ENVIRONMENTAL SERVICES

## 17. In your opinion, what age group is most likely to litter?

[READ CATEGORIES. SELECT ONLY ONE.]

- Teenagers ages 13 to 17? ..... ☐
- Adults ages 18 to 24? ..... ☐
- Adults ages 25 to 34? ..... ☐
- Adults age 35 and above? ..... ☐
- No particular age group ..... ☐
- Some Other Group? (SPECIFY) \_\_\_\_\_

## 18. How effective are the following strategies at discouraging people from littering? Please use the following categories... [READ CATEGORIES. SELECT ONLY ONE FOR EACH ITEM.]

	STRATEGY	LEVEL OF EFFECTIVENESS					Don't Know / No Opinion / Not App.
		Very Ineffective	Ineffective	Neither Ineffective nor Effective	Effective	Very Effective	
a.	Provide more trashcans in public places	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b.	Provide more educational programs about the litter problem	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c.	Increased enforcement of litter laws	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d.	Provide "litter hotline/websites" for citizens to report letter violations they observe	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e.	Public awareness campaigns	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f.	Provide additional funding for cleaning up litter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g.	Provide free car litterbags	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h.	Other (please specify)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## 19. How effective are the following strategies at discouraging people from littering?

[READ CATEGORIES. SELECT ONLY ONE FOR EACH ITEM.]

	STRATEGY	LEVEL OF EFFECTIVENESS					Don't Know / No Opinion / Not App.
		Very Ineffective	Ineffective	Neither Ineffective nor Effective	Effective	Very Effective	
a.	Show pictures of what Wake County would look like if nobody cleaned up litter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b.	Publicize that littering is harmful to the environment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c.	Remind people that litter is illegal and violators are subject to fines and community service	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d.	Have a slogan that evokes community pride	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e.	Inform citizens that it costs millions of taxpayer dollars each year to clean up litter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f.	Remind people that even a small amount of trash is still litter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2010 ATTITUDINAL SURVEY FOR 86IT LITTER CAMPAIGN  
WAKE COUNTY DEPARTMENT OF ENVIRONMENTAL SERVICES

19.	<b>How effective are the following strategies at discouraging people from littering?</b> [READ CATEGORIES. SELECT ONLY ONE FOR EACH ITEM.]						
	STRATEGY	LEVEL OF EFFECTIVENESS					Don't Know / No Opinion / Not App.
		Very Ineffective	Ineffective	Neither Ineffective nor Effective	Effective	Very Effective	
g.	Publicize that littering damages the image of our community	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h.	Tell citizens there is a toll-free number for them to report people who litter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i.	Use a famous person from the area to be an anti-litter spokesperson	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
j.	Tell people littering is not the right thing to do	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
k.	Publicize that citizens can "Adopt-A-Highway" and volunteer to clean up litter in the community	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
l.	Other (SPECIFY & RATE EFFECTIVENESS) _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

20.	<b>Have you seen, read, or heard any ads or public service messages related to litter or Littering in the last year?</b>
	<input type="checkbox"/> Yes ..... <input type="checkbox"/> No [SKIP TO Q24] ..... <input type="checkbox"/> Don't Know [SKIP TO Q24] .....

21.	<b>IF YES TO Q21: Where did you see, read, or hear the ad(s) or public service message(s)?</b> [LET RESPONDENT VOLUNTEER. SELECT ALL THAT APPLY.]
	<input type="checkbox"/> Radio ..... <input type="checkbox"/> Television ..... <input type="checkbox"/> Newspaper ..... <input type="checkbox"/> Internet ..... <input type="checkbox"/> Magazine ..... <input type="checkbox"/> Billboard ..... <input type="checkbox"/> Friend ..... <input type="checkbox"/> Don't Know/Can't Remember .....

22.	<b>What was (were) the main slogan(s) used? [ENTER EACH AS STATED.]</b>
	<input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> Don't Know/Remember ..... <input type="checkbox"/>

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WAKE COUNTY DEPARTMENT OF ENVIRONMENTAL SERVICES

23. Do you drive a pickup truck? [Refers to respondent's personal vehicle]

- Yes ..... ☐
- No [SKIP TO Q26] ..... ☐

24. If YES TO Q23: If you are hauling items in your truck bed, how often do you cover your truck bed to keep the items from falling out?

- Always ..... ☐
- Sometimes ..... ☐
- Never ..... ☐

For data analysis purposes, I would like to ask gather some background information:

25. What is the highest level of education you've completed?

- Grade school or less ..... ☐
- Some high school ..... ☐
- High school graduate/GED ..... ☐
- Some college ..... ☐
- College graduate ..... ☐
- Graduate school or higher ..... ☐
- Refused ..... ☐

26. What is your home zip code? [RECORD 5 DIGIT ZIP CODE]

\_\_\_ \_ \_ \_ \_

27. What is your work zip code? [RECORD 5 DIGIT ZIP CODE]

\_\_\_ \_ \_ \_ \_

28. What is your gender?

- Male ..... ☐
- Female ..... ☐

29. In what year were you born? [LET RESPONDENT VOLUNTEER. RECORD YEAR.]

\_\_\_ \_ \_ \_

30. How would you describe the home you currently live in? Is it: [READ CATEGORIES. SELECT ONLY ONE.]

- Owner occupied? ..... ☐
- A Rental? ..... ☐
- Other [SPECIFY] \_\_\_\_\_ ..... ☐
- Don't know ..... ☐

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**31. How many children or dependents do you have? Let respondent volunteer select only one**

- None..... ☐
- One..... ☐
- Two to Three..... ☐
- Four or more..... ☐

**32. What was your household income range (before taxes) in 2009?**

- Under \$20,000..... ☐
- \$21,000 to \$35,000..... ☐
- \$36,000 to \$45,000..... ☐
- \$46,000 to \$60,000..... ☐
- \$61,000 to \$75,000..... ☐
- \$76,000 to \$90,000..... ☐
- \$91,000 to \$105,000..... ☐
- \$106,000 and greater..... ☐

**33. Would you like to be included in our email database to receive updates on the upcoming anti-litter program in Wake County?**

- Yes ..... ☐
- No [IF NO, SKIP TO END]..... ☐

**34. IF YES TO Q33: What is your email address?**

\_\_\_\_\_

**THAT CONCLUDES THE INTERVIEW. THANK YOU FOR YOUR PARTICIPATION!**

# APPENDIX D

## INTERNET SURVEY OPEN-ENDED RESPONSES



## APPENDIX D

### INTERNET SURVEY: OPEN-ENDED RESPONSES

#### AREAS WHERE LITTER IS MOST OFTEN SEEN: RESPONDENT COMMENTS (Q4)

- Everywhere! BUT Lochmere Drive was made a thoroughfare and the non-residents are the litterers.
- There are cigarette butts everywhere.
- All of the above.
- The litter problem is absolutely horrible....shameful!
- Graffiti.
- Buffaloe Rd, Wake Forest Rd, All Secondary Roads in Wake County and Hwy 64 east - Middle Median of all Highways.

#### AREAS WITH THE GREATEST LITTERING PROBLEM: RESPONDENT COMMENTS (Q5)

- Almost impossible to answer. Almost all roads. I pick up litter at my house on Kaplan Dr. on an almost daily basis.
- At lights.
- Capital Blvd.!!!!!!
- Everywhere. The litter reminds me of a third world country.
- Everywhere.
- I see most litter on I-40 but also seems to be cleaned up more often.
- Where there are no houses or buildings there is litter.
- Access roads to 264 such as Smithfield Rd and others.
- Areas next to stop lights or stop signs; store parking lots; roadsides in general.
- Event parking lots.
- Not sure.
- Parks and greenways.
- Several of above, including interstate, state, secondary, streams lakes and other waterways are all terrible.

#### MOST LITTERED ROADWAYS/ROADWAY SEGMENTS IN WAKE COUNTY: RESPONDENT COMMENTS (Q6)

- 1. Glascock St. between State St. and King Charles Blvd. 2. The entire length of Raleigh Blvd. situated inside the beltline 3. West St. between Hillsborough and Martin / Davie.
- 1-540 from Leesville Road east & west!
- 40 east exit for Cary/Sanford/Asheboro.
- 401 in Garner is usually a mess. There is glass and other debris all over the road.
- 440 and 40 between Raleigh and Clayton.
- 440 and 540.
- 440 at Wake Forest Exit.
- 540 at any point.
- 540 at Capital Blvd exit I 40 towards Benson.
- 540 ext (401) to ext (Falls of Neuse) capital blvd. are roads are a trash dump visitors can not believe what they see. Bags of household trash along the roadway.
- 540 from Leesville to Capital.
- 540 is a trash magnet. It is utterly embarrassing picking up guests from the airport.
- 540 is bad, including the on/off ramps.
- 540 is generally the worst. Just alot of trash and an ugly road overall.

## APPENDIX D

### INTERNET SURVEY: OPEN-ENDED RESPONSES

MOST LITTERED ROADWAYS/ROADWAY SEGMENTS IN WAKE COUNTY: RESPONDENT COMMENTS (Q6)
<ul style="list-style-type: none"> <li>➤ 540 is worst due to increased traffic flow, construction and regular trucks and considerable tire debris.</li> <li>➤ 64 and 55 in Apex.</li> <li>➤ All along I-40 between Chapel Hill and Poole Rd. On/off ramps at Hy-64 &amp; Tyron rd. On/off ramp @ wheeler rd.</li> <li>➤ All along I-40 between Lake Crabtree and the I-40/440 split! Terrible!</li> <li>➤ All along the beltline.</li> <li>➤ All of 440, 540,40 it is everywhere.</li> <li>➤ All of I 40 and all of I440--it is a mess.</li> <li>➤ All of I-40 especially from Raleigh to eastern Wake County.</li> <li>➤ All of the I-440 beltline.</li> <li>➤ Along most of the stretch of I-440.</li> <li>➤ All of them.</li> <li>➤ All over.</li> <li>➤ All roads that I travel are affected, doesn't matter if highway or secondary road. It's a terrible problem.</li> <li>➤ Any street in the poorer neighborhoods.</li> <li>➤ Around Moore Sq and in the neighborhood just to the east.</li> <li>➤ Beltline.</li> <li>➤ Capital Blvd at Perry Creek Road.</li> <li>➤ Capital Blvd. from 540 north to Wake Forest, NC.</li> <li>➤ Capital Blvd. N and S.</li> <li>➤ Capital Blvd. There is no segment that is litter free.</li> <li>➤ Capital Boulevard (US 1) between Wake Forest and Raleigh.</li> <li>➤ Clarendon Crescent - especially now that school is back in session.</li> <li>➤ Close to groups of fast food restaurants and convenience stores.</li> <li>➤ Close to high schools.</li> <li>➤ Disturbing increase on I-440 Wake Forest Rd. exit, New Hope Church Rd. and I-40 between Pool Rd and Rock Quarry Rd exits.</li> <li>➤ Every where, Cary, Raleigh, RTP I am a bike rider and you see so much litter when riding a bike. Also, a few years ago I rode the train from Cary to Charlotte; I could not believe all the litter.</li> <li>➤ Highway 1 between Apex and Cary exits.</li> <li>➤ Highway 401 South into Fuquay Varina.</li> <li>➤ Household trash litters are roads. It's not uncommon to see trash bags several times per week in different locations along 401 and 540.</li> <li>➤ Hwy 55 near the South Wake Landfill.</li> <li>➤ Hwy 55.</li> <li>➤ Hwy 64 along Jordan Lake (is that still Wake Co?).</li> <li>➤ Hwy. 64 East near the exits numbered 430 and up.</li> <li>➤ I 440 between Hwy 64 and Wade Avenue exit. Extremely nasty and the graffiti is gross. Plus painting over the graffiti on the brick sound barrier walls a different makes no sense either.</li> <li>➤ I 440.</li> <li>➤ I -540 along the northern section and I-40 coming into Raleigh from the east.</li> <li>➤ I -540 especially from Leesville Rd to Capital.</li> <li>➤ I am being inconsistent but Crabtree Creek seems to have lots of accumulation between the volunteer sweeps.</li> </ul>



## APPENDIX D

### INTERNET SURVEY: OPEN-ENDED RESPONSES

MOST LITTERED ROADWAYS/ROADWAY SEGMENTS IN WAKE COUNTY: RESPONDENT COMMENTS (Q6)
<ul style="list-style-type: none"> <li>➤ I don't know since I drive primarily on secondary roads and cannot really compare.</li> <li>➤ I don't see much litter, Often there are people picking it up.</li> <li>➤ I frequent Avent Ferry Rd and Gorman St area most often and have found them to be littered quite a bit.</li> <li>➤ I frequently travel US1 so see litter there most often.</li> <li>➤ I know there has been an issue w/medians, but there are the worst on the Beltline and Rt. 40.</li> <li>➤ I see a lot along Spring Forest Rd between Atlantic and Falls of the Neuse. Also, I've noticed there is a lot of litter in the morning on Hillsborough Street across from NC State -- looks really bad on the new brick sidewalk!</li> <li>➤ I use parks and greenways more than roads.</li> <li>➤ I'm so grateful you're having a "clean up" campaign/project.....trash is everywhere now!</li> <li>➤ I've given this a lot of thought and can't name just one segment. Litter is a growing and significant problem and we need a major campaign.</li> <li>➤ I40 &amp; rte. 70; I 40 &amp; rte. 401; I40 &amp; rte. 42; rte. 42 in Wake County.</li> <li>➤ I-40 and I-540.</li> <li>➤ I-40 and US 64 but most of the major state highways and roads in Raleigh have a severe problem with litter.</li> <li>➤ I40 as it runs just south of downtown where it is also the beltline.</li> <li>➤ I-40 between 285 and 300.</li> <li>➤ I-40 between Durham and Raleigh.</li> <li>➤ I-40 between Gorman and South Saunders streets.</li> <li>➤ I-40 Between Harrison Ave. and the Clayton exit. It's horrible!</li> <li>➤ I-40 between Hwy 1 and Rock Quarry Road.</li> <li>➤ I-40 between I-440 and Johnston County.</li> <li>➤ I-40 between Poole Rd and Gorman Street.</li> <li>➤ I-40 between Raleigh and I-95.</li> <li>➤ I40 Crossroads to South Saunders.</li> <li>➤ I-40 East between Lake Wheeler Rd and the 440 split.</li> <li>➤ I-40 Eastbound from Downtown Raleigh toward I-95 seems to be filled with random litter, I know that's not all of Wake County, but I notice it as I drive to the beach.</li> <li>➤ I-40 from city line into Johnston County and beyond.</li> <li>➤ I-40 from Clayton, I-540 from Leesville to Capital.</li> <li>➤ I-40 from Raleigh to I-95.</li> <li>➤ I-40 from Raleigh to Johnston County.</li> <li>➤ I-40 I get on at 291 and travel around the beltline, 440. It has become very embarrassing to see such litter. In the past 2 years I have traveled to ME, through CT, NY, NJ, DE, VA, and to AZ, and TX. Major cities and roads are spotless I found. Dallas is exceptional as is Phoenix. NJ Turnpike is striking in the lack of litter. I feel embarrassed when my family and friends come to visit me and we take 40-440.</li> <li>➤ I-40 south of Raleigh to beyond the Hwy 42 exit.</li> <li>➤ I40 south to Benson.</li> <li>➤ I40 south.</li> <li>➤ I-40 the Cary exits.</li> <li>➤ I-40 through Cary has a lot of litter at times between Harrison &amp; Rte. 64. I-440 from Cary toward Glenwood also seems to have a lot of litter at times.</li> <li>➤ I-40 throughout Wake County. The entire length of I-540 is terrible. Medians rarely cleaned. In addition to a major litter problem, weeds and grass so overgrown in some areas you can't even see the guardrails.</li> <li>➤ I40, 540, 440 -- they are all bad and continue to grow in liter each year.</li> </ul>

## APPENDIX D

### INTERNET SURVEY: OPEN-ENDED RESPONSES

MOST LITTERED ROADWAYS/ROADWAY SEGMENTS IN WAKE COUNTY: RESPONDENT COMMENTS (Q6)
<ul style="list-style-type: none"> <li>➤ I-40, Airport Corridor.</li> <li>➤ I-40.</li> <li>➤ I-40.</li> <li>➤ I-40.</li> <li>➤ I-40/4440, the whole thing. The amount of trash is crazy! It is gross and shameful. I see some litter pick up happening, but it does not seem to be enough. Some of this trash is actually broken down Vehicles, in fact I once counted 18 between Exit 287 a.</li> <li>➤ I-440 and Glenwood Ave around Crabtree area.</li> <li>➤ I-440 around the City and I-40. It seems the Wake County section is more littered than Durham or Orange counties.</li> <li>➤ I-440 between Glenwood and Capital I-540 between Creedmoor and Capital.</li> <li>➤ I-440 between Glenwood and Capital.</li> <li>➤ I-440 between Six Forks and Wade Ave. exit.</li> <li>➤ I-440 between Wade Avenue and Poole Road and I-40 from Wade Avenue to RTP.</li> <li>➤ I440 between Wade Extension to 1/64.</li> <li>➤ I-440 between Wake Forest and Poole Road.</li> <li>➤ I440 between Wake Forest Rd &amp; Gorman St. Also the 264 bypass &amp; 540 are NASTY.</li> <li>➤ I-440 exit from Western Boulevard towards Cary.</li> <li>➤ I-440 near the split with I-40 always looks pretty bad.</li> <li>➤ I-440 Poole Rd. to Blue Ridge Rd.</li> <li>➤ I-440 Western Blvd to Cary and I-540 all of it!!!</li> <li>➤ I-440.</li> <li>➤ I-540 between Capital Blvd and I-440.</li> <li>➤ I-540 between Capital Boulevard and Six Forks.</li> <li>➤ I-540 between Creedmoor and Falls of Neuse and I-40 coming in from the east to 440.</li> <li>➤ I-540 between Falls of Neuse and Leesville Rd always has excessive litter.</li> <li>➤ I540 between Falls of Neuse and US70.</li> <li>➤ I-540 between Glenwood Ave. &amp; Capital Blvd.</li> <li>➤ I-540 between Leesville Rd and Capital and I-40 coming into Raleigh from Garner.</li> <li>➤ I-540 between Leesville Road and US70.</li> <li>➤ I-540 especially between the Leesville Rd and Capital and also I-40 coming in from Garner/Clayton.</li> <li>➤ I-540 from the airport to Capital.</li> <li>➤ I-540 in general.</li> <li>➤ I-540 mainly between Creedmoor and Falls of Neuse. There is a lot of trucks that go to the dump on Durant and drop all sorts of debris along this route.</li> <li>➤ I-540, entire extent from Capital Blvd. exit to RDU exit.</li> <li>➤ I-540.</li> <li>➤ I-540.</li> <li>➤ I-540.</li> <li>➤ I-540.</li> <li>➤ Intersection of New Light Road &amp; Ghaston Road.</li> <li>➤ Intersection of Peace &amp; Glenwood.</li> <li>➤ Intersection of Rte 540 ramps and US1.</li> </ul>

## APPENDIX D

### INTERNET SURVEY: OPEN-ENDED RESPONSES

MOST LITTERED ROADWAYS/ROADWAY SEGMENTS IN WAKE COUNTY: RESPONDENT COMMENTS (Q6)
<ul style="list-style-type: none"> <li>➤ It's all pretty bad- closest to me is Western Blvd, but Hillsborough near NCSU is really disgusting.</li> <li>➤ It's pretty hard to make such a determination since most of us do not travel all over the county and thus cannot see all the trash. There may be more trash on roadways other than the ones I frequent, but larger highways have the most. Since the housing bust, there are fewer building materials, like chunks of insulation, large sheets of plastic, plastic buckets etc.</li> <li>➤ Jordan Lake Game Lands - all roads surrounding, especially near the lake.</li> <li>➤ Lake Woodard Dr, I 440.</li> <li>➤ Longstreet Drive and other streets near Six Forks Road.</li> <li>➤ Maywood Avenue.</li> <li>➤ Melbourne Rd. between New Bern Ave. and Shanta Dr.</li> <li>➤ More litter due to 540 especially the northern part from the airport to I-64.</li> <li>➤ Most of I-40.</li> <li>➤ Much litter along 540. All the time it seems. Mainly from Leesville Rd. to Capital or 401.</li> <li>➤ NC 54 Cary into RTP.</li> <li>➤ NC 55 between High House Rd and US 64.</li> <li>➤ NC 55 Between NC 401 and Harnet County line.</li> <li>➤ NC 98 in an area of about +/- 5 miles of the Wake County waste and recycling facility.</li> <li>➤ NC98 between US1 and Heritage Lake Road.</li> <li>➤ Newbern between 440 and Raleigh Blvd.</li> <li>➤ No.</li> <li>➤ Northern stretch of 540.</li> <li>➤ Northern stretch of 540.</li> <li>➤ Not sure.</li> <li>➤ Off ramps: 440N at Wade Ave and 440N at Glenwood.</li> <li>➤ Old Stage Rd between Fuquay Varina and Garner (between Hwy 401 and Hwy 42).</li> <li>➤ Old Stage Road approaching the Recycle center.</li> <li>➤ On a day to day basis, littering is most irritating on Jessie Street, off of Ten-Ten Road and along the gas pipeline. I walk my dog daily. While I actively pick up garbage, I am shocked how much garbage occurs overnight. The gas pipeline is a nightmare.</li> <li>➤ On I 40 between Gorman St. and Rock Quarry Rd.</li> <li>➤ Raleigh Beltline, inside the barrier and on the outside of the lane. Landscaping looks very bad.</li> <li>➤ Raleigh exits.</li> <li>➤ Ramp US1 Western Blvd. NCSU Off On ramps US 1 on Cary exits Walnut Street, Cary, PKW. Crossroads exits.</li> <li>➤ Rock Quarry Rd. from New Hope Rd. to Auburn-Knightdale Rd. Also I-40 from Co. Line thru Raleigh.</li> <li>➤ Route 55 south of Apex near the rte 1 interchange.</li> <li>➤ Rt. 1 (Capitol Blvd) and Durant Road at traffic lights and mediums.</li> <li>➤ Rt. 540 is a mess.</li> <li>➤ rte 40between Lake Wheeler Rd and Harrison Ave.</li> <li>➤ Rte 540 &amp; US1 off ramp intersection.</li> <li>➤ Rte. 1/64 from 40 to 64 split.</li> <li>➤ S Saunders to I-40 split 302.</li> <li>➤ Skycrest Dr &amp; Hill St.</li> </ul>

## APPENDIX D

### INTERNET SURVEY: OPEN-ENDED RESPONSES

MOST LITTERED ROADWAYS/ROADWAY SEGMENTS IN WAKE COUNTY: RESPONDENT COMMENTS (Q6)
<ul style="list-style-type: none"> <li>➤ Skycrest Road in Raleigh.</li> <li>➤ Smithfield Rd, Knightdale, NC.</li> <li>➤ Sometimes I fill our yard is a waste dump.</li> <li>➤ Southern Beltline.</li> <li>➤ Southern part 440/40 is usually the worst I see regularly.</li> <li>➤ Southern side of the beltline.</li> <li>➤ The interstate highways in Wake County are disgusting. Not only are they the trashiest in the state, they are probably the worst in the country. How can a county as progressive as Wake allow this to be? If the roads were cleaned on a regular basis maybe people would think twice about littering. It is an embarrassment when people come to visit.</li> <li>➤ There may be worse littering in other areas, but my choices are the places I frequent. Since the housing bust litter has decreased - i.e. fewer building materials, like large chunks of insulation and plastic and buckets are seen. And this stuff was pretty.</li> <li>➤ They all seem about the same.</li> <li>➤ Too many to list.</li> <li>➤ US 1 - Between Walnut St., Cary and Highway 55 in Apex.</li> <li>➤ US 1 and 64 south.</li> <li>➤ US 1 from SR 1010 to Wade Avenue.</li> <li>➤ US 1 from Ten-Ten Road to Western Boulevard is an absolute eye sore! The clover leaves at each of those sections are also filthy!</li> <li>➤ US 1 in Apex between Tryon and 55.</li> <li>➤ US 1 in Apex from Hwy 55 to Tryon Road in Cary. I think it's because the landfill is in Holly Springs and you see many garbage trucks going down the road. I've personally seen garbage flying from them.</li> <li>➤ US 1 south and 55 east toward the landfill.</li> <li>➤ US 1 stretch between Crossroads and Apex 55 exit. I-40 Airport Blvd. to Benson.</li> <li>➤ US 1.</li> <li>➤ US 64 / New Bern Ave. and U.S. 1 / Capital Blvd.</li> <li>➤ US One from the Walnut Street exit south to the Tryon Road/US 64 exit. This whole area is typically a disgrace including the off ramp to Tryon Road.</li> <li>➤ US1 AND 540.</li> <li>➤ US1 between Apex and Cary, especially along the hideous concrete wall that serves as lane separator.</li> <li>➤ US-1 between NC-55 and I-40.</li> <li>➤ US1 between Tryon Rd and Capitol Blvd.</li> <li>➤ US1 in Cary area.</li> <li>➤ US64.</li> <li>➤ Vicinity of I-40 and Rte. 1 South/Rte. 64 West (because this is a section I drive most often).</li> <li>➤ Wade Ave extension to I-40.</li> <li>➤ Wade Ave. near RBC Center.</li> <li>➤ Western Blvd, Capital Blvd.</li> </ul>

## APPENDIX D

### INTERNET SURVEY: OPEN-ENDED RESPONSES

#### MAIN SOURCES OF LITTER IN WAKE COUNTY: RESPONDENT COMMENTS (Q7)

- People (in general).
- All the above.
- All of the above listed.
- Construction vehicles.
- I think the most litter is coming off of trucks that are used for construction - large and small as well as from the passengers in those trucks.
- Fast food & bottles & cans.
- Pickup trucks & commercials vehicles.
- All of the above.
- Garbage trucks and uncovered pickup trucks.
- Recycle trucks are the worst!!!
- Passenger cars, pick-up truck moving stuff and bed or cargo area of commercial vehicles.
- Also bed of pick-up trucks.
- Uncovered truck beds AND drivers/passengers of personal vehicles.
- Ripped tires, dead deer, furniture, mattresses, plastic, Styrofoam of all kinds.
- Pickups yes, but also passenger cars both really bad.
- Illegal campers, swimmers, fishermen & women, Greenway visitors.
- Passenger or drivers in vehicles and homeless individuals the camp in the wooded areas near the interstate.
- People fishing.
- I am not sure.
- No state clean-up for many years- looks terrible.
- Cars AND uncovered transports.
- Debris from vehicles involved in accidents that is just left there.
- Uneducated people.
- All of the above.
- Citizens simply dumping their trash on the roadside.
- Both people just throwing trash out of windows and trucks losing stuff. Also there are pieces of truck tires everywhere.
- Mexicans.
- Road debris, car parts from accidents.
- Personal vehicles AND uncovered truck beds.

## APPENDIX D

### INTERNET SURVEY: OPEN-ENDED RESPONSES

MATERIALS SIGNIFICANT AS PART OF THE LITTER PROBLEM: RESPONDENT COMMENTS (Q8)
<ul style="list-style-type: none"> <li>➤ Large pieces, i.e. furniture, crates, buckets.</li> <li>➤ Litter that fall of pick-up trucks intentionally.</li> <li>➤ Rubber from tires.</li> <li>➤ Trash from uncovered vehicles being transported to the recycling center on Old Stage road.</li> <li>➤ Broken glass and debris from motor vehicle accidents.</li> <li>➤ Mattresses, furniture.</li> <li>➤ Equipment, appliances and other items that people are too lazy to take to the landfill.</li> <li>➤ Intentionally dumped bags of garbage.</li> <li>➤ Mattresses and Tires.</li> <li>➤ Broken Down Cars and Trucks etc.</li> <li>➤ 5 gallon paint buckets.</li> <li>➤ Plastic paint buckets.</li> <li>➤ Many buckets and construction debris.</li> <li>➤ I have noticed that on neighborhood streets where construction is going on that the construction workers leave their lunch trash all around and then it blows around to other areas.</li> <li>➤ Car and truck tires.</li> <li>➤ Truck tire retreads.</li> <li>➤ Old furniture, tires.</li> <li>➤ Discarded furniture, tires, mattresses.</li> <li>➤ Litter from recycle trucks.</li> <li>➤ Huge pieces of furniture!!!</li> <li>➤ House hold trash thrown on the side of road.</li> <li>➤ Election signs not removed after elections; makeshift signs by people.</li> <li>➤ Furniture and household goods.</li> <li>➤ Water Bottles full of Tobacco Spit, and anything from Bo Jangles.</li> <li>➤ Rubber tire tread.</li> <li>➤ Pickups know they are doing it. They stop at a light and toss something out the cabin window in to back. As soon as they take off it flies out. I see it all the time and hate it.</li> <li>➤ Shred recap tires from trucks.</li> <li>➤ Furniture, large pieces of foam, cushions, etc.</li> <li>➤ Tire casings from trucks.</li> <li>➤ Debris from automotive/truck tires.</li> <li>➤ Tire treads, crash debris.</li> <li>➤ Furniture left on 540.</li> <li>➤ Ripped tires seem to be omnipresent.</li> <li>➤ Tires and car parts from poorly maintained vehicles.</li> <li>➤ DOT debris, such as barrels and cones, that is never cleaned up even after the road is finished.</li> <li>➤ Along Jessie I have often found medicine containers and oil containers.</li> <li>➤ Dog poop.</li> <li>➤ Car tires- parts.</li> <li>➤ Dog feces.</li> <li>➤ Furniture, clothes.</li> </ul>

## APPENDIX D

### INTERNET SURVEY: OPEN-ENDED RESPONSES

<b>MATERIALS SIGNIFICANT AS PART OF THE LITTER PROBLEM: RESPONDENT COMMENTS (Q8)</b>
<ul style="list-style-type: none"> <li>➤ Discarded furniture, appliances etc.</li> <li>➤ It usually takes a day for our neighborhood to recover from Raleigh’s trash &amp; recycling collection.</li> <li>➤ Overgrown grass, mud and plain old dirt.</li> <li>➤ Furniture.</li> <li>➤ Vehicle parts, i.e. tire pieces, body parts, glass, etc.</li> <li>➤ Cigarette packages, tobacco ‘chew’ containers.</li> <li>➤ I commute from on I-40 from Wade Avenue exit to RTP every day and I always see at least one person throw cigarette butts out their window. Every day I see this. I don’t understand how adults think it is acceptable to throw their cigarette butts out the window. Don’t they know it’s littering too?</li> <li>➤ Tire treads.</li> <li>➤ Tires and re-treads.</li> <li>➤ Mattresses, furniture, fast food wrappers.</li> <li>➤ Retreads.</li> <li>➤ Packing peanuts.</li> <li>➤ For some reason, also tire parts.</li> <li>➤ Mattresses!</li> <li>➤ Tire and tire parts.</li> <li>➤ Tires.</li> </ul>

<b>RECALLED LITTER REDUCTION PROGRAMS: RESPONDENT COMMENTS (Q16i)</b>
<ul style="list-style-type: none"> <li>➤ Town of Morrisville Litter Sweeps.</li> <li>➤ Police giving out tickets for littering.</li> <li>➤ Neuse River Cleanup.</li> <li>➤ Neuse River clean up.</li> <li>➤ Have volunteered with KAB and Big Sweep.</li> <li>➤ I was an Adopt-a-Highway volunteer for 5 years.</li> <li>➤ River Clean ups.</li> <li>➤ Neuse River and Falls Lake clean up.</li> <li>➤ Feed the Bin at our elementary school.</li> <li>➤ Me- I pick up litter in front of my house all the time!</li> <li>➤ Watershed clean-up-Black Creek.</li> <li>➤ City of Raleigh “Adopt a Greenway”.</li> <li>➤ Raleigh Parks and Recreation adopt a greenway.</li> <li>➤ I have been picking up litter in my neighborhood for the past 8 months as I take my walk- I can give you information about the types of litter that I find and problems that contribute to the issue.</li> <li>➤ My family adopted #1010 between Kildaire Rd and Holly Springs for a number of years.</li> <li>➤ Don’t Mess with Texas.</li> <li>➤ Whatever happened to the great slogans like “Give a hoot, don’t pollute”?</li> <li>➤ Adopt-a-stream.</li> <li>➤ Keep NC Beautiful, NC Beautiful.</li> <li>➤ River cleanup although I don’t know which program.</li> </ul>

## APPENDIX D

### INTERNET SURVEY: OPEN-ENDED RESPONSES

#### GROUPS LIKELY TO LITTER: RESPONDENT COMMENTS (Q17)

- Smokers.
- Crews working in neighborhoods passing through.
- I'd say a bigger range -- Maybe 15-35 yrs.
- All above.
- I think people who come from other countries that are not use to worrying about litter cause a great deal of the trash on the roads.
- All age slobs!
- Smokers.
- It is all ages.
- Most smokers do butts.
- Individuals in all age groups are likely to litter if they haven't been educated in how to take care of the environment and to be responsible for properly disposing of their trash.
- Any age smokers.
- Hispanics.
- Alcoholics who throw out bottles before arriving home; narcissistic ignorant uncaring people who could not care less if they litter.
- Young adults also people from outside the states bring in their bad habits.
- 13-34.
- Immigrants who do not care about our country.
- Ages 13 to 24.
- People of all ages who don't care.
- State?/Federal? Road crews.
- Mexicans seem to litter more, no offense to anyone.
- Mexicans.
- Smokers seem to throw out butts at intersections--need more green lights! Construction workers with pickups who do not secure their load with straps/tarps/nets or who throw their wrappers in open bed of truck.
- Workers and trucks.
- Illegal immigrants do not care about creating litter.
- Pick up drivers, commercial drivers, construction.



## APPENDIX D

### INTERNET SURVEY: OPEN-ENDED RESPONSES

STRATEGIES FOR REDUCING LITTER (Q18H & Q19L): IMPOSE LEGAL ACTION/LEGAL CONSEQUENCES FOR LITTERING	
➤	Add a massive tax to cigarettes to pay for picking up all the butts smokers drop all over our county!!!
➤	Tax fast food.
➤	At vehicle inspection require demonstration of bed covers for pickups.
➤	Crackdown on trucks hauling debris without a cover to prevent material from blowing out
➤	Enforce covering loads on trucks
➤	Discourage use of plastic bags or ban them county-wide.
➤	Ban plastic water bottles and plastic store bags.
➤	Traffic cameras
➤	Cameras
➤	Cameras
➤	Cameras?
➤	Road cameras
➤	Cameras.
➤	Place cameras along roads to catch litterers
➤	Cameras at intersections to spot and fine
➤	Cameras
➤	Use red light cameras and officers on off and on ramps.
➤	Road cameras
➤	Cameras
➤	Cameras
➤	Mandatory hours to pick up road side litter have license renewed or gotten in the first place!
➤	Make the litter bugs do community service picking up litter
➤	People cot need to pick up for 8 hours, not fines, if able
➤	Enforcement with litter clean-up as punishment
➤	Enforce the law and have the litterbug pick up litter. Community service rather than a monetary fine.
➤	Punishment for littering should include community service picking up trash
➤	Punishment for littering = mandatory litter pick-up
➤	Road crew duty for offenders
➤	Make truckers pickup their blown tires.
➤	Everyone caught littering should have to clean a mile of highway
➤	Implement a mandatory 6 hours of picking up litter. Enforce it!! NO EXCEPTIONS Our litter problem would disappear.
➤	Make repeat violators go out to pick up litter themselves
➤	Increase penalties and enforcement
➤	West Virginia's punishment includes \$25000 fine. VERY little litter in West Virginia...little in most other states. NC is terrible.
➤	Enforcement with large fines. Money talks. A \$200 fine for a first offense would be a deterrent. A warning would not. If we want to treat the litter problem as serious, then back it up.
➤	Raise litter fine amounts.
➤	Increase littering fines to up to \$1000
➤	Enforce the \$100 ticket. It worked for seat belts why not littering.
➤	Implement \$300.00 fine for littering. Enforce it!! NO EXCEPTIONS Our litter problem would disappear.
➤	Stronger financial penalties for littering roads and waterways

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### INTERNET SURVEY: OPEN-ENDED RESPONSES

STRATEGIES FOR REDUCING LITTER (Q18H & Q19L): IMPOSE LEGAL ACTION/LEGAL CONSEQUENCES FOR LITTERING
<ul style="list-style-type: none"> <li>➤ Increase fines along with increased enforcement.</li> <li>➤ High fines for littering</li> <li>➤ Fines</li> <li>➤ Issuing fines when someone litters, at the time there is no penalty for littering b/c it is so rarely enforced.</li> <li>➤ Make heavy fine for every offense.</li> <li>➤ Increase fines for littering.</li> <li>➤ 1000 fines..works in many states!!!</li> <li>➤ Fines for littering and enforcement</li> <li>➤ Increased fines.</li> <li>➤ Increased fines</li> <li>➤ Get the inmates in prison to do it since we are paying for them anyways</li> <li>➤ Prisoners, prisoners, prisoners!!!!</li> <li>➤ Use prisoners</li> <li>➤ Stronger litter laws</li> <li>➤ Fire the recycle workers that just don't care if trash makes it in or not....</li> <li>➤ Require covers on open trucks</li> <li>➤ Judges need to apply punishments.</li> <li>➤ Laws to force pickup trucks, etc., to be covered.</li> <li>➤ West Virginia's punishment includes driver license points and jail. VERY little litter in West Virginia...little in most other states. NC is terrible.</li> <li>➤ More laws</li> <li>➤ Make points against drivers license.</li> <li>➤ Have all municipalities in their area do their part in enforcing</li> <li>➤ Have a penalty for littering</li> <li>➤ Increase fines</li> <li>➤ Actually enforce existing laws</li> <li>➤ Cops should have cigarette litter enforcement day undercover!!!</li> <li>➤ Increased fines</li> <li>➤ Still, I believe the people who intentionally litter are ignorant and disrespectful citizens and virtually nothing (except threat of legal retaliation) would make a difference. Not littering is not rocket science. One either litters or not. I have never littered in my entire life. I believe if I drop something, I pick it up. If I break something, I fix it. And so forth.</li> <li>➤ Increase fines</li> <li>➤ Steep fines</li> <li>➤ Heavy fines, fines per ounce of litter</li> <li>➤ Without teeth who cares about the watchdog?</li> <li>➤ 1) increase the fine! The lowest fine should be \$1000...have it go up to \$25000.</li> <li>➤ As I said before, you MUST have a large fine for a first offense. Most people who litter do not care so "educating" them to care won't work. If I know that if I get caught throwing out a gum wrapper and it will cost me \$200, I'm going to care. Stop cajoling and warning. Doesn't work. Make people pay.</li> <li>➤ Big fines that are ENFORCED</li> <li>➤ Enforcement of littering laws is a key factor.</li> <li>➤ Stiff penalties.</li> </ul>

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### INTERNET SURVEY: OPEN-ENDED RESPONSES

STRATEGIES FOR REDUCING LITTER (Q18H & Q19L): IMPOSE LEGAL ACTION/LEGAL CONSEQUENCES FOR LITTERING	
<ul style="list-style-type: none"> <li>➤ Increase fine</li> <li>➤ Just came back from Denver. Very clean. BIG BIG FINES IF YOU LITTER.</li> <li>➤ Actually enforce litter fines - garnish wages from garbage truck/recycle employees</li> <li>➤ Increase fines to \$1000 for a private vehicle and \$2500 for a commercial vehicle.</li> <li>➤ Large fines for commercial trucks littering</li> <li>➤ Enforce the law and charge bigger fines</li> <li>➤ Heavy fines</li> <li>➤ Increase the penalty for littering</li> <li>➤ Unfortunately, people's values have changed and littering is not important in people's busy lives. The only way is to have law enforcement ticket people and once the word got out, I think people will finally listen.</li> <li>➤ Increase fines for violators</li> <li>➤ I don't think people should spend days off and to pick up litter. Wake County could use the revenue, Start fining business and people. Any time it cost a business money or people money it is effective</li> <li>➤ Occasional Litter Checkpoints like DWI checkpoints.</li> <li>➤ Cameras</li> <li>➤ Cameras</li> <li>➤ Road camera enforcement</li> <li>➤ Cameras</li> <li>➤ Threaten points on drivers licence and jail time. THERE IS NOT ANY REASON TO LITTER...NONE!!!!</li> <li>➤ Take away drivers license</li> <li>➤ Loss of license until fine is paid. That would END LITTERING and solve a budget crisis.</li> <li>➤ Charge apartment complexes for too many dwellers not recycling or providing enough dumpsters, More young people live in apartment complexes and condos and even when they were taught and trained to recycle at in home and at school when they move into these places they get lazy and like the convenience of not recycling. They unlearn what they learned and turn into the worst offenders.</li> <li>➤ Cops would be required to clean up, not fines</li> <li>➤ Create a follow up program for violators by including them in pickup crews</li> <li>➤ Disallow styrofoam products and thin plastic bags</li> <li>➤ Prisoners!!!!</li> <li>➤ Continue with prison clean ups</li> <li>➤ Need to pass a law requiring that construction trucks be covered.</li> <li>➤ Tough laws</li> <li>➤ Enact covered truck law</li> </ul>	

STRATEGIES FOR REDUCING LITTER (Q18H & Q19L): PROVIDE EDUCATION ABOUT LITTERING FOR ADULTS AND YOUTH	
<ul style="list-style-type: none"> <li>➤ Direct educational toward children as part of caring for our environment program children will nag parents as they do about parents' smoking</li> <li>➤ To be raised right from birth!!!</li> <li>➤ Target education toward young children.</li> <li>➤ Education in school</li> <li>➤ Teach anti-litter message in elementary schools</li> <li>➤ Start educating in Kindergarten.</li> </ul>	

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### INTERNET SURVEY: OPEN-ENDED RESPONSES

<b>STRATEGIES FOR REDUCING LITTER (Q18H &amp; Q19L): PROVIDE EDUCATION ABOUT LITTERING FOR ADULTS AND YOUTH</b>
<ul style="list-style-type: none"> <li>➤ Start teaching children in preschool and kindergarten with a planned no littering curriculum</li> <li>➤ Education in schools on litter control</li> <li>➤ Ongoing programs in public schools</li> <li>➤ I think education is important - people who litter either don't realize how much their "one piece of paper" adds up or they don't care. We can put all the tools out there for them to use to put their litter, but if they don't know or care, they won't use them. Show people what their litter does and perhaps they will begin to understand and care and act.</li> <li>➤ Educational programs are great if aimed at the proper demographic</li> <li>➤ We have to make them understand issues we face due to littering. Current and for future</li> <li>➤ I was raised in the 70's during which we were taught not to litter. I don't litter and I report litterbugs.</li> <li>➤ Work with local cultural community groups to educate about litter</li> <li>➤ Provide ongoing ed. Classes in schools - k-12</li> <li>➤ Involve schools, teach awareness in lower grades</li> <li>➤ Educate children, thus parents</li> <li>➤ Education in elem schools...kids will bust parents!</li> <li>➤ Educate as to the safety hazards of debris flying out of trucks</li> <li>➤ Please educate the immigrant community.</li> <li>➤ Need to target an information program toward businesses who may unintentionally litter</li> <li>➤ Education in schools and car dealerships</li> <li>➤ Teach anti-litter in primary, elementary &amp; high schools</li> <li>➤ Start educating early in life, because their parents don't get it!</li> <li>➤ See answer above - start education young</li> <li>➤ Educate at the elementary schools for the future</li> <li>➤ School education ( like the harm in smoking education )</li> <li>➤ Require school age children to pick up trash as part of their education. Parents are NOT teaching their children.</li> </ul>

<b>STRATEGIES FOR REDUCING LITTER (Q18H &amp; Q19L): INCREASE PUBLIC AWARENESS ABOUT LITTERING</b>
<ul style="list-style-type: none"> <li>➤ Alert garbage truck staff to unintentional littering problem</li> <li>➤ Educate truck drivers that stuff in their truck will fly out on the highway.</li> <li>➤ Install more "Littering is illegal" signs and the amount of the fine.</li> <li>➤ Signs</li> <li>➤ Signs</li> <li>➤ Do not litter signs</li> <li>➤ More signs</li> <li>➤ Erect signs with fines for littering</li> <li>➤ Signs at major intersections where folks dump cigarette butts!!! Look down when you're stopped in a left turn lane and the median is covered with them. Cigarette butts are litter.</li> <li>➤ Road signs seeking residents to take pride in our area</li> <li>➤ Signs</li> <li>➤ Place signs about the fines along highways and major roads, along with litter hotline info. People won't litter if it's going to cost them dearly.</li> </ul>

## APPENDIX D

### INTERNET SURVEY: OPEN-ENDED RESPONSES

STRATEGIES FOR REDUCING LITTER (Q18H & Q19L): INCREASE PUBLIC AWARENESS ABOUT LITTERING
<ul style="list-style-type: none"> <li>➤ Put Signs up in workplaces and all schools!!</li> <li>➤ Post on busy highways</li> <li>➤ Put up signage to show the fines</li> <li>➤ Signs posted throughout the county</li> <li>➤ Public Service Announcements in Spanish and English. Awareness of where to take furniture, mattress and appliance are</li> <li>➤ TV campaign as in CA showing a man dumping trash in someone's home. Need more public service announcements and no littering signs with symbols. Some people may not understand the signs in English.</li> <li>➤ I grew up with "PLEASE DON'T BE A LITTER BUG" and I literally can't litter.</li> <li>➤ Use social marketing to determine what will change behavior</li> <li>➤ Swat a Litter Bug Website (I use it often)</li> <li>➤ Campaign - what you do matters; get people to care about their own actions</li> <li>➤ Signs</li> <li>➤ Show shameful litter, engage local tv stations, print media to show images</li> <li>➤ Add signs like West Virginia.</li> <li>➤ By the way, "litter bug" is too cute. Ask for ugly name suggestions from the citizens - something that matches the way that crying Indian felt while looking at the polluted stream.</li> <li>➤ Publicizing same [Occasional Litter Checkpoints] on TV.</li> <li>➤ Again, signs on roadways about the fines, community service, and the litter hotline.</li> <li>➤ Use lots of foreign languages in our multi cultural region with emphasis on pride and it's the law!</li> <li>➤ Increase signs</li> <li>➤ Post more signs along major roads specifying the max fine</li> <li>➤ Initiate grade school campaigns</li> <li>➤ Send homewoners information on how litter effects their property values.</li> <li>➤ Demonstrate profitable uses for litter</li> <li>➤ Real people/ real problem/ real money approach</li> <li>➤ Humorous messages that make litterers look like dolts and people who recycle and dispose of stuff properly look sexy and fun</li> <li>➤ Make littering "uncool" to teens &amp; adolescents.</li> <li>➤ Impacts property values</li> <li>➤ Billboards</li> <li>➤ Billboards that are bilingual.</li> <li>➤ I think it would be awesome to hang banners from the overpasses on I-40 throughout Wake County saying it's illegal to throw cigarette butts out your window. Another banner could remind truck owners to secure debris or make sure to cover their beds. This would be highly visible. Maybe the electronic traffic signs on I-40 could occasionally be set to litter.</li> <li>➤ I think you should use local people to be anti-litter spokespeople - let people see how much their neighbors care.</li> <li>➤ As to the informing citizens of costs, I would put it also on a per person cost to help put it in terms that they can better relate to.</li> <li>➤ If people discover they are (indirectly) impacted economically (higher taxes, lower tourism, etc) that might work for a few</li> <li>➤ Publicize of dollar amount of clean up cost to wake</li> <li>➤ Show pictures of what a specific area looked like ten years ago, and then what it looks like now....the roads into our capital city are embarrassing!</li> </ul>

## APPENDIX D

### INTERNET SURVEY: OPEN-ENDED RESPONSES

#### STRATEGIES FOR REDUCING LITTER (Q18H & Q19L): INCREASE PUBLIC AWARENESS ABOUT LITTERING

- Publicize SPECIFIC stretches of roads ‘looking’ to be adopted.

#### STRATEGIES FOR REDUCING LITTER (Q18H & Q19L): INCREASING AVAILABILITY/ACCESSIBILITY OF AMENITIES

- Drive thru trashcans at Fastfood restaurants
- more recycling containers
- Give people a litter bag for their car when they apply for their driver’s license
- Target apartment and condo dwellers using dumpsters. Put smaller recycling areas outside units so as they take out the trash they may stop and put in recycling items. If the areas get messy they will be living in it and have a direct consequence See my other suggestions on the previous question.
- Maybe set up litter drive-thru

#### STRATEGIES FOR REDUCING LITTER (Q18H & Q19L): PROVIDE INCENTIVES/REWARDS FOR REDUCTION OF LITTER/RECYCLING

- Money for returned bottles & cans
- Bottle deposit law - 10 cents per bottle
- Recycling materials picked up for money!
- Money return on cans/bottles-worx elsewhere
- Don’t allow lobbyists for the beverage industry to kill bottle return laws!
- Contests for institutions such as schools and colleges
- Have deposits on bottles & cans
- Pay a redemption fee for glass bottles.
- Provide incentives, “ pickup partys “, column in N&O with pictures before and after, commendations to citizens who pick up 10 items a day that they didn’t drop,
- Deposit on alum & plastic.
- Give them something in return
- A great song against litter campaign. Have a contest that public can enter to write a song
- “The carrot and the stick” strategy. Reward anti-litter.
- Organize competitions among schools or neighborhoods with business sponsored prizes
- Find a Program that reward youth to take pride in the community
- \$\$ Back for the recycling of bottles & cans
- Bottle deposit law - 10 cents per bottle, including water bottles
- Deposit for cans, bottles

#### STRATEGIES FOR REDUCING LITTER (Q18H & Q19L): ENCOURAGE PERSONAL AND COMMUNITY ACTION AND RESPONSIBILITY

- Have all municipalities in their area do their part in cleaning up
- encourage high school participation in cleaning up litter.
- tune in on the citizen pride in the new life in Raleigh (fayetteville st etc) and lead it out to the highways, community service workers to get cleaning on a regular basis, mow the grass, weed the medians on 440or pave over with textured gravel, etc etc.

## APPENDIX D

### INTERNET SURVEY: OPEN-ENDED RESPONSES

<b>STRATEGIES FOR REDUCING LITTER (Q18H &amp; Q19L):</b>
<b>ENCOURAGE PERSONAL AND COMMUNITY ACTION AND RESPONSIBILITY</b>
<ul style="list-style-type: none"> <li>➤ The more we have people who pick up what others have consciously thrown out, the more they will continue to do it.</li> <li>➤ I already volunteer for adopt a highway</li> <li>➤ If you litter volunteer to clean it up.</li> <li>➤ Engage more people in litter pickup days</li> <li>➤ Keep trash in sealed trash bags on the way to the dump.</li> <li>➤ Publicize what people can do when they see other people littering</li> </ul>

<b>OTHER STRATEGIES FOR REDUCING LITTER (Q18H &amp; Q19L):</b>
<ul style="list-style-type: none"> <li>➤ There are too many “lines” to finding the right source to report litter locations!....it’s a hassle to locate the correct department!</li> <li>➤ Property owners and business should be responsible for the property , everyone and everybusiness should be held accountable</li> <li>➤ Shaming litterbugs: put it in print or on the news</li> <li>➤ People need to be embarrassed if they litter; most simply do not care and do not realize that it affects their and their families’ long-term health, property values, and overall feeling of pride in one’s home</li> <li>➤ Don’t think citizens care</li> <li>➤ I believe a person’s “intention” not to litter is key; these people don’t need someone to provide them with a litter bag or educate them with commercials or such; they know the simple truth that throwing trash away for all to see and for someone else to pick up is poor manner at best and negligence at worst.</li> <li>➤ Station people at high litter points around wake county to look out for litters and so they can publicly humiliated</li> <li>➤ I already keep a car litter bag with me, for years.</li> <li>➤ Also, someone who smokes is unlikely to care about the environment, if they don’t care about their own health.</li> <li>➤ Photos of litterbugs in the paper</li> <li>➤ People who litter don’t care about the maximum fine. It might be effective to advertise the minimum fine or number of hours of community service. It might also be good to show how many hours of community service were sentenced to litter bugs during each month.</li> <li>➤ Put the photos of ;litterbugs in a publication</li> <li>➤ Put the photos of litterbugs on the web</li> <li>➤ Again, publicity on those who litter</li> <li>➤ Publicize if someone is caught doing illegal dumping and the consequences. While dumping is a larger issue than littering, a person who dumps undoubtedly litters. And a person who litters could graduate to dumping.</li> <li>➤ Publish the number of people charged/punished for littering.</li> <li>➤ If possible provide more publicity for people who are convicted of littering</li> <li>➤ Publicize convicted litterers along with their penalty</li> <li>➤ Compare our area to others such as Swest Florida and Garden State Parkway in NJ</li> <li>➤ Find out how Durham County keeps their roadways clean - like 147</li> <li>➤ Run stories in the paper about individuals and groups who pick up litter voluntarily, like good samaritans, without being part of a formal group or campaign</li> <li>➤ Try to focus on kids and young people</li> <li>➤ Start with the youth of our community on a reg. Basis</li> <li>➤ I think some people are of the mentality that the Aadopt-A -Hwy volunteers and the prison inmates can clean up after them.</li> <li>➤ I feel as though most who litter just don’t care or are from a high-litter culture where it is more widely</li> </ul>

**APPENDIX D**  
**INTERNET SURVEY: OPEN-ENDED RESPONSES**

**OTHER STRATEGIES FOR REDUCING LITTER (Q18H & Q19L):**

accepted to litter with no consequence. Getting people to change their mentality to care is such a tough challenge.

- People just don't care.
- Those that litter are more intentional than not!



**APPENDIX D**  
**INTERNET SURVEY: OPEN-ENDED RESPONSES**

**STRATEGIES WITH RATINGS**

<b>RESPONDENT COMMENTS ON STRATEGIES—Q18</b>	<b>RATING OF STRATEGY</b>
➤ Add a massive tax to cigarettes to pay for picking up all the butts smokers drop all over our county!!!	Very Effective
➤ Alert garbage truck staff to unintentional littering problem.	Somewhat Effective
➤ At vehicle inspection require demonstration of bed covers for pickups.	Somewhat Effective
➤ Discourage use of plastic bags or ban them county-wide. Educate truck drivers that stuff in their truck will fly out on the highway.	Somewhat Effective
➤ Ban plastic water bottles and plastic store bags. Pay a redemption fee for glass bottles.	Very Effective
➤ Money for returned bottles & cans.	Very Effective
➤ Bottle deposit law - 10 cents per bottle.	Very Effective
➤ Money return on cans/bottles-works elsewhere.	Very Effective
➤ Don't allow lobbyists for the beverage industry to kill bottle return laws!	Very Effective
➤ Contests for institutions such as schools and colleges.	Somewhat Effective
➤ Road cameras.	Very Effective
➤ Cameras. Increased fines. Awareness of safety issues with debris coming out of truck beds.	Very Effective
➤ People not need to pick up for 8 hours, not fines, if able.	Very Effective
➤ Everyone caught littering should have to clean a mile of highway.	Very Effective
➤ Increase penalties and enforcement.	Very Effective
➤ Stronger financial penalties for littering roads and waterways.	Very Effective
➤ Increase fines for littering. Put up signage to show the fines.	Very Effective
➤ 1000 fines... works in many states!!! Signs posted throughout the county	Very Effective
➤ Raise litter fine amounts. Place signs about the fines along highways and major roads, along with litter hotline info. People won't litter if it's going to cost them dearly. Also make inmates do community work, including putting them on roadside cleanup crews.	Very Effective
➤ Increase littering fines to up to \$1000. Post on busy highways. Enforce the penalties. Make repeat violators go out to pick up litter themselves.	Very Effective
➤ Get the inmates in prison to do it since we are paying for them anyways.	Very Effective
➤ Prisoners, prisoners, prisoners!!!!	Very Effective
➤ Have all municipalities in their area do their part in cleaning up. Have all municipalities in their area do their part in enforcing.	Very Effective
➤ Install more "Littering is illegal" signs and the amount of the fine.	Somewhat Effective
➤ Road signs seeking residents to take pride in our area.	Somewhat Effective
➤ Signs. Cameras. More inmate crews.	Very Effective
➤ Require covers on open trucks. Have deposits on bottles & cans.	Very Effective
➤ More recycling containers.	Very Effective
➤ Education in school.	Very Effective
➤ Start teaching children in preschool and kindergarten with a planned no littering curriculum.	Very Effective
➤ Teach anti-litter message in elementary schools.	Very Effective
➤ Ongoing programs in public schools.	Very Effective
➤ I was raised in the 70's during which we were taught not to litter. I don't litter and I report litterbugs.	Somewhat Effective
➤ We have to make them understand issues we face due to littering. Current and for future.	Somewhat Effective
➤ Involve schools, teach awareness in lower grades provide incentives, "pickup	Very Effective

**APPENDIX D**  
**INTERNET SURVEY: OPEN-ENDED RESPONSES**

<b>RESPONDENT COMMENTS ON STRATEGIES—Q18</b>	<b>RATING OF STRATEGY</b>
parties”, column in N&O with pictures before and after, commendations to citizens who pick up 10 items a day that they didn’t drop, visit and get advice from Dallas, Phoenix, NJ turnpike, NY throughway tune in on the citizen pride in the new life in Raleigh (Fayetteville St. etc) and lead it out to the highways, community service workers to get cleaning on a regular basis, mow the grass, weed the medians on 440or pave over with textured gravel, etc. Use prisoners.	
➤ Target education toward young children. Also, someone who smokes is unlikely to care about the environment, if they don’t care about their own health.	Very Effective
➤ Give people a litter bag for their car when they apply for their driver’s license.	Very Effective
➤ Public Service Announcements in Spanish and English. Awareness of where to take furniture, mattress and appliance are.	Very Effective
➤ Swat a Litter Bug Website (I use it often).	Very Effective
➤ Campaign - what you do matters; get people to care about their own actions.	Very Effective
➤ Property owners and business should be responsible for the property, everyone and every business should be held accountable.	Very Effective
➤ Don’t think citizens care.	Very Effective
➤ Station people at high litter points around Wake County to look out for litters and so they can publicly humiliated.	Very Effective

<b>RESPONDENT COMMENTS ON STRATEGIES—Q19</b>	<b>RATING OF STRATEGY</b>
➤ Find a Program that reward youth to take pride in the community. Give them something in return.	Very Effective
➤ Increase fines to \$1000 for a private vehicle and \$2500 for a commercial vehicle. Loss of license until fine is paid. That would END LITTERING and solve a budget crisis.	Very Effective
➤ Increase the penalty for littering.	Very Effective
➤ Increase fines for violators.	Very Effective
➤ Enforce the law and charge bigger fines.	Very Effective
➤ Large fines for commercial trucks littering.	Very Effective
➤ Post more signs along major roads specifying the max fine.	Very Effective
➤ Tough laws.	Very Effective
➤ School education (like the harm in smoking education).	Somewhat Effective
➤ Educate at the elementary schools for the future.	Very Effective
➤ Keep trash in sealed trash bags on the way to the dump.	Somewhat Effective
➤ If possible provide more publicity for people who are convicted of littering.	Somewhat Effective
➤ Compare our area to others such as Swest Florida and Garden State Parkway in NJ.	Somewhat Effective
➤ Publicize what people can do when they see other people littering.	Somewhat Effective
➤ Publicize of dollar amount of clean up cost to Wake.	Very Effective
➤ Occasional Litter Checkpoints like DWI checkpoints. Publicizing same on TV.	Somewhat Effective
➤ \$\$ back for the recycling of bottles & cans	Very Effective
➤ Bottle deposit law - 10 cents per bottle, including water bottles.	Very Effective
➤ Cameras. Increased fines. Educate as to the safety hazards of debris flying our of trucks.	Very Effective
➤ Increase fines. Take away drivers license.	Very Effective
➤ Put the photos of litterbugs in a publication	Very Effective

**APPENDIX D**  
**INTERNET SURVEY: OPEN-ENDED RESPONSES**

<b>RESPONDENT COMMENTS ON STRATEGIES—Q19</b>	<b>RATING OF STRATEGY</b>
➤ Without teeth who cares about the watchdog?	Very Effective
➤ Again, signs on roadways about the fines, community service, and the litter hotline.	Very Effective
➤ Big fines that are ENFORCED.	Very Effective
➤ Prisoners!!!!	Somewhat Effective
➤ “The carrot and the stick” strategy. Reward anti-litter. Have a penalty for littering.	Very Effective
➤ Enforcement of littering laws is a key factor.	Very Effective
➤ Stiff penalties. Cameras. Signs.	Very Effective
➤ Education in schools and car dealerships.	Very Effective
➤ See answer above - start education young.	Very Effective
➤ Teach anti-litter in primary, elementary & high schools.	Very Effective
➤ Start with the youth of our community on a reg. basis.	Very Effective
➤ People who litter don’t care about the maximum fine. It might be effective to advertise the minimum fine or number of hours of community service. It might also be good to show how many hours of community service were sentenced to litter bugs during each month. By the way, “litter bug” is too cute. Ask for ugly name suggestions from the citizens - something that matches the way that crying Indian felt while looking at the polluted stream.	Very Effective
➤ Billboards that are bilingual. A great song against litter campaign. Have a contest that public can enter to write a song.	Very Effective
➤ Again, publicity on those who litter.	Somewhat Effective

## APPENDIX D

### INTERNET SURVEY: OPEN-ENDED RESPONSES

MAIN SLOGANS USED (Q22): RESPONDENT COMMENTS
<ul style="list-style-type: none"> <li>➤ Neuse River clean up.</li> <li>➤ Don't remember - visual of the damage and what happens when just one plastic bag make it into our waterways and then ocean.</li> <li>➤ About the Swat-A-Litterbug program.</li> <li>➤ Don't recall what they were.</li> <li>➤ Do not recall.</li> <li>➤ Litterbug hotline on NPR, I believe.</li> <li>➤ Can't remember.</li> <li>➤ Wake County Sheriff Deputies would patrol looking for big deposits of litter.</li> <li>➤ Littering hurts our community.</li> <li>➤ Don't remember.</li> <li>➤ Keep America Beautiful.</li> <li>➤ Don't remember.</li> <li>➤ Don't pour grease down the drain.</li> <li>➤ The Big Sweep.</li> <li>➤ Make area beautiful.</li> <li>➤ This road adopted by "-".</li> <li>➤ Keep our community clean.</li> <li>➤ Littering damages the environment.</li> <li>➤ Keep.</li> <li>➤ I remember the swat a litter bug.</li> <li>➤ Can't recall; was litter along a highway.</li> <li>➤ You would receive a fine for littering if caught.</li> <li>➤ "Recycle this newspaper".</li> <li>➤ Here is the number to call to report folks u c littering&gt; I have it programmed into my cell phone and use it often!</li> <li>➤ Keep America Beautiful.</li> <li>➤ ?</li> <li>➤ Don't recall.</li> <li>➤ Keep NC clean Swat a litterbug.</li> <li>➤ Keep America Clean.</li> <li>➤ Don't mess with Texas.</li> <li>➤ Can't recall except maybe something like "if you litter you break the law".</li> <li>➤ Littering is harmful.</li> <li>➤ Reuse/Recycle.</li> </ul>