



DON'T TRASH ARIZONA

LITTER EVALUATION SURVEY

October 2020

Prepared for:



TABLE OF CONTENTS

Section:

Page #:

Study History & Overview	1
Key Findings.....	2
Executive Summary	4
I. Introduction	7
A. Background and Methodology	7
B. Significance Testing and Sub-Group Analysis	8
C. Demographics.....	9
II. Driver Characteristics: Securing Loads.....	10
III. Litter Awareness and Behavior	12
A. Litter Awareness	12
1. Perception of Litter as Problem along Freeways.....	12
2. Perception of Amount of Litter since COVID-19 Pandemic	14
3. Reaction to Seeing Litter on Freeway	14
4. Litter Bag or Trash Can in Vehicle	15
B. Personal Littering	16
1. Items Personally Discarded as Litter - Historical Tracking Data.....	16
2. Items Personally Discarded as Litter - Unaided + Aided	17
C. Littering Circumstances	18
1. Littering Circumstances - Historical Tracking	18
2. Littering Circumstances – Total Unaided + Aided.....	19
D. Personal Experience with Specific Littering Situations	20
IV. Campaign Awareness.....	21
A. General Campaign Awareness and Slogan Recall	21
B. “Don’t Trash Arizona” Awareness	23
C. Awareness of Website.....	24
D. “Arizona Is Our Home. Love it. Don’t Trash it” Awareness	25
E. Source of Awareness of Slogans - Unaided	26
F. Advertising Placement Most Likely to Catch Attention - Unaided.....	27
V. Profiles of Litterers.....	28
Appendix A - Target Audience Over-sample Results vs. Non-Target.....	31
Appendix B – Questionnaire	47



STUDY HISTORY & OVERVIEW

In August 2006, the Maricopa Association of Governments (MAG) launched a litter prevention and education program known as *Don't Trash Arizona*. The purpose of the program is to reduce litter on the regional freeway system by developing a strategy to increase public awareness and change behavior. The scope of work for the program additionally mandated that an evaluative process be included to measure the success of the program.

First, “secondary” research was conducted to review existing litter campaigns, not only in other regions and states, but globally. This was accomplished through online research and targeted interviews with managers of litter campaigns in other states.

The secondary research found that litterers were predominately single males, aged 18 to 24—with a secondary tier of litterers aged 25 to 34. They tend to be smokers, eat/buy fast food two times per week or more, frequent bars and nightclubs, and drive pickup trucks. According to the Transportation Research Board, 55 percent of littering is deliberate, while 45 percent occurs “accidentally” when items blow or fall off vehicles. Littering most often takes place when drivers are alone, and many reported that they did not consider small items like cigarettes and candy wrappers to be litter.

Following the secondary research, a benchmark survey was conducted in December 2006 to determine initial attitudes and awareness of litter issues in Arizona and to evaluate littering behavior.

A follow-up, evaluative survey was then conducted in July 2008 at the end of the first two years of the campaign in order to determine if any changes in awareness, attitudes or behavior were realized. Annual surveys have been conducted in subsequent years, focusing on Maricopa County residents. Follow up studies have been conducted for the past 12 years with the focus of this current report on data collected in October 2020. *Of note beginning in 2017, there was a shift in data collection methodology from telephone only to a mixed mode of telephone and web. This shift is necessary to accommodate the response preferences of younger residents and to ensure the sample is representative of all MAG Region residents of all ages. However, web responses can be different than phone responses to the same question simply due to the fact that respondents are reading rather than hearing the questions or they are more likely to be “honest” with their answers because of more anonymity.*

Communication strategies are informed each year based on the survey results. These strategies primarily target the 18 to 34 male demographic, with a secondary demographic of key influencers to them, primarily women of varied ages. Messages targeted toward both accidental and deliberate littering are included, and a variety of strategies and tactics are employed utilizing public relations, paid advertising, special events, school outreach, distribution of informational materials and the development of value-added partnerships. The survey includes questions to help evaluate the effectiveness of various tactics and campaign messaging, so that outreach efforts can be refined each year for best results.

KEY FINDINGS

- **Littering Awareness, Attitudes and Behavior:**

Maricopa County residents were slightly less likely to indicate they believed litter along the highways is a “big” or “moderate” problem (66% vs. 69%). However, nearly one-half of residents (47%) admitted to littering when unaided and aided littering was identified, which is a slight increase from 43% measured in 2019. *(Pages 9-10 and Pages 26-27)*

However, at least one-half of residents selected “disgusted”, “frustrated”, and/or “angry” as describing how they feel about seeing litter/littering, and it’s intriguing that these sentiments were statistically similar among Admitted, Accidental and Non-litterers. This appears to indicate that people may not relate their personal littering behavior as actually littering or as “bad as” other types of littering. *(Page 12)*

- **Campaign:**

The combined findings that awareness of litter-related advertising decreased significantly this year to a study low and outdoor advertising being selected as the most common source of awareness of the slogan “Don’t Trash Arizona” may be a reflection of COVID-19’s impact on personal travel and generally preventing people from being “out and about”. Additionally, the increase in reporting that advertising on social media is influential may be related to more time spent on devices and on these platforms during the pandemic. *(Pages 19, 24-25).*

- Recent awareness of litter-related advertising decreased significantly to a new study low of 14% in 2020, compared to 19% to 32% in the prior ten years of research. *(Page 19)*
- Mentions of outdoor advertising of the slogan “Don’t Trash Arizona” was significantly higher this year than in 2019 (54% vs. 43%). *(Page 24)*
- Outdoor advertising catches residents attention most often (38%), followed by social media (27%), television (25%) and radio (23%). Significantly more residents indicated social media platforms were most attention getting (27% up from 11%). *(Page 25)*

- **COVID-19 Impact:**

While 24% of residents feel they have seen more litter along freeways than they did prior to the onset of the pandemic, 28% reported seeing less litter and the remaining felt it was the same or weren't sure. (Page 12)

Residents were significantly less likely to report experiencing any of the five littering scenarios in 2020 than in 2019, which is likely a byproduct of the pandemic restrictions and school/work modifications which resulted in less time commuting or being in vehicles and on freeways. These scenarios were also less prevalent among target group of males 18-34 and significantly so for litter falling out of a vehicle and leaving debris on the side of the road after car problems. (Pages 18, 35).

This year "litterers" were significantly more likely to report littering food or organic materials than last year (33% up from 24%). It is plausible that this increase may be related to an increase in getting food "to go" rather than dining in and thus having more food in their cars to discard. (Pages 14-16)

Because the world of the target population of 18 to 34 year old males was likely impacted greatly by the pandemic, it is not surprising to see shifts in their behaviors and awareness this year due. In fact, littering behavior declined significantly among the target group (78% littered down from 87% in 2019). Campaign awareness fell to a study low of 19% (vs. 31% last year), however, campaign awareness was still higher among the target population than among the non-target population (12%). (Pages 20 and 36)

EXECUTIVE SUMMARY

The Maricopa Association of Governments (MAG), through its consultant, Off Madison Ave., commissioned WestGroup Research of Phoenix to conduct a telephone and web study with adult residents of Maricopa County. The purpose of the study was to evaluate overall awareness of and attitudes toward litter issues, explore littering behavior, and compare responses to previous annual studies. *Since 2017, data has been collected by a combination of telephone and web surveys, whereas previously it was telephone only. This shift was necessary to ensure the sample is representative of MAG Region residents of all ages. However, web responses can be different than phone responses to the same question simply due to the fact that respondents are reading rather than hearing the questions or are more likely to be “honest” with their answers because of increased anonymity.*

In addition to interviewing a general representative respondent base for this survey, an oversample of the target market (males ages 18 to 34) was conducted in 2020 through the use of an online panel. A supplemental report showing the target group compared to the non-target group is provided in Appendix A.

In 2020, results for the main report are based on n=403 6-minute telephone and web panel interviews. The margin of error for the general population survey is approximately $\pm 5.0\%$ at the 95% confidence level. The target market report of 202 males ages 18 to 34 is the combined data from 27 telephone surveys and 175 web-based surveys. Results are compared to previous years when appropriate.

Driver Characteristics

- A strong majority of residents indicated either they *do not haul* items in a pick-up truck or an open-air trailer (52%) or that, if they do, they *always* secure their loads (38%). After increasing significantly to 10% in 2019, this year the proportion of residents who “never” secure their loads returned to 5% which is more consistent with the levels measured over the prior two years. (Page 8)

Litter Awareness and Behavior

- Two-thirds (66%) of residents surveyed believed litter along Maricopa County freeways was a “big” or “moderate” problem, which is a slight drop from the study high of 69% measured in 2019 and consistent with historical levels (ranged 60% to 67% since 2009). (Pages 9-10)
- Whereas one in four residents (24%) feel they have seen *more litter* along freeways than they did prior to the onset of the pandemic, a slightly higher percentage of residents (28%) reported seeing *less litter*. (Page 12)
- “Disgusted” and “frustrated” resonated with more than one-half of residents as describing their reaction to litter/littering (62% and 55%, respectively). Nearly one-half reported that seeing litter/littering makes them feel “angry” (47%) and one-third selected the word “worried” (33%). (Page 12)



- Nearly two-thirds of residents surveyed (63%) reported they have a litterbag or trash can for use in their vehicles and an additional 19% said they would consider keeping one in their vehicle (which is more than half of those who do not already have one). (Page 13)
- When both unaided and aided littering behavior were measured among all respondents, the proportion of residents who reported they have not littered in the past year decreased to 52% (down from 63% for unaided only). The primary shift was a significant increase in the proportion of residents reporting they had littered food or organic materials (33% vs. only 18% unaided in 2020 and up from 24% in 2019). It is possible this increase is partly due to the pandemic and the increased propensity for residents to get meals via drive-through or curbside rather than dining in; there may have been more opportunities to discard food or organic materials (Pages 14-16)
- Those who admitted to littering in the past year (aided or unaided) were most likely to report doing so while *driving or riding in a vehicle* (48%) or when *something flew out of a door, window or cab* (23%). (Page 17)
- Residents were read a list of five specific littering scenarios and were asked to indicate if they had experienced that littering situation in the past year. Residents were significantly less likely to report experiencing these littering scenarios in 2020 than in 2019. (Page 18)
 - It is reasonable to presume the pandemic played a role in these declines with most residents significantly reducing the amount of time spent in their vehicles due to the stay-at-home orders and moving to work/school-from-home models.
 - The most common littering situation residents have experienced in the past year was *trash falling out of a vehicle* (30% down from 37% last year). The next most prevalent littering scenarios experienced were *someone threw trash out of a car window* (15% down from 20%) and *had problems with a vehicle and left debris like a tire, part of a tire, or other stuff on the roadside* (13% down from 24%).

Campaign Awareness

- After rebounding to 27% in 2019 after hitting a study low in 2018, recent awareness of litter-related advertising decreased significantly to a new study low of 14% in 2020. Awareness has varied from 19% to 32% in the prior ten years of research. (Page 19)
- Among those who indicated they had seen or heard litter-related advertising in the past three months, the “slogan” residents were most likely to recall on an unaided basis was *Do not litter* (18%), which is consistent with recent years. However, unaided recall of *Don’t Trash Arizona* declined significantly this year -- 2% down from 8% to 11% measured between 2016 and 2019. (Page 20)
- Similar to the past few years, nearly one-half (46%) of residents surveyed indicated either aided (44%) or unaided (2%) awareness of the slogan “Don’t Trash Arizona.” Male residents were again significantly more likely to be aware of the slogan (52% net aware vs. 40% for females). (Page 21)

- Nearly one in ten residents (9%) were aware of the website DontTrashArizona.com which is consistent with previous years. Male residents were twice as likely as female residents to report awareness (12% vs. 6%). (Page 22)
- Similar to last year, approximately one in five residents (21%) were aware of the slogan “Arizona Is Our Home. Love it. Don’t Trash it”. Male residents remained significantly more likely than females to have heard of the slogan (26% vs. 16%). (Page 23)
- Residents aware of the slogan “Don’t Trash Arizona” and/or the slogan “Arizona is Our Home. Love It. Don’t Trash It.” most often reported *outdoor promotion* as their source of awareness again this year (54% and 24% mentioned billboards, buses, freeway signs, etc.). Mentions of outdoor advertising of the slogan “Don’t Trash Arizona” was significantly higher this year than

Profile of Litterers

- This year nearly one-half of residents (47%) admitted to littering when unaided and aided littering was identified, which is similar to the 43% measured in 2019. However, the proportion of Accidental Litterers was significantly lower this year (18% down from 27%) and the proportion of non-litterers increased slightly (35% up from 30% in 2019). (Pages 26-27)

I. INTRODUCTION

A. Background and Methodology

The Maricopa Association of Governments (MAG), through its consultant, Off Madison Ave., commissioned WestGroup Research of Phoenix to conduct a telephone study with adult residents of Maricopa County. The purpose of the study was to evaluate overall awareness of and attitudes toward litter issues, explore littering behavior, and to compare responses to previous annual studies.

Interviewing was conducted using RDD landline phone numbers, a supplemental cell phone database and an online panel. Utilizing three sample sources is necessary to reach cell-phone only residents, landline dominant households, as well as ensure accurate sample representation of younger residents. In 2020, 60% of the general population residents completing the survey were reached via cell phone, 15% via land line and 25% via an online panel (note: all panel respondents were 18 to 34 years old). Post-survey weighting was applied to the data for gender and age to make sure the final data set achieved the targeted representative sample goals.

Since 2013, the study has oversampled the target audience (males ages 18 to 34) until a threshold of at least n=200 was achieved. In 2020, nearly all residents in the oversample of males 18 to 34 were completed via web survey with members of an online panel (175 of the 202 total surveys with the target were completed via online panel, 27 were completed over the telephone).

In 2020, results for the main report are based on n=403 6-minute telephone interviews. The margin of error for the general population survey is approximately $\pm 5.0\%$ at the 95% confidence level.

B. Significance Testing and Sub-Group Analysis

Throughout this report, symbols (▼or▲) or superscript letters (^{ABC}) next to certain 2020 data indicate that the number is significantly different at the 95% confidence interval than the corresponding figure in 2019. For example, in the table below, the 33%▲ in the 2020 column indicates that the percentage of 2020 residents who answered that they have littered food or organic material in the past year was significantly higher than the 24% of 2019 residents who reported that behavior.

In yearly tracking charts and tables, the current year's results are only compared in this manner to the previous year's results for the same question.

Top Items Mentioned	2020 Total Unaided + Aided n=403	2019 Total Unaided + Aided n=400
Have not littered in past year.	52%	58%
Food/organic material (unaided + aided)	33%▲	24%
Small pieces of paper (unaided + aided)	11%	13%
Cigarette butts (unaided + aided)	7%	9%
Food wrappers (unaided + aided)	6%	7%

Data was analyzed by the following demographic subgroups:

- Gender: male, female
- Age: < 35, 35-54, 55+
- Awareness of ads about littering

C. Demographics

Per established quotas and the use of data weighting, the gender composition of the survey was evenly split (50% females and 50% males) and the age breakdown is even for each category. The demographic profile of respondents in 2020 was comparable to 2019.

Table 1: Respondent Demographics

Characteristic	2020 n=403	2019 n=400	2018 n=400	2017 n=401	2016 n=502	2015 n=401
Gender						
Male	50%	50%	50%	51%	51%	50%
Female	50%	50%	50%	49%	49%	50%
Age						
18 to 34	32%	34%	34%	34%	34%	33%
35 to 54	34%	33%	33%	33%	32%	33%
55+	34%	33%	33%	33%	33%	34%
Average	43.8 yrs	43.5 yrs	43.5 yrs	43.3 yrs	43.4 yrs	43.7 yrs
Language spoken at home						
English only	79%	76%	76%	80%	74%	71%
Spanish only	<1%	<1%	1%	--	--	<1%
Mostly Spanish but some English	1%	2%	2%	1%	1%	<1%
Equally in both languages	5%	5%	6%	3%	7%	5%
Mostly English but some Spanish	9%	11%	12%	10%	12%	12%
English and other language	5%	6%	5%	6%	6%	8%
Refused	--	<1%	--	<1%	<1%	3%

II. DRIVER CHARACTERISTICS: SECURING LOADS

A strong majority of residents indicated either they *do not haul* items in a pick-up truck or an open-air trailer (52%) or that, if they do, they *always* secure their loads (38%). After increasing significantly to 10% in 2019, this year the proportion of residents who “never” secure their loads returned to 5% which is more consistent with the levels measured over the prior two years. Similar to last year, 5% indicated they only *sometimes* secure their loads. Of note the question wording change in 2020 emphasized the “never haul” option and lead to a significant increase in the selection of “never haul/does not apply” (52% up from 40%) and a significant decrease in the proportion reporting they “always” secure their load (38% down from 47%).

Female residents were more likely than male residents to report they *do not haul items in a pickup truck* (60% vs. 44%). Residents ages 35 to 54 were significantly more likely to report that they “always secure loads” (47% vs. 33% of younger and older residents).

Table 2a: Frequency of Securing Loads

Frequency	2020* n=403	2019 n=400	2018 n=400	2017 n=401	2016 n=502
Always	38%▼	47%	47%	42%	42%
Sometimes	5%	4%	4%	2%	6%
Never	5%▼	10%	5%	4%	8%
I don't haul/Does not apply	52%▲	40%	44%	52%	44%

▲▼Indicates significant difference compared to 2019 at 95% confidence level.

*2020 Q10: Typically, when driving in a pick-up truck or pulling an open-air trailer, how often do you secure a load that you are hauling with ties, bungees, or a tarp? Would you say that you Always, sometimes or never secure loads? Or do you never haul anything?

2017-2019: Q10: On average, how often do you secure the load that you are hauling with ties, bungees, or a tarp when driving in a pick-up truck or when pulling an open-air trailer?

Note: Prior to 2016, question was limited to drivers who reported primarily driving in pickup-trucks. Historical data, therefore, is not comparable and not shown in Table 2.

Four in five residents (80%) perceive themselves as “very” (48%) or “somewhat” (32%) knowledgeable about the best way to secure a load in the case that they needed to haul something that needed to be secured with ties, bungees or a tarp. Men and those age 35 and older were most likely to rate themselves as “very knowledgeable” (58% vs. 38% of women, and 56% vs. 31% of those ages 18 to 34).

Table 2b: Level of Knowledge in Securing Loads

Frequency	2020 n=403
Very knowledgeable	48%
Somewhat knowledgeable	32%
Not very knowledgeable	6%
Not at all knowledgeable	12%
Don't know	2%

QNEW3: If or when you have a need to haul something that needs to be secured with ties, bungees or a tarp, how would you rate your level of knowledge about the best way to secure your load? Would you say you are:

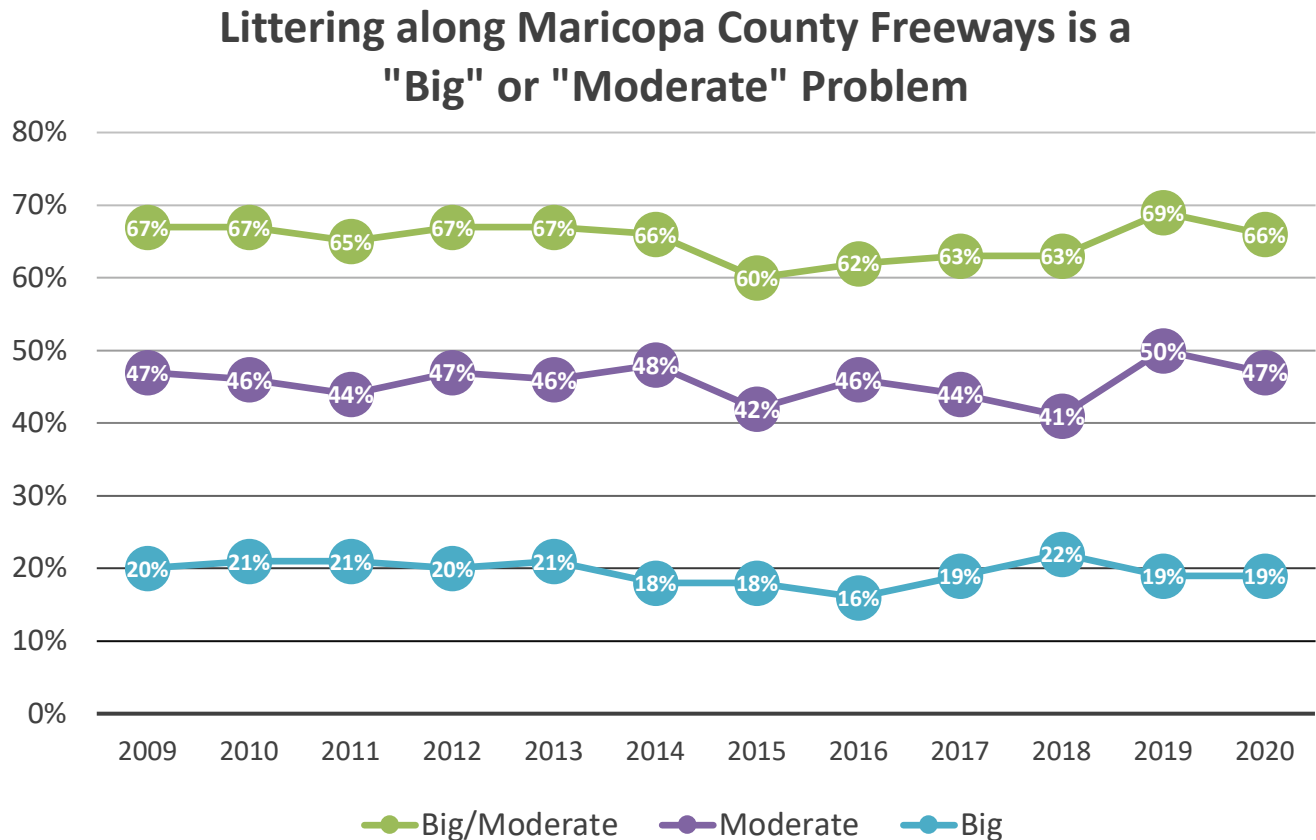
III. LITTER AWARENESS AND BEHAVIOR

A. Litter Awareness

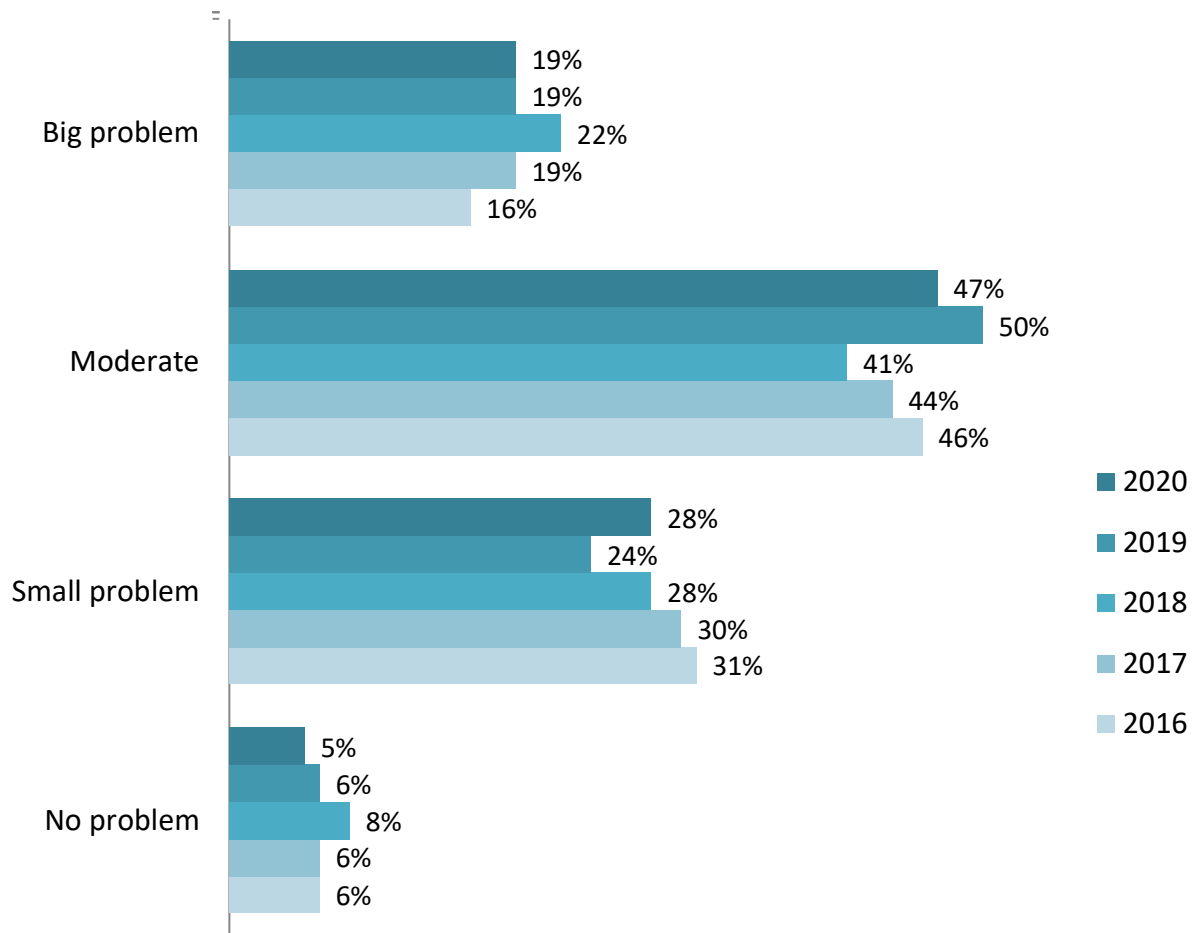
1. Perception of Litter as Problem along Freeways

Two-thirds (66%) of residents surveyed believed litter along Maricopa County freeways was a “big” or “moderate” problem, which is a slight drop from the study high of 69% measured in 2019 and consistent with historical levels (ranged 60% to 67% since 2009).

Residents who have seen or heard advertisements related to litter or littering were significantly more likely than those who have not to rate litter as a “big” or “moderate” problem (81% vs. 62% respectively). In contrast, those unaware of advertising were more likely to label littering as “a small problem” (31% vs. 14% aware).



Perception of Litter Along Maricopa County Freeways



2020 n=403; 19 n=400; 2018 n=400; 2017 n=401; 2016 n=502

Table 3: Freeway Litter as a Problem in Maricopa County

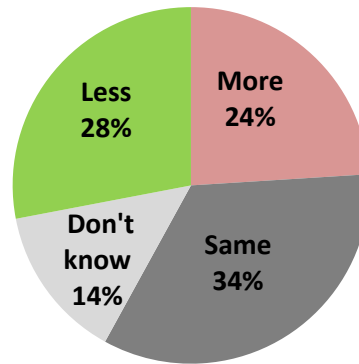
Rating	2020 n=403	2019 n=400	2018 n=400	2017 n=401	2016 n=502	2015 n=401	2014 n=401
Big + Moderate problem	66%	69%	63%	63%	62%	60%	66%
Big problem	19%	19%	22%	19%	16%	18%	18%
Moderate problem	47%	50%	41%	44%	46%	42%	48%
Small problem	28%	24%	28%	30%	31%	29%	26%
Not a problem at all	5%	6%	8%	6%	6%	10%	6%
Don't know/No answer	1%	1%	2%	<1%	1%	1%	2%

Q6: In your opinion, how big of a problem is litter along freeways in Maricopa County? Would you say it is a...

2. Perception of Amount of Litter since COVID-19 Pandemic

Whereas one in four residents (24%) feel they have seen more litter along freeways than prior to the onset of the pandemic, a slightly more residents (28%) reported seeing less litter. Nearly one-half have not perceived a change (34% “same” + 14% “don’t know”).

Amount of Litter Now vs. Pre-COVID-19



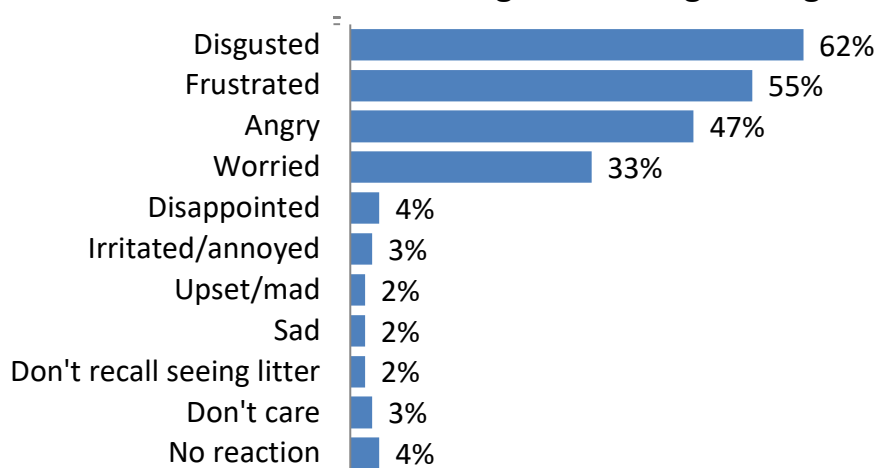
2020 n=403

QNEW1: Over the past six months, would you say you are seeing more or less litter along the freeways than you recall seeing prior to the start of the pandemic in

3. Reaction to Seeing Litter on Freeway

Residents were read four words and asked which ones described their reaction upon seeing litter along the highway or being thrown from a vehicle driving on the highway. **“Disgusted” and “frustrated” resonated with more than one-half of residents as describing their reaction to litter/littering (62% and 55%, respectively).** Nearly one-half reported that seeing litter/littering makes them feel “angry” and one-third selected the word “worried.” When asked to volunteer any other reactions to litter, residents mentioned feeling *disappointed, annoyed/irritated, upset* and *sad*.

Reactions to Seeing Litter Along the Highway



2020 n=403

QNEW4: Which of the following describes your reaction when you see litter along the highway or see something fall or be thrown from a vehicle while driving on the highway? Check all that apply. Any others that I did not mention?

4. *Litter Bag or Trash Can in Vehicle*

Nearly two-thirds of residents surveyed (63%) reported they have a litterbag or trash can for use in their vehicles and an additional 19% said they would consider keeping one in their vehicle (which is more than half of those who do not already have one).

These findings are fairly similar to the historical levels measured when this question series was asked from 2006 and 2015. *For context and comparison, periodic historic results are shown below.*

Table 4: Litter Bag or Trash Can in Vehicle

Aided Situations/Top situations	2020 n=403	2015 n=401	2010 n=601	2006 n=748
Have litter bag/trash can in vehicle	63%	71%	69%	57%
Would consider keeping litter bag/trash can in vehicle (Among those who do not)	57%	66%	64%	53%
Would consider keeping litter bag/trash can in vehicle (Based to All)	19%	19%	20%	23%

QNEW2: Do you have a litter bag or trash can in your vehicle? QNEW2a. IF NO IN NEW2: Would you consider keeping a litter bag or trash can in your vehicle?



B. Personal Littering

Historically, the question measuring personal littering behavior was primarily asked in an unaided format. In an effort to obtain the most accurate incidence of littering behavior, beginning in 2019 residents were asked the littering behavior question as it had been historically, but were also asked if they had personally littered in four specific ways (shown in bold in the tables). The findings are reported in the historical manner in #1 below and in the combined unaided/aided manner in #2 on the following page.

1. *Items Personally Discarded as Litter – Historical Tracking Data*

Similar to last year, nearly two-thirds of residents surveyed reported they have not littered in the past year (63%). Food or organic material continues to be the most common type of litter mentioned (18%), followed by small pieces of paper (7%). After being at a significantly elevated level in 2018 and 2019 (8%-9%), the percentage of residents volunteering that they littered cigarette butts declined significantly to 4% in 2020.

As expected, residents ages 35 and older were significantly more likely to report not littering in the past year compared to younger residents (65% ages 35-54 and 79% 55 and older vs. 44% ages 18-34). The percentage of males ages 18 to 34 who reported that they had not littered in the past year returned to 41% after dropping significantly to 32% in 2019. (See Appendix for details.)

Table 5a: Items Personally Discarded as Litter – Tracking Data

Top Items Mentioned	2020 n=403	2019 n=400	2018 n=400	2017 n=401	2016 n=502	2015 n=401	2014 n=401
Have not littered in past year.	63%	66%	68%	70%	62%	71%	62%
Food/organic material	18%	14%	14%	14%	15%	14%	15%
Small pieces of paper	7%	10%	10%	7%	9%	8%	10%
Cigarette butts	4%▼	8%	9%	2%	4%	2%	1%
Food wrappers	4%	5%	6%	3%	4%	4%	5%
Cups/Cans/Bottles	3%	4%	1%	3%	1%	1%	1%
Toilet paper/napkins/ Kleenex	2%	2%	--	<1%	1%	1%	1%
Plastic bags/other plastic	1%	1%	<1%	<1%	<1%	<1%	<1%
Recyclables/cardboard	<1%	1%	<1%	<1%	<1%	<1%	<1%
Don't know	4%	2%	2%	3%	5%	3%	8%

Q8: Can you think of items that you yourself might have discarded as litter (by litter we mean items you did not put in a trash receptacle) in the past year? (Multiple responses allowed.)

Note: items with less than 1% responses in 2019 not included in this table unless relevant to tracking purposes

Note: web respondents selected from list of options; phone respondents were not read the list and responded unaided

▲▼Indicates significant difference compared to 2019 at 95% confidence level.

2. *Items Personally Discarded as Litter – Unaided + Aided*

When both unaided and aided littering behavior was measured, 52% of residents reported they have not littered in the past year which is down slightly from 58% in 2019 and down significantly from 63% for unaided only.

Like last year, the primary shift was the significant increase in the proportion of residents reporting they had littered food or organic materials (33% vs. only 18% unaided in 2020 and up from 24% in 2019). This reinforces the 2019 finding that residents typically do not think of failing to dispose of food or organic materials in a trash receptacle as littering. However, when asked directly, they admit to littering in this manner and perhaps learn for the first time that it is actually littering. *It is also possible this increase is partly due to the pandemic and an increase in getting meals via drive-through or curb-side rather than dining in which may have led to more frequently discarding food or organic materials.*

The percentages reporting they littered small pieces of paper (11%), cigarette butts (7%), and food wrappers (6%) also increase when residents are asked directly, but the 2020 percentages are statistically consistent with 2019.

Residents ages 55 and older were significantly more likely to report not littering in the past year compared to younger residents (62% vs. 44% ages 18-34 and 50% ages 35-54). Notably, there was no difference in the incidence of personal littering between males and females (54% and 51%, respectively).

Table 5b: Items Personally Discarded as Litter – 2020 Unaided and 2020 Unaided + Aided

Top Items Mentioned	2020 Total Unaided + Aided n=403	2019 Total Unaided + Aided n=400
Have not littered in past year.	52%	58%
Food/organic material (unaided + aided)	33%▲	24%
Small pieces of paper (unaided + aided)	11%	13%
Cigarette butts (unaided + aided)	7%	9%
Food wrappers (unaided + aided)	6%	7%
<u>Unaided Only</u>		
Cups/Cans/Bottles (unaided only)	3%	4%
Toilet paper/napkins/Kleenex (unaided only)	2%	2%
Plastic bags/other plastic (unaided only)	1%	1%
Recyclables/cardboard (unaided only)	<1%	1%
Don't know	4%	3%

Q8: UNAIDED (Phone/Web): *Can you think of items that you yourself might have discarded as litter (by litter we mean items you did not put in a trash receptacle) in the past year? (Multiple responses allowed.)* Q : AIDED: *Sometimes people are surprised by what is considered to be litter. As you read the following items, please let indicate if you may have littered in this way in the past year.*

Note: items with less than 1% responses in 2020 not included in this table.

C. Littering Circumstances

Historically, residents who reported littering were asked to recall the general circumstances of their littering behavior in an unaided format. Beginning in 2019, for any circumstances not mentioned, residents were asked if they had littered in seven different specific situations (shown in bold in the tables). The findings are reported in the historical unaided manner in #1 below and in the combined unaided/aided manner in #2 on the following page.

1. Littering Circumstances – Historical Tracking

Those who admitted to littering in the past year were most likely to report doing so while **driving or riding in a vehicle (44%)** or when **something flew out of a door, window or cab (15%)**, returning to levels observed in 2018. There were fewer mentions in comparison to 2019 for littering while walking outside (12% down from 20%) or because they did not have access to a trash can (12% down from 17%), or when in a parking lot (5% down from 15%).

Table 6a: Littering Situation – Historical Tracking (Unaided)
Among those who indicated they have littered in the past year

Top situations	2020 n=149	2019 n=135	2018 n=127	2017 n=120	2016 n=191	2015 n=115	2014 n=151
Driving/riding/traveling in vehicle	44%	55%	42%	43%	37%	45%	46%
Flew out of open door/window/cab	15%	30%	13%	13%	11%	6%	5%
Just threw it/got rid of it wherever	15%	15%	12%	11%	10%	8%	10%
Walking outside	12%	20%	21%	6%	7%	10%	7%
No trash can around (not while in car)	12%	17%	17%	10%	--	4%	5%
In a parking lot	5%	15%	12%	5%	6%	6%	3%
Cleaning out car	3%	9%	9%	3%	4%	3%	1%
Eating/chewing gum	5%	5%	4%	1%	1%	1%	1%
Smoking/discarded cigarettes/no ashtray around	2%	4%	--	1%	2%	1%	--
Don't know/can't remember	13%	13%	9%	12%	14%	15%	18%

Q9: To the best of your knowledge, what were the general circumstances in terms of where and what you were doing when you discarded litter? Any other circumstances?

▲▼ Indicates significant difference compared to 2019 at 95% confidence level.

Note: items with less than 2% responses in 2019 not included in this table.

Note: web respondents selected from list of options; phone respondents were not read the list and responded unaided

2. Littering Circumstances – Total Unaided + Aided

When both unaided and aided littering situations were measured among all respondents, the results were fairly similar to when it was asked in primarily an open ended format. Those who admitted to littering in the past year were most likely to report doing so *while driving or riding in a vehicle* (48%) or when *something flew out of a door, window or cab* (23%). Although there are some slight shifts compared to 2019, none of the changes are statistically significant.

Younger residents (18 to 34) were significantly more likely than residents 35 and older to report littering in all of the scenarios in bold below, except for while traveling in a vehicle and cleaning out a car.

Table 6b: Littering Situation –Total Unaided + Aided
Among those who indicated they have littered in the past year

Aided Situations/Top situations	2020 Total n=193	2019 Total n=167
Driving/riding/traveling in vehicle	48%	56%
Flew out of open door/window/cab	23%	32%
No trash can around (not while in car)	15%	16%
Walking outside	14%	19%
Just threw it/got rid of it anywhere I could	12%	13%
In a parking lot	11%	14%
Cleaning out car	6%	8%
Eating/chewing gum	4%	5%
Sometime litter just falls out of pocket/wind blows it away	3%	1%
In a hurry	3%	2%
Camping/hiking	2%	1%
Smoking/discarded cigarettes/no ashtray around	1%	4%
In the park	1%	1%
Don't know/can't remember	18%	15%

Q9: To the best of your knowledge, what were the general circumstances in terms of where and what you were doing when you discarded litter? Any other circumstances?

Q9a. I am going to read you some specific circumstances, please indicate if you may have littered in any of these particular circumstances this past year?

Note: items with less than 1% responses in 2020 not included in this table.

D. Personal Experience with Specific Littering Situations

Residents were read a list of five specific littering scenarios and were asked to indicate if they had experienced that littering situation in the past year. **Residents were significantly less likely to report experiencing these littering scenarios in 2020 than in 2019** (5 to 11-percentage point drops). It is reasonable to presume the pandemic played a role in these significant declines with most residents significantly reducing the amount of time spent in their vehicles.

In 2020, once again, the most common littering situation residents have experienced in the past year was *trash falling out of a vehicle* (30% down from 37% last year). The next most prevalent littering scenarios experienced were *someone threw trash out of a car window* (15% down from 20%) and *had problems with a vehicle and left debris like a tire, part of a tire, or other stuff on the roadside* (13% down from 24%). The percentage reporting that they or someone else *threw a cigarette butt out a window* declined to 11% from 16% last year.

Younger residents (18 to 34) were significantly likely than those 35 and older to have experienced all of the scenarios except for *getting a ticket or warning for littering*. Additionally, residents who have seen or heard advertisements about litter or littering were significantly more likely to have experienced *trash falling out of a vehicle* and *someone throwing trash out of a car window*.

Table 7: Experience with Littering Scenarios in Past Year

Littering Scenarios	2020 n=403	2019 n=400	2018 n=400	2017 n=401
You noticed that trash or some other item fell out of a pickup truck or other vehicle you were driving or riding in	30%▼	37%	37%	29%
Someone in a vehicle you were in threw trash out of the window. This could include things like a small wrapper, cup, can, or any other litter	15%▼	20%	21%	18%
You had problems with a vehicle and left debris like tire, part of a tire, or other stuff on the roadside	13%▼	24%	18%	21%
You or someone in the vehicle you were in threw a cigarette butt out the window	11%▼	16%	19%	13%
You or someone you were with got a ticket or warning for littering	1%	2%	1%	--

Q7: I am going to read you a few statements pertaining to littering from a vehicle, whether it is accidental or deliberate. For each of the following statements, please respond by telling me if this is something you experienced in the last year.

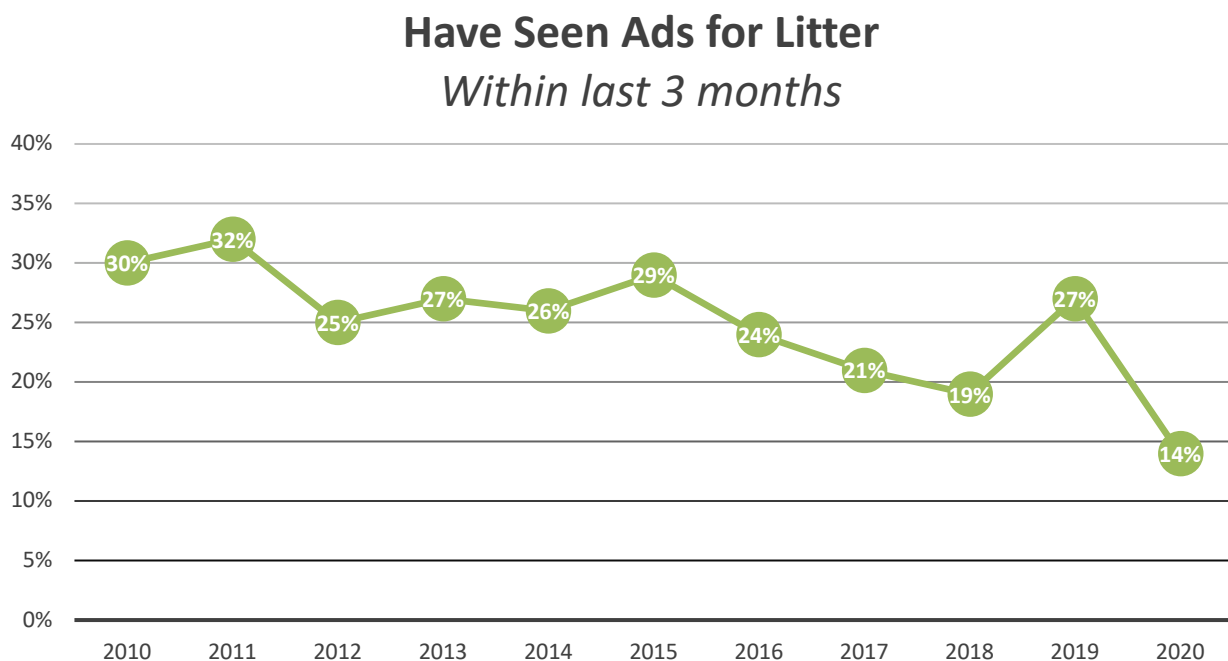
▲▼Indicates significant difference compared to 2019 at 95% confidence level.

IV. CAMPAIGN AWARENESS

A. General Campaign Awareness and Slogan Recall

After rebounding to 27% in 2019 after hitting a study low in 2018, recent awareness of litter-related advertising decreased significantly to a new study low of 14% in 2020. Awareness has varied from 19% to 32% in the prior ten years of research.

Awareness among the target group of males 18 to 34 also declined significantly this year to 19% down from 31% last year and compared to 25% in 2018. However, this compares favorably to the non-target groups (14% aware). See Appendix A for detailed results.



2020 n=403; 2019 n=400; 2018 n=400; 2017 n=401; 2016 n=502; 2015 n=401; 2014 n=401; 2013 n=451; 2012 n=600; 2011 n=602; 2010 n=601

Q11: In the past three months, have you seen, heard or read any advertisements related to litter or littering?

Among those who indicated they had seen or heard litter-related advertising in the past three months, the “slogan” residents were most likely to recall on an unaided basis was *Do not litter* (18%), which is consistent with recent years. However, unaided recall of *Don’t Trash Arizona* declined significantly this year -- 2% down from 8% to 11% measured between 2016 and 2019.

Table 8: Main Slogan of Recalled Advertising
Among those who indicated they remember seeing ads
related to litter or littering in the past 3 months

Top Responses	2020 n=56	2019 n=107	2018 n=75	2017 n=84	2016 n=118	2015 n=118	2014 n=104
Do not litter	18%	16%	15%	19%	13%	12%	12%
You will be fined	5%	4%	3%	5%	8%	5%	5%
Keep our freeways clean	4%	3%	1%	1%	2%	3%	2%
Recycle/Reduce, reuse, recycle	3%	3%	3%	--	--	1%	1%
Don’t Trash Arizona	2%▼	8%	8%	11%	11%	2%	12%
Keep Arizona Beautiful/Arizona Clean and beautiful	2%	2%	--	--	6%	5%	4%
If you pack it in you pack it out	2%	--	5%	1%	--	2%	--
No cups, cans or butts	2%						
Give a Hoot, Don’t Pollute	2%						
Don’t be a litter bug	2%						
Don’t Mess with Texas	2%						
Adopt a Highway	--	2%	1%	2%	5%	--	--
Littering is unlawful	--	1%	1%	4%	6%	3%	1%
There was no slogan	--	3%	3%	1%	4%	3%	3%
Don’t know	40%	45%	41%	37%	41%	53%	52%

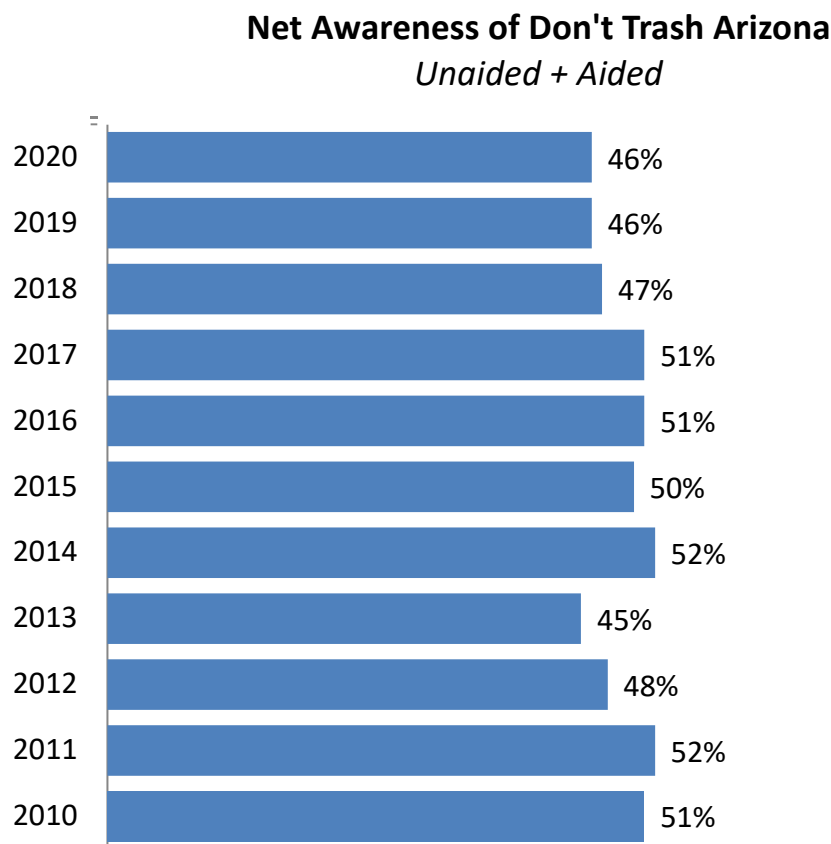
Q12: [If yes in Q11] What was the main slogan used in the ads?

Note: response categories with less than 2% mentions in 2020 are not listed in this table, unless relevant to tracking or campaign.

B. “Don’t Trash Arizona” Awareness

Similar to the past few years, nearly one-half (46%) of residents surveyed indicated either aided (44%) or unaided (2%) awareness of the slogan “Don’t Trash Arizona.” Male residents were again significantly more likely to be aware of the slogan (52% net aware vs. 40% for females).

As shown in Appendix A, total awareness of *Don’t Trash Arizona* continues to be higher among the target group than the non-target group (48% vs. 44%), however the difference is not statistically significant this year.



2020 n=403; 2019 n=400; 2018 n=400; 2017 n=401; 2016 n=502; 2015 n=401;

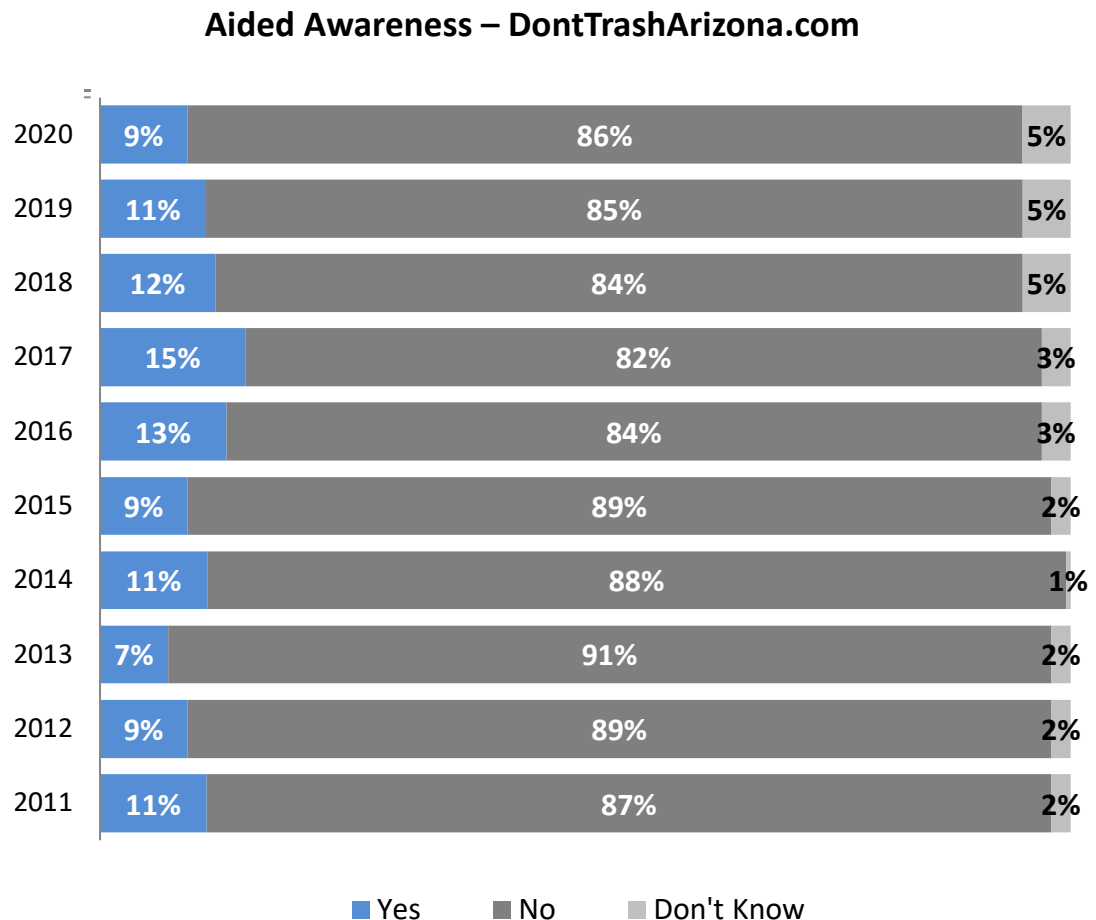
2014 n=401; 2013 n=451; 2012 n=600; 2011 n=602; 2010 n=601

Q12: [If yes in Q11] What was the main slogan used in the ads?

Q13: [If not mentioned in Q12] Have you seen or heard the slogan, “Don’t Trash Arizona?”

C. Awareness of Website

Nearly one in ten residents (9%) were aware of the website DontTrashArizona.com which is consistent with previous years. Male residents were twice as likely as female residents to report awareness (12% vs. 6%), but awareness was only slightly elevated among 18 to 34 year olds (11% vs. 8% of older residents).



2020 n=403; 2019 n=400; 2018 n=400; 2017 n=401; 2016 n=502; 2015 n=401; 2014 n=401; 2013 n=451; 2012 n=600; 2011 n=602

Q14: Have you heard of www.DontTrashArizona.com?

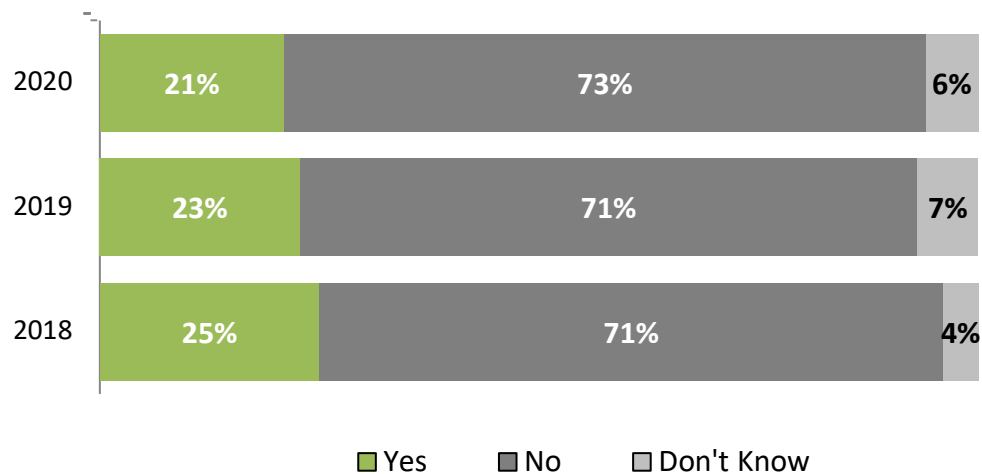
No significant differences compared to 2019 at 95% confidence level

D. *"Arizona Is Our Home. Love it. Don't Trash it" Awareness*

Similar to last year, approximately one in five residents (21%) were aware of the slogan **"Arizona Is Our Home. Love it. Don't Trash it"**. Male residents remained significantly more likely than females to have heard of the slogan (26% vs. 16%), but unlike last year, awareness was not notably different between age groups.

The slogan is only slightly more well-known among the target audience. (See Appendix A).

Aided Awareness – "Arizona Is Our Home. Love it. Don't Trash It."



2019 n=400; 2018 n=400

Q15: Have you seen or heard the slogan, "Arizona Is Our Home. Love it. Don't Trash it."?

No significant differences compared to 2019 at 95% confidence level

E. Source of Awareness of Slogans - Unaided

Residents aware of the slogan “Don’t Trash Arizona” and/or the slogan “Arizona is Our Home. Love It. Don’t Trash It.” most often reported outdoor promotion as their source of awareness again this year (54% and 24% mentioned billboards, buses, freeway signs, etc.). Like last year, television and radio rounded out the top three sources for both slogans (16% mentioned each).

Mentions of outdoor advertising of the slogan “Don’t Trash Arizona” was significantly higher this year than in 2019 (54% vs. 43%). Social media mentions were up slightly over 2019 with 4% naming it for “Don’t Trash Arizona” and 7% for “Arizona is our Home.”

Table 9a: Where Heard/Saw Slogans
Among those Aware of Slogans

Source	2020 Don’t Trash Arizona n=186	2019 Don’t Trash Arizona n=182	2020 AZ is Our Home. Love it. Don’t Trash It. n=85	2019 AZ is Our Home. Love it. Don’t Trash It. n=90
Outdoor (Billboards, buses, freeway signs, road signs, etc.)	54%▲	43%	24%	30%
Radio	16%	17%	9%	14%
Television	16%	21%	22%	30%
Social Media	4%	3%	7%	3%
Online	4%	2%	8%	3%
Newspapers/magazine	1%	2%	2%	3%
Word of mouth/friends and family	1%	1%	-	2%
Other	1%	4%	11%	4%
Don’t know	18%	20%	23%	16%

Q13b. Where did you see or hear this slogan - “Don’t Trash Arizona”?

Q15b. Where did you see or hear this slogan - “Arizona is Our Home. Love It. Don’t Trash It.”

▲▼Indicates significant difference compared to 2019 at 95% confidence level.

**Table 9b: Social Media Platforms Likely Used
For “not trashing AZ” Slogans/Information**

Frequency	2020 n=9
Facebook	6
Twitter	1
Instagram	4
Other	1
Don’t know	1

QNEW 16C. IF “a. Social media” in Q13b, 15b, or 16b: What social media platforms are you most likely to be using when you see the slogans and information about not trashing Arizona?

F. Advertising Placement Most Likely to Catch Attention - Unaided

Residents most frequently mentioned that outdoor advertising catches their attention the most (38%), followed by social media (27%), television (25%) and radio (23%). Significantly more residents indicated social media platforms were most attention getting (27% up from 11%) and fewer residents mentioned outdoor advertising and television in 2020.

Outdoor advertising and radio were significantly more popular among residents over age 35 (47% and 45% vs. 21% of those 18 to 34; 30% radio among those 35 to 54 vs. 14% under age 35). Advertising on television is most likely to catch the attention of those age 55 and older (42% vs. 18% 18 to 34 and 16% age 35 to 54). As might be expected, social media is more popular among 18 to 34 year olds (54% vs. 19% 35 to 54 and 9% aged 55+).

Table 10: Most Eye Catching Advertising Placement - Unaided

Unaided Placement	2020 Total n=403	2019 Total n=400
Outdoor (Billboards, buses, freeway signs, road signs, etc.)	38%▼	42%
Social Media	27%▲	12%
Television	25%▼	33%
Radio	23%	25%
Online	11%	9%
Newspapers/magazine	2%	3%
Email	<1%	1%
Direct mail	<1%	<1%
Other	2%	2%
Don't know	5%	7%

Q17. Where are you likely to see or hear advertisements that catch your attention the most?

▲▼ Indicates significant difference compared to 2019 at 95% confidence level.

V. PROFILES OF LITTERERS

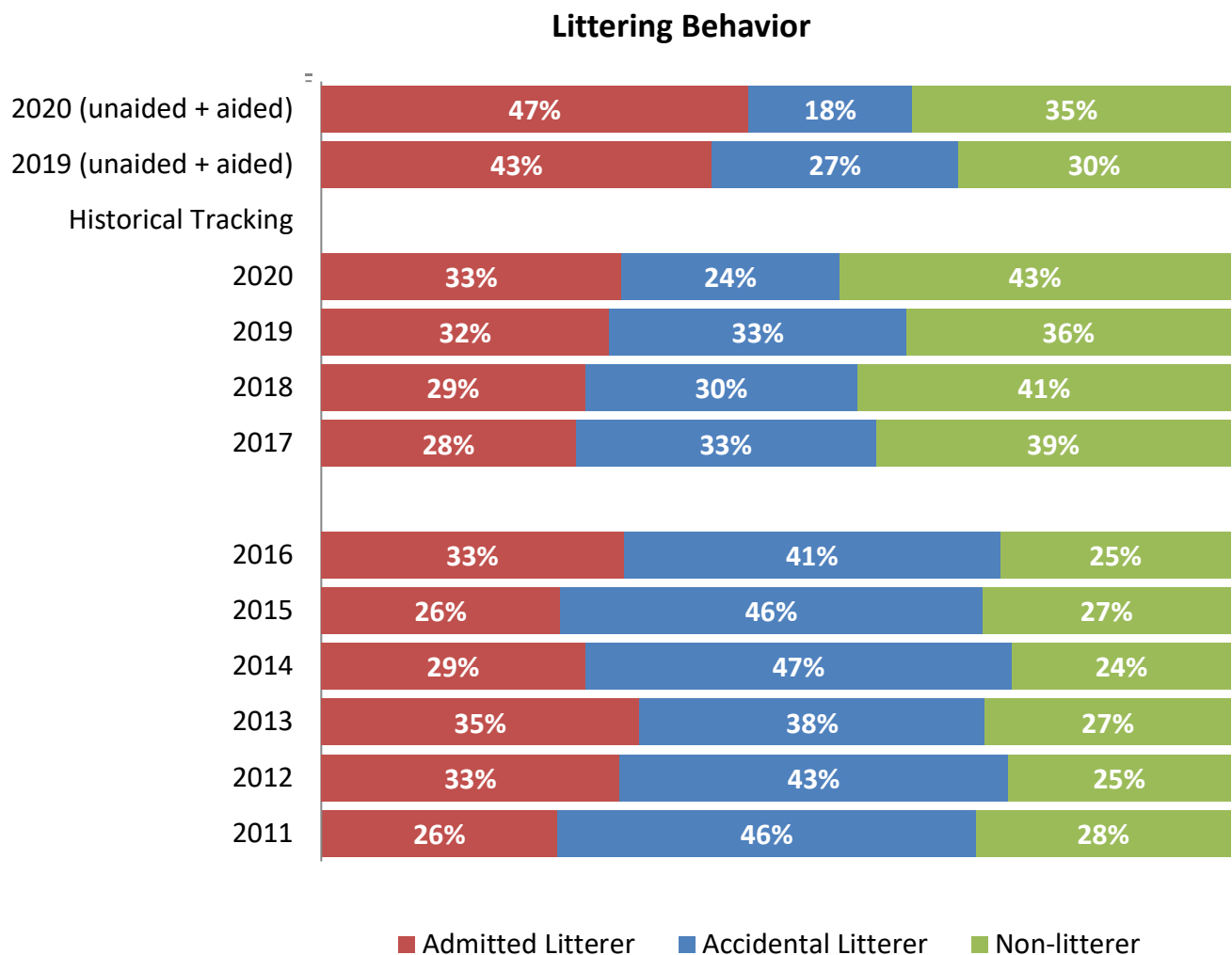
Residents were segmented into three categories based on their reported littering behavior. Historically, the question measuring littering behavior was primarily asked in an unaided format. Beginning in 2019, to evaluate the accuracy of self-reported littering behavior, residents were asked about their littering behavior in both an unaided and aided manner. Thus the question was asked as an open end as it had been historically, but residents were also asked if they had personally littered in four specific ways (aided). Both measures are reported in the graph below in order to maintain tracking while determining if littering must be defined to accurately report it. *Of note, in 2017, the definition of accidental and non-litterers were adjusted which caused a break in the tracking of those two categories.*

- **“Admitted Litterers”** – Residents who specifically mentioned items they recalled littering in the past year. (In 2020 and 2019, both unaided and aided types of littering behavior were included).
- **“Accidental Litterers”** -- Residents who indicated they had not littered in the past year, but responded that they had experienced at least one of the five littering scenarios in the past year.
- **“Non-Litterers”** – Residents who indicated they had not littered personally that in the past year or experienced any of the five littering situations presented in the past year.



When reported using the historic method, the 2020 general population was comprised of **33% Admitted Litterers, 25% Accidental Litterers, and 43% Non-Litterers**. This represents a significant shift in the proportion of Accidental and Non-litters but is virtually the same proportion of Admitted Litterers as last year.

Like last year, the percentage of admitted litterers increases significantly when residents were also asked if they had littered in four specific ways (food/organic materials, small pieces of paper, cigarette butts, and food wrappers). **This year nearly one-half of residents (47%) admitted to littering when unaided and aided littering was identified which is similar to the 43% measured in 2019.** However, the proportion of Accidental Litterers was significantly lower this year (18% down from 27%) and the proportion of non-litterers increased slightly (35% up from 30% in 2019).



The breakdown of littering behavior demographics below is based on the 2020 and 2019 aided/unaided method of capturing littering behavior. As expected, admitted litterers continue to have a higher proportion of 18 to 34 year olds than the other groups, however unlike last year, males and females are equally represented in this group.

Although females make up a larger proportion of Admitted Litterers in 2020 than in 2019 (49% up from 42%), the demographic composition of each group did not change significantly compared to 2019 with regard to gender, age and language spoken at home.

Table 11: Demographic Comparison Based on Littering Behavior – 2019-2020 Tracking Unaided + Aided Littering Behavior

Characteristic	2020 – Unaided/Aided Litter Behavior			2019 – Unaided/Aided Litter Behavior		
	Admitted Litterers n=132 A	Accidental Litterers n=99 B	Non-Litterers n=172 C	Admitted Litterers n=171 D	Accidental Litterers n=110 E	Non-Litterers n=119 F
Gender						
Male	51%	50%	50%	58% ^{EF}	45%	43%
Female	49%	50%	50%	42%	55% ^D	57% ^D
Age						
18 to 34	50% ^{BC}	26%	21%	47% ^{EF}	34% ^F	14%
35 to 54	33%	33%	36%	33%	26%	40% ^E
55+	17%	42% ^A	43% ^A	19%	40% ^D	46% ^D
Average	37.8 yrs	46.2 yrs ^A	47.2 yrs ^A	38.7 yrs	44.5 yrs ^D	49.0 yrs ^{DE}
Household Language						
English only	73%	75%	86% ^{AB}	71%	73%	85% ^{DE}
Spanish only	-	1%	-	--	1%	1%
Mostly Spanish + some English	2%	1%	-	1%	3%	3%
Equally Spanish and English	6%	5%	3%	7%	6%	--
Mostly English + some Spanish	12% ^C	11%	5%	15% ^F	10%	7%
English + Other	6%	6%	5%	6%	6%	5%
Refused	2%	1%	2%	--	2%	--

ABC/DEF Indicates significantly higher than corresponding sub-group in the same year.

Note: No significant differences between same groups from 2019 to 2020.

APPENDIX A

TARGET AUDIENCE OVER-SAMPLE RESULTS MALES AGED 18 TO 34 VS. NON-TARGET



BACKGROUND

Since 2013, WestGroup Research oversampled the target audience (males ages 18 to 34) until a threshold of at least n=200 was achieved. Those results were pulled out separately in order to monitor changes within the target audience as well as to compare the target audience to the non-target audience. Most residents in the oversample of males 18 to 34 in 2020 were completed via a web survey with members of an online panel (175 of the 202 total target surveys). Only 27 surveys among the target group were completed over the phone.

DRIVER CHARACTERISTICS

Table A1: How often Drivers Secure Loads – Target vs. Non-Target

Frequency	2020* Target n=202	2019 Target n=209	2018 Target n=235	2017 Target n=227	2020* Non- Target n=357	2019 Non- Target n=329	2018 Non- Target n=330	2017 Non- Target n=343
Always	45%	52%	60%	53%	37%	44%	44%	41%
Sometimes	7%	9%	8%	9%	5%	3%	2%	1%
Never	2%	2%	2%	4%	6%▼	11%	5%	3%
I don't haul	46%▲	36%	30%	34%	52%▲	41%	49%	55%

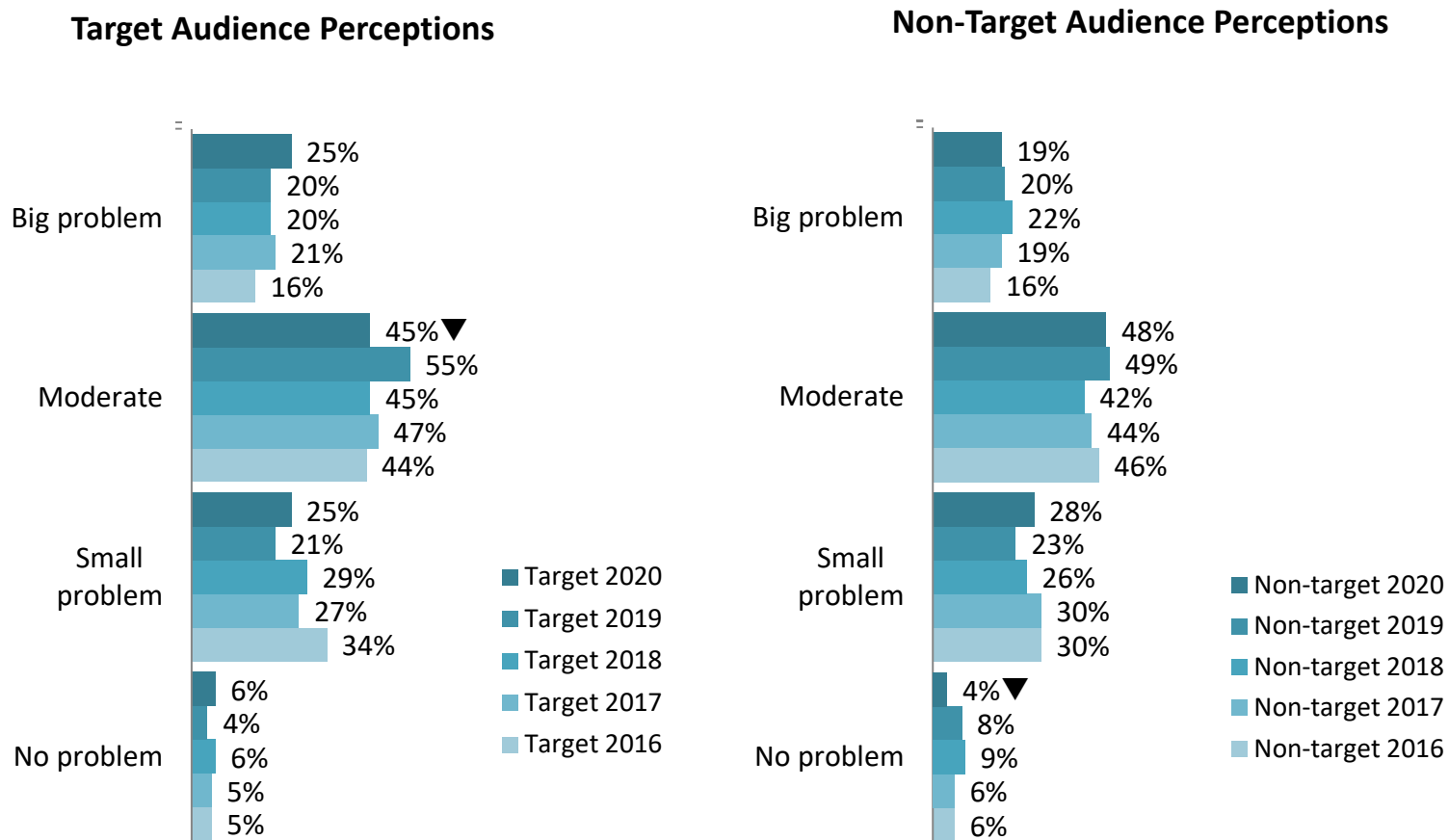
**2020 Q10: Typically, when driving in a pick-up truck or pulling an open-air trailer, how often do you secure a load that you are hauling with ties, bungees, or a tarp?*

2017-2019: Q10: When putting items into the bed of your truck, how often, on average, do you secure your load either with ties, bungees, a tarp, etc.?

▲▼ Indicates significant difference compared to 2019 at 95% confidence level.

LITTER AWARENESS AND BEHAVIOR

**Figure A1: Perception of Problem of Litter on Maricopa County Freeways
Target vs. Non-Target**



Q6: In your opinion, how big of a problem is litter along freeways in Maricopa County? Would you say it is a...

Target 2020 n=202; 2019 n=209; 2018 n=235; 2017 n=227; 2016 n=194

Non-Target 2020 n=357; 2019 n=329; 2018 n=330; 2017 n=343; 2016 n=308

▲▼Indicates significant difference compared to 2019 at 95% confidence level.

Table A2a: Items Personally Discarded as Litter – Target vs. Non-Target Aided + Unaided

Top Items Mentioned	2020 Target n=202	2019 Target n=209	2020 Non-Target n=357	2019 Non-Target n=329
Have not littered in past year.		35%		
Small pieces of paper; receipts, lottery tickets, gum wrappers, etc.	26%▼	42%		
Food, raw food, organic or natural materials		26%	32%	
Cigarette butts	17%▼	26%	7%	
Food wrappers such as chip bags, candy wrappers, etc.		19%	3%	4%
Cups/cans/bottles	10%	12%	3%	1%

Q8: Can you think of items that you yourself might have discarded as litter (by litter we mean items that you did not put in a trash receptacle) in the past year? 8a. Sometimes people are surprised by what is considered to be litter, as I read the following items, please tell me if you may have littered in this way.

▲▼ Indicates significant difference compared to 2019 at 95% confidence level.

Table A2b: Items Personally Discarded as Litter – Target vs. Non-Target (Historical)

Top Items Mentioned	2020 Target n=202	2019 Target n=209	2018 Target n=235	2017 Target n=227	2020 Non-Target n=357	2019 Non-Target n=329	2018 Non-Target n=330	2017 Non-Target n=343
Have not littered in past year.	41%▲	32%	41%	40%	66%	73%	73%	74%
Small pieces of paper	24%▼	41%	35%	34%	5%	5%	6%	5%
Food/organic material	22%	24%	26%	22%	18%	13%	12%	14%
Cigarette butts	17%▼	26%	24%	17%	3%	4%	5%	2%
Food wrappers	16%	18%	15%	14%	2%	3%	3%	2%
Cups/cans/bottles	10%	11%	1%	3%	2%	1%	--	--

Q8: Can you think of items that you yourself might have discarded as litter (by litter we mean items that you did not put in a trash receptacle) in the past year? NOTE: web participants select from a list, vs. previous years telephone residents were not read the list. This likely explains the increase in reported litter of small pieces of paper and cigarette butts.

▲▼ Indicates significant difference compared to 2019 at 95% confidence level.

Table A3a: Littering Circumstances – Target vs. Non-Target
Among those who indicated they have littered in the past year
Aided + Unaided Littering Situations

	2020 Target n=108	2019 Target n=135	2020 Non-Target n=158	2019 Non-Target n=121
Top situations				
Driving/riding/traveling in vehicle.		63%		
Walking outside.		42%	11%	
No trash can around.		36%	12%	
Opened door/window–flew out.		41%	22%	
In a parking lot.		22%	11%	
Just threw it/anywhere I could.		25%	13%	
Cleaning out car.	15%	17%	8%	6%
Don't know/can't remember.				16%

Q9: To the best of your knowledge, what were the general circumstances in terms of where and what you were doing when you discarded litter? Any other circumstances? 9a. I am going to read you some specific circumstances, please indicate if you may have littered in any of these particular circumstances this past year?

Table A3b: Littering Circumstances – Target vs. Non-Target (Historical)
Among those who indicated they have littered in the past year

	2020 Target n=108	2019 Target n=143	2018 Target n=139	2017 Target n=136	2020 Non-Target n=158	2019 Non-Target n=90	2018 Non-Target n=89	2017 Non-Target n=91
Top situations								
Driving/riding/traveling in vehicle.	56%	58%	46%	48%	49%	54%	42%	44%
Walking outside.	32%	38%	34%	27%	11%	13%	15%	3%
Opened door/window–flew out.	26%	36%	25%	32%	22%	26%	14%	11%
No trash can around.	26%	32%	26%	14%	12%	9%	9%	10%
In a parking lot.	22%	20%	17%	13%	11%	11%	10%	4%
Just threw it/anywhere I could.	20%	23%	12%	7%	13%	14%	12%	10%
Cleaning out car.	15%	16%	18%	12%	8%	6%	5%	3%
Don't know/can't remember.	7%	9%	6%	5%	17%	12%	12%	15%

Q9: To the best of your knowledge, what were the general circumstances in terms of where and what you were doing when you discarded litter? Any other circumstances? NOTE: web participants select from a list, vs. previous years telephone residents were not read the list.

▲▼ Indicates significant difference compared to 2019 at 95% confidence level.

Table A4: Experience with Littering Scenarios in Past Year – Target vs. Non-Target

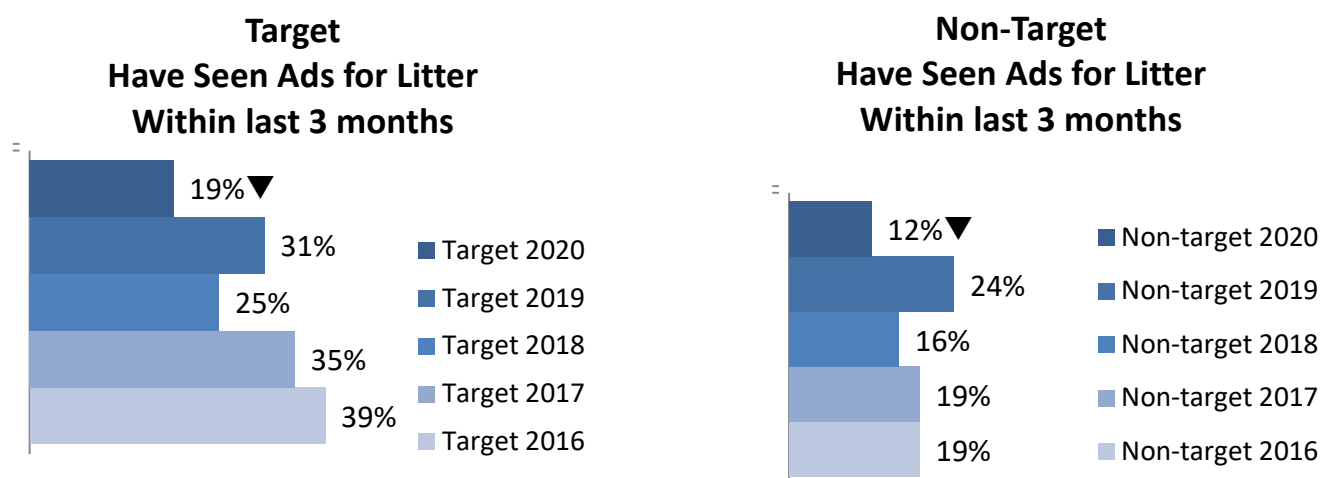
Littering Scenarios	Target 2020 (n=187)	Target 2019 (n=209)	Target 2018 (n=235)	Target 2017 (n=216)	Non- Target 2020 (n=355)	Non- Target 2019 (n=329)	Non- Target 2018 (n=330)	Non- Target 2017 (n=343)
You noticed that trash or some other item fell out of a pickup truck or other vehicle you were driving or riding in	44%▼	57%	57%	49%	29%	32%	35%	28%
Someone in a vehicle you were in threw trash out of the window. This could include things like a small wrapper, cup, can, or any other litter	33%	40%	43%	41%	12%	15%	17%	15%
You or someone in the vehicle you were in threw a cigarette butt out the window	28%	33%	42%	39%	11%	13%	14%	10%
You had problems with a vehicle and left debris like tire, part of a tire, or other stuff on the roadside	22%▼	31%	26%	28%	13%▼	21%	18%	22%
You or someone you were with got a ticket or warning for littering	3%	6%	5%	4%	1%	2%	1%	--

Q7: I am going to read you a few statements pertaining to littering from a vehicle, whether it is accidental or deliberate. For each of the following statements, please respond by telling me if this is something you experienced in the last year

▲▼ Indicates significant difference compared to 2019 at 95% confidence level.

CAMPAIGN AWARENESS

Figure A2: Awareness of Littering Advertising – Target vs. Non-Target



Q11: In the past three months, have you seen, heard or read any advertisements related to litter or littering?

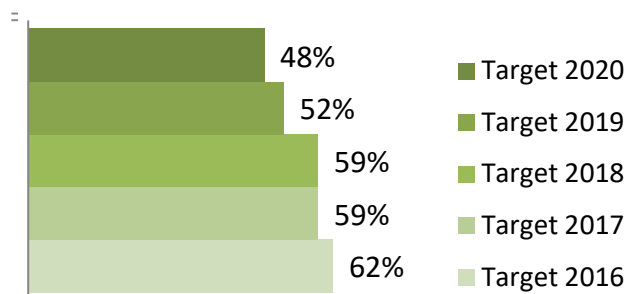
Target 2020 n=202; 2019 n=209; 2018 n=235; 2017 n=227; 2016 n=194

Non-Target 2020 n=357; 2019 n=329; 2018 n=317; 2017 n=343; 2016 n=308

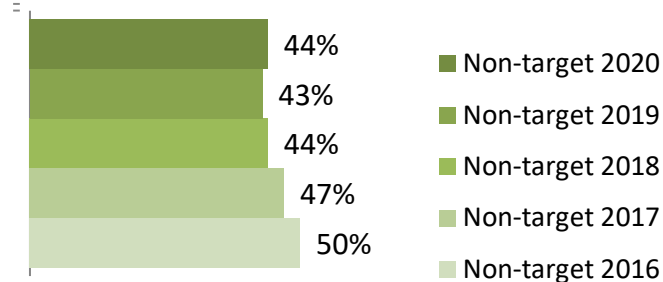
▲ ▼ Indicates significant difference compared to 2019 at 95% confidence level.

Figure A3: Awareness of Don't Trash Arizona Slogan – Target vs. Non-Target

Net Awareness of Don't Trash Arizona Slogan - Target



Net Awareness of Don't Trash Arizona Slogan - Non-Target



Target 2020 n=202; 2019 n=209; 2018 n=235; 2017 n=227; 2016 n=194

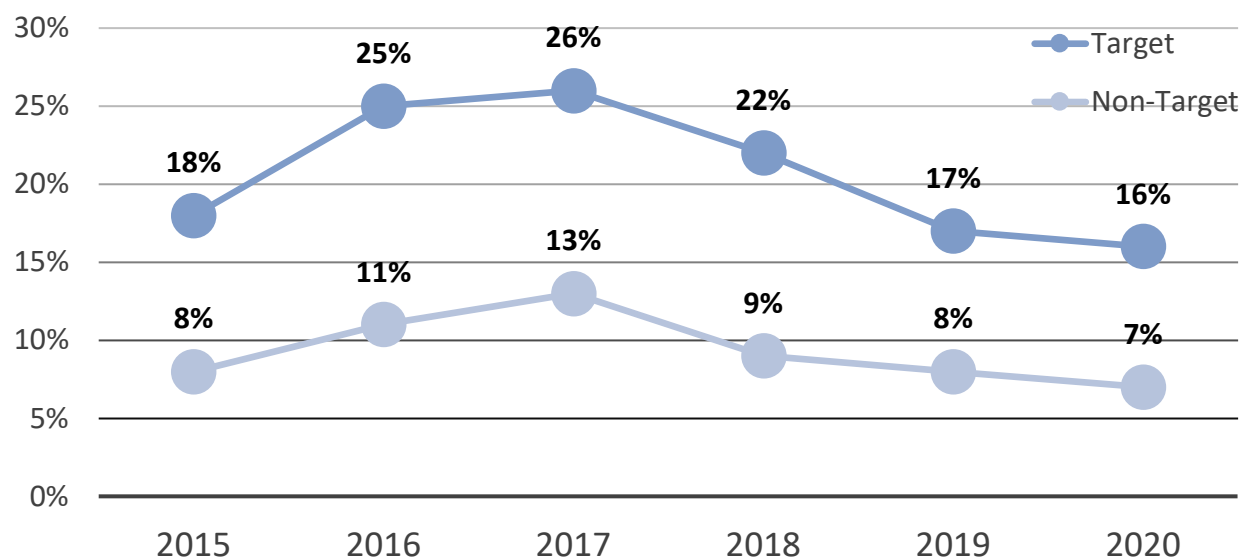
Non-Target 2020 n=357; 2019 n=329; 2018 n=330; 2017 n=343; 2016 n=308

Q12: [If yes in Q20] What was the main slogan used in the ads?

Q13: [if not mentioned in Q22] Have you seen or heard the slogan, "Don't Trash Arizona?"

No significant difference compared to 2019 at 95% confidence level.

Figure A4: Awareness of www.DontTrashArizona.com Target vs. Non-Target



Target 2020 n=202; 2019 n=209; 2018 n=235; 2017 n=227; 2016 n=194; 2015 n=200

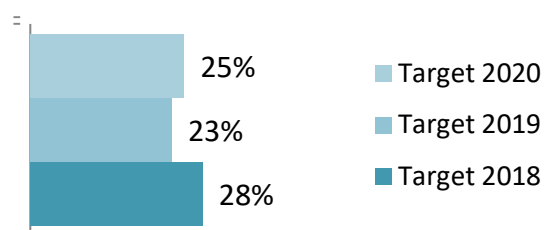
Non-Target 2020 n=357; 2019 n=329; 2018 n=330; 2017 n=343; 2016 n=308; 2015 n=353

Q14: Have you heard of www.DontTrashArizona.com?

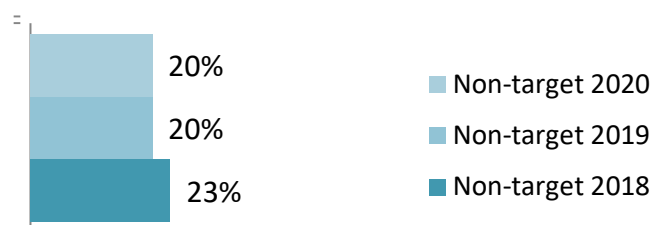
No significant difference compared to 2019 at 95% confidence level.

**Figure A5: Awareness of Slogan: Arizona is Our Home. Love it. Don't Trash It.
Target vs. Non-Target**

Net Awareness of Slogan - Target



Net Awareness of Slogan - Non-Target



Target 2020 n=202; 2019 n=209; 2018 n=235

Non-Target 2020 n=357; 2019 n=329; 2018 n=330

Q15: Have you seen or heard the slogan, "Arizona Is Our Home. Love it. Don't Trash It."?

No significant difference compared to 2019 at 95% confidence level.

Table A5: Where Heard/Saw Slogans – Target vs. Non-Target
Among those Aware of Slogan

Source	TARGET Don't Trash Arizona n=96	NON-TARGET Don't Trash Arizona n=156	TARGET AZ is Our Home. Love it. Don't Trash It. n=50	NON-TARGET AZ is Our Home. Love it. Don't Trash It. n=71
Outdoor (billboards, buses, freeway signs, road signs, etc).	52%	55%	30%	27%
Television	25%	14%	30%	23%
Radio	13%	17%	6%	11%
Online	4%	4%	14%	7%
Social Media	3%	4%	8%	6%
Word of mouth/friends and family	1%	-	-	-
Newspapers/magazine	1%	1%	4%	1%
Other	4%	1%	2%	11%
Don't know	10%	19%	14%	21%

Q13b. Where did you see or hear this slogan - "Don't Trash Arizona"?

Q15b. Where did you see or hear this slogan - "Arizona is Our Home. Love It. Don't Trash It."

Table A6: Social Media Platforms Used When Viewing Slogans – Target vs. Non-Target

Source	Target n=202	Non-Target n=357
Facebook	40%	38%
Twitter	17%	11%
Instagram	27%	28%
Other	1%	2%
Don't know	44%	52%

QNEW16C. What social media platforms are you most likely to be using when you see the slogans and information about not trashing Arizona?

Table A7: Most Eye Catching Advertising Placement
Unaided - Target vs. Non-Target

Unaided Placement	2020 Target n=202	2019 Target n=209	2020 Non-Target n=357	2019 Non-Target n=329
Outdoor (Billboards, buses, freeway signs, road signs, etc.)	23%▼	39%	39%	41%
Social Media	47%▲	20%	27%▲	9%
Television	21%	22%	27%▼	38%
Online	7%	11%	10%	9%
Streaming services (Hulu, Netflix, etc.)	4%	2%	1%	-
Radio	13%▼	24%	23%	25%
Word of mouth/friends/family	1%	1%	<1%	<1%
Email	<1%	1%	<1%	1%
Newspapers/magazine	<1%	<1%	2%	2%
Direct mail	-	-	<1%	<1%
Phone	-	2%	1%	-
Other	-	1%	3%	2%
Don't know/No answer	9%	8%	4%	7%

Q17. Where are you likely to see or hear advertisements that catch your attention the most?

▲▼ Indicates significant difference compared to 2019 at 95% confidence level.

EVALUATION OF ADVERTISEMENTS AND GIVEAWAYS AMONG WEB RESPONDENTS (18-34 YEAR OLDS)

BILL BOARD ADS EVALUATED

Ad A - Cigarette.



Ad B – Water Bottle.



Ad C – Pop Top.

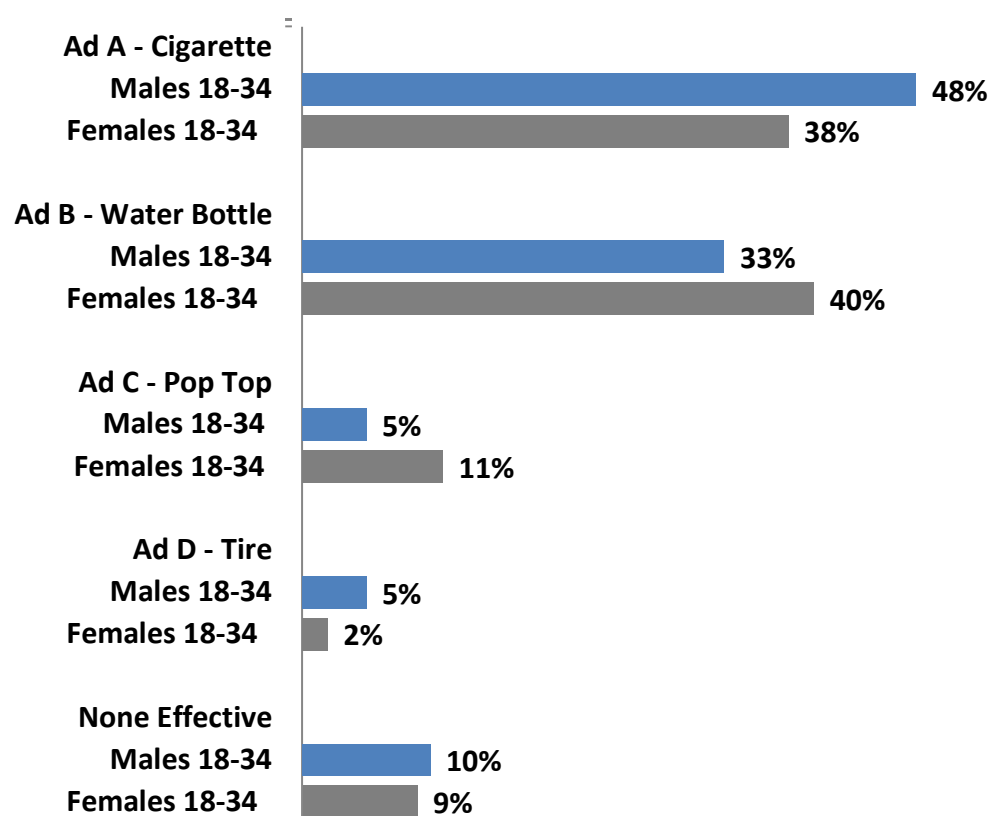


Ad D - Tire.



Web survey respondents (all aged 18-34) were shown four different billboard ads. **The cigarette and water bottle billboards were most preferred overall.** Males were more likely to prefer the cigarette billboard (48% vs. 38%) and females favored the water bottle billboard (40% vs. 33%).

Figure A6: Billboard Advertising Preference



Web Surveys Only/18-34 year olds; 2020 n=175 males, n=81 females

Which of the following four ads do you think would be the most effective to stop people from littering?

GIVE AWAY ITEMS EVALUATED

Sticker A.



Trash Bag.



Sticker B.

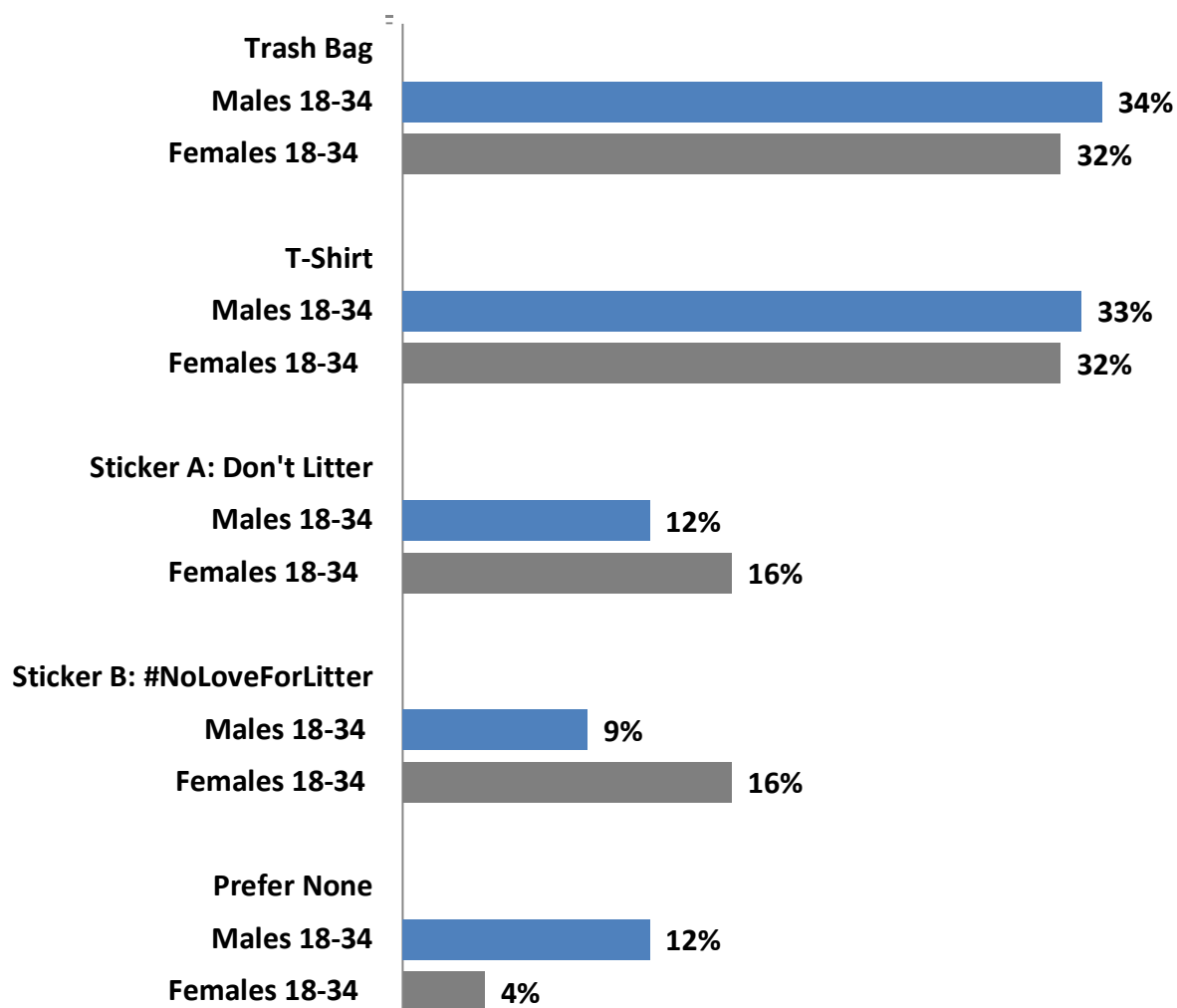


T-Shirt.



Web survey respondents (all aged 18-34) were shown four different giveaway items. **The trash bag and t-shirt were the most popular giveaways**, both preferred by approximately one-third of males and females.

Figure A7: Giveaway Item Preference



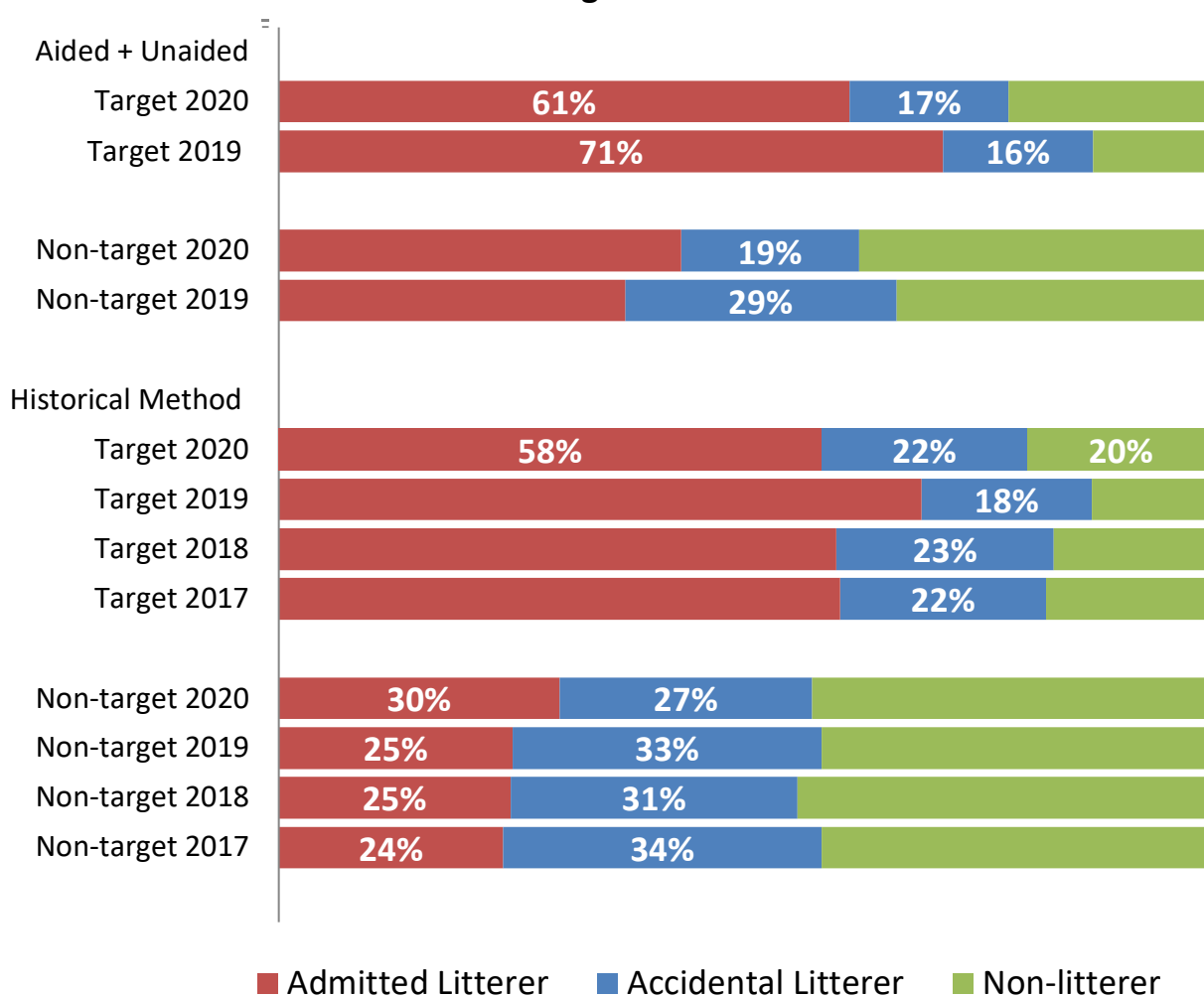
Web Surveys Only/18-34 year olds; 2019 n=175 males, n=81 females

Which of these free items would you be most interested in taking home from an event?

PROFILES OF LITTERERS

In 2019 and 2020, residents were asked about their littering behavior in both an unaided and aided manner. Both the historical littering behavior measure and newer measure are reported in the graph below to maintain tracking. **The proportion of Target group Admitted Litterers dropped a significant 10-percentage points compared to 2019 -- using both methods.** In contrast, the incidence of Admitted Litterers among the Non-target increased slightly in 2020.

Figure A8: Littering Behavior - Target vs. Non-Target
Littering Behavior



Indicates significant difference compared to 2019 at 95% confidence level.

APPENDIX B

QUESTIONNAIRE



Client: Maricopa Association of Governments
Subject: Litter Survey 2020
Date: September 2020

Introduction

Hello, my name is _____, and I am calling from WestGroup Research an independent research company. We are conducting a brief survey on the topic of litter and would appreciate your input.

Rebuttal: The issue of litter is very important to the county and they want to understand public opinion, even if litter is not something you think about very often

1. First, are you or is any member of your family currently employed in any of the following...? READ LIST; IF YES TO ANY: THANK AND TERMINATE

- a. Advertising or marketing research
- b. ADOT (Arizona Department of Transportation)
- c. MAG (Maricopa Association of Governments)
- d. A professional waste collection or recycling company
- e. The waste management industry
- f. None of the above

2. Please tell me which of the following age categories includes your age? Please stop me when I read the correct category. READ LIST; ALLOW ONLY ONE RESPONSE

- a. Under 18 TERMINATE
- b. 18 to 34
- c. 35 to 54
- d. 55+
- e. Prefer not to answer TERMINATE

3. If "Under 18" or "Refused," continue with: May I please speak to someone in the household who is between the ages of 18 and 65?

4. Do you live in Maricopa County? If no, ask to speak to someone who does.

5. RECORD GENDER (DO NOT ASK; RECORD BY OBSERVATION)

- a. Male
- b. Female



Litter Awareness

Today, I would like to talk to you specifically about the topic of litter. When answering the following questions, please be open and accurate about your opinions and actions. We are trying to understand what people really think about litter. All of your responses will remain confidential.

6. In your opinion, how big of a problem is litter along freeways in Maricopa County? Would you say it is a....

- a. Big problem
- b. Moderate problem
- c. Small problem
- d. Not a problem at all
- e. Don't know / Refused (DO NOT READ)

New1. Over the past six months, would you say you are seeing more or less litter along the freeways than you recall seeing prior to the start of the pandemic in March?

- a. More
- b. Less
- c. The same amount
- d. Don't know

New2. Do you have a litter bag or trash can in your vehicle?

- g. Yes
- h. No
- i. Don't have a vehicle
- j. Don't know / Refused

New2a. IF NO IN NEW2: Would you consider keeping a litter bag or trash can in your vehicle?

- a. Yes
- b. No
- c. Don't know / Refused

7. I am going to read you a few statements pertaining to littering from a vehicle, whether it is accidental or deliberate. For each of the following statements, please respond by telling me if this is something you experienced in the last year.

- a. You noticed that trash or some other item fell out of a pick-up truck or other vehicle you were driving or riding in.
- b. Someone in a vehicle you were in threw trash out of the window. This could include things like a small wrapper, cup, can, or any other litter.



- c. You had problems with a vehicle and left debris like a tire, part of a tire, or other stuff on the roadside.
- d. You or someone you were with got a ticket or warning for littering.
- e. You or someone in the vehicle you were in threw a cigarette butt out the window.

Littering Behavior

8. What items might you, yourself, have discarded as litter in the past year? By litter we mean items that you did not put in a trash receptacle. (DO NOT READ – ALLOW MULTIPLE RESPONSES)

- a) Small pieces of paper such as receipts, lottery tickets, gum wrappers, etc.
- b) Cigarette butts
- c) Food wrappers such as chip bags, candy wrappers, etc.
- d) Food, raw food or organic or natural materials
- e) Have not littered in past year
- f) Have you thought of anything else you may have littered in the past year that I have not mentioned?

Ask Q8a of All not mentioned in Q8 and all who answered “Have not littered in the past year”

8a. Sometimes people are surprised by what is considered to be litter, as I read the following items, please tell me if you may have littered any of these items.

Multiple Responses Allowed

- g) Small pieces of paper such as receipts, lottery tickets, gum wrappers, etc.
- h) Cigarette butts
- i) Food wrappers such as chip bags, candy wrappers, etc.
- j) Food, raw food or organic or natural materials
- k) Have not littered in past year
- l) Have you thought of anything else you may have littered in the past year that I have not mentioned?

Q9 and Q9a: ONLY SHOWN TO THOSE WHO HAVE LITTERED IN PAST YEAR

9. To the best of your knowledge, what were the general circumstances in terms of where and what you were doing when you discarded litter? PROBE: Any other circumstances? (DO NOT READ LIST – ALLOW MULTIPLE RESPONSES)

- a. Driving or riding in a vehicle
- b. Walking outside
- c. Opened door or window and it flew out
- d. You could not find a trash can



- e. Cleaning out a vehicle
- f. In a parking lot
- g. Just needed to throw something out anywhere you could
- h. In another circumstance I haven't mentioned?
- i. Don't know/Can't remember / don't recall
- j. NONE OF THE ABOVE

(Ask of those not mentioned in Q9)

9a. I am going to read you some specific circumstances, please indicate if you may have littered in any of these particular circumstances this past year?

READ LIST/SHOW LIST – SELECT ALL THAT APPLY

- a. Driving or riding in a vehicle
- b. Walking outside
- c. Opened door or window and it flew out
- d. You could not find a trash can
- e. Cleaning out a vehicle
- f. In a parking lot
- g. Just needed to throw something out anywhere you could
- h. In another circumstance I haven't mentioned?
- i. Don't know/Can't remember / don't recall
- j. NONE OF THE ABOVE

10. Typically, when driving in a pick-up truck or pulling an open-air trailer, how often do you secure a load that you are hauling with ties, bungees, or a tarp? Would you say that you Always, sometimes or never secure loads? Or do you never haul anything?

- a. Always
- b. Sometimes
- c. Never
- d. I don't haul.

NEW 3. (As 10b) If or when you have a need to haul something that needs to be secured with ties, bungees or a tarp, how would you rate your level of knowledge about the best way to secure your load? Would you say you are:

- a. Very knowledgeable
- b. Somewhat knowledgeable
- c. Not very knowledgeable
- d. Not at all knowledgeable



NEW4. Which of the following describes your reaction when you see litter along the highway or see something fall or be thrown from a vehicle while driving on the highway? (ROTATE LIST – MULTIPLE SELECTIONS ALLOWED)

- a. Angry
- b. Frustrated
- c. Disgusted
- d. Worried
- e. I don't care
- f. I don't recall seeing litter
- g. No reaction
- h. Other: Specify

Litter Campaign Awareness

11. In the past three months, have you seen, heard or read any advertisements related to litter or littering?

- a. Yes
- b. No
- c. Don't know / Refused

12. IF YES IN Q11: What was the main slogan used in the ads?

DO NOT READ LIST - MULTIPLE RESPONSES ALLOWED.

- a. Don't Trash Arizona
- b. Arizona Is Our Home.
- c. No cups cans or butts
- d. Trash Talk
- a. Keep Arizona Beautiful
- b. Do not litter
- c. You will be fined
- d. Littering is unlawful
- e. Go green
- f. Grow up. Don't Litter
- g. Adopt a highway
- h. It is your environment
- i. Keep our freeways clean
- j. None
- k. Other _____
- l. Don't know / Refused

13. IF NOT MENTIONED IN Q12: Have you seen or heard the slogan, "Don't Trash Arizona?"

- a. Yes
- b. No
- c. Don't know



13b. If YES, where did you see or hear the slogan, “Don’t Trash Arizona”? (DO NOT READ LIST - MULTIPLE SELECTIONS ALLOWED)

- a. social media
- b. television
- c. online
- d. newspapers and magazines
- e. radio
- f. direct mail
- g. email
- h. outdoor (billboards, buses, etc.)
- i. other: Specify:
- j. Don’t know

14. Have you heard of www.DontTrashArizona.com?

- a. Yes
- b. No
- c. Not sure/DK

15. IF NOT MENTIONED IN Q12: Have you seen or heard the slogan, “Arizona Is Our Home. Love it. Don’t Trash it?”

- a. Yes
- b. No
- c. Don’t know / Refused

15b. If YES, where did you see or hear this slogan – “Arizona is our home. Love it. Don’t Trash it.”? (DO NOT READ LIST - MULTIPLE SELECTIONS ALLOWED)

- a. social media
- b. television
- c. online
- d. newspapers and magazines
- e. radio
- f. direct mail
- g. email
- h. outdoor (billboards, buses, etc.)
- i. other: Specify:
- j. Don’t know



NEW 16C. IF “a. Social media” in Q13b, 15b, or 16b ASK: What social media platforms are you most likely to be using when you see the slogans and information about not trashing Arizona?

SELECT ALL THAT APPLY

- a. Facebook
- b. Twitter
- c. Instagram
- d. Other: Specify:

17. Where are you likely to see or hear advertisements that catches your attention the most?
(DO NOT READ LIST - MULTIPLE SELECTIONS ALLOWED)

- a. social media
- b. television
- c. online
- d. newspapers and magazines
- e. radio
- f. direct mail
- g. email
- h. outdoor (billboards, buses, etc.)
- i. other: Specify
- j. Don't know/don't look at advertisements

Demographics

Now I have a few final questions that are for classification purposes only.

18. Thinking about your personal language use including in home and away from home, would you say you speak...? (READ LIST; ALLOW ONLY ONE RESPONSE)

- a. English Only
- b. Only Spanish
- c. Mostly Spanish, but also some English
- d. Equally in Spanish and English
- e. Mostly English, but also some Spanish
- f. English plus some other language
- g. Don't know/refused

Thank you very much – those are all my questions