

# **2026 Survey of Texans on Pedestrian and Bicycle Safety: Identifying Barriers to Understanding Pedestrian and Bicycle Safety Laws**

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# Introduction

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The objective of this survey is to measure and track pedestrian and bicycle safety in Texas. This is the sixth year that this survey has been conducted; a similar survey has been conducted since 2021. The survey provides a snapshot of the pedestrian and bicycle safety issues in Texas, and knowledge of laws. This report summarizes the findings of the 2026 survey. Additionally, comparisons to the previous years of the survey show how the issues are changing from year to year.

This survey was conducted as part of the grant-funded project Identifying Barriers to Understanding Pedestrian and Bicycle Safety Laws funded by the Texas Department of Transportation (TxDOT). The survey's goals were to learn more about pedestrian and bicyclist behavior and knowledge, and to help identify barriers to the public's understanding of laws related to pedestrian and bicycle safety.

## Methods

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### Survey Development

This survey was based on the survey conducted in 2025 with the addition of some new questions and response options and with the approval of TxDOT. The survey was submitted for review by the Texas A&M University Institutional Review Board and was given an exempt determination.

Appendix A includes a copy of the survey. The survey included questions about frequency of walking and biking, behaviors associated with pedestrian and bike laws/safety, preferences for educational materials, and knowledge of state pedestrian and bicycle laws. The survey was designed to take about 10 minutes to complete.

### Survey Distribution

The project team used Marketing Systems Group (MSG) to distribute the survey using an online panel. The survey was conducted using Qualtrics software and distributed to the panel. Anyone who was a current resident of Texas and at least 18 years of age was eligible to participate in the survey.

## Survey Analysis

A total of 507 individuals in Texas completed the online survey. To improve the validity of the results, the survey was weighted to provide a statewide representative dataset. Appendix B provides the survey weighting methodology, conducted by MSG.

Descriptive analysis (e.g., counts and percentages) of the survey data was conducted for each question. Results from the 2026 survey, including the knowledge assessment, were compared to previous years of the survey to look at changes over time.

## Summary of Key Changes Year to Year

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### Pedestrian Questions

The pedestrian survey questions showed the following changes year to year:

- **12.8 percentage point** increase in those reporting walking at least once per week.
- Walking for transportation continues to increase, up over **8 percentage points** since 2021.
- Crossing at a location other than a crosswalk or intersection increased to **33.2 percent** of respondents in 2026.
- Following pedestrian signals increased to **84.4 percent** of respondents, the highest of all survey years.
- In terms of obstacles to walking more often, a lack of sidewalks moved up to 2<sup>nd</sup> place and driver behavior moved up to 3<sup>rd</sup> place.

### Bicycle Questions

The bicycle survey questions showed the following changes year to year:

- Biking once per week was reported by **30.5 percent** of respondents in 2026, an increase of **5.6 percentage points** from 2025.
- The percentage of respondents reporting never biking was the lowest percentage of the survey so far at **41.7 percent**.

- Biking for transportation continued to increase to nearly **30 percent** of respondents in 2026.
- The percentage of respondents in 2026 that reported riding against traffic in the road very often or always continued to decline to **24.3 percent** in 2026 from the 2024 high of **29.3 percent**.
- Reported use of a bike light, reflective clothing at night and a helmet all increased in 2026 to the highest reported levels since the survey began in 2021.
- Riding on the sidewalk, which was a new question in 2023, increased **20 percentage points** from 2025 to be over half of respondents.
- In terms of obstacles to biking more often, a lack of bike lanes/trails made it to the top of the list, followed by driver behavior. Poor weather fell to third place.

## Driver Questions

The driver survey questions showed the following changes year to year:

- All of the driver behaviors (yielding to pedestrians and bicyclists and ensuring a safe passing distance of a bicyclist) showed their highest reported levels of the six survey waves.
- The largest increase in reported positive driver behavior, at nearly **5 percentage points**, was ensuring a safe passing distance of a bicyclist.

## Enforcement, Laws, and Messaging

The enforcement, laws, and messaging survey questions showed the following changes year to year:

- The most notable change is the lower percentage of those reporting being “not familiar at all” with pedestrian and bicycle laws; falling to **11.8 percent** in 2026 from as high as **19.9 percent** in 2022.
- There was an increase in support for social media and other media campaigns and a decline in support for dynamic messaging signs.

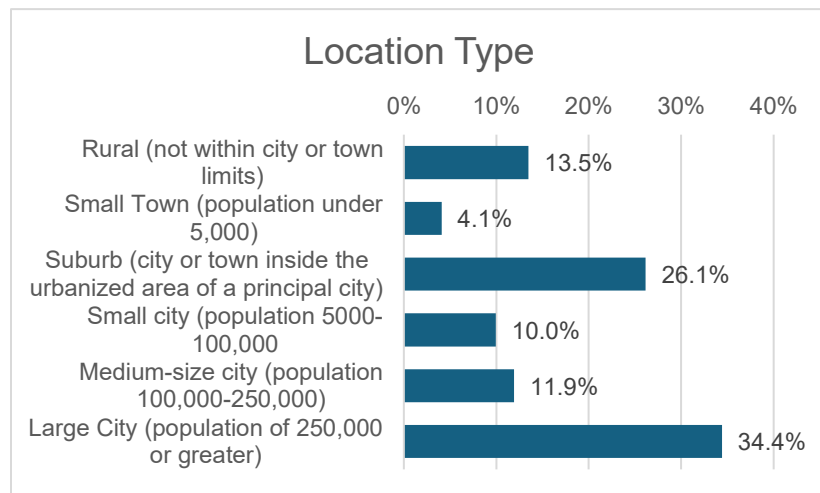
## Knowledge

There was an overall increase in knowledge compared to previous survey waves for the three true/false choice questions. However, correct identification of crosswalks remains low.

## Demographics

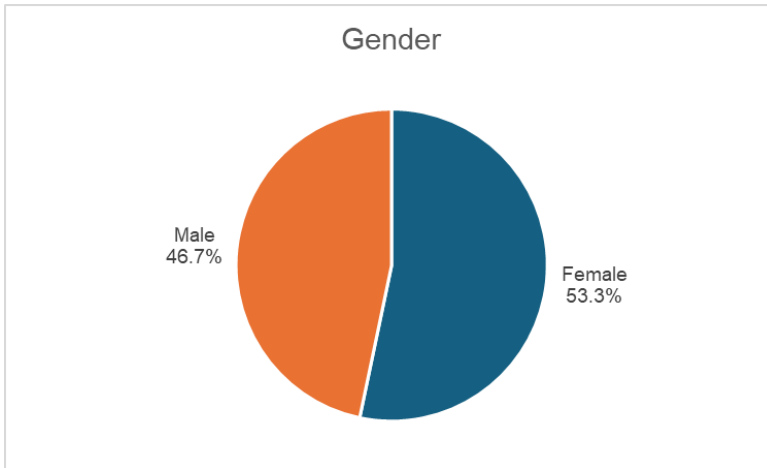
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Respondents were asked to self-identify the type of area in which they live. As Figure 1 shows, respondents came from a variety of location types, with most coming from large cities (**34.4 percent**) and suburban locations (**26.1 percent**).



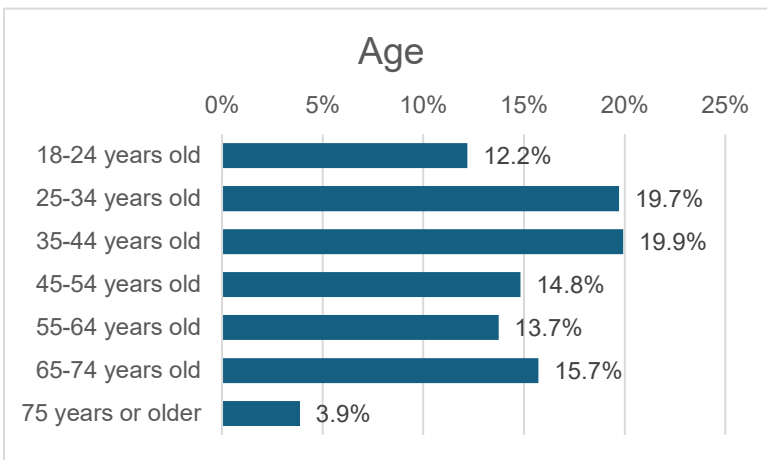
**Figure 1. Location Type.**

As Figure 2 shows, there was a slightly higher percentage of females compared to males among survey respondents; at **53.3 percent** and **46.7 percent** respectively.



**Figure 2. Gender.**

As Figure 3 shows, the respondents' ages spanned a variety of groups. The two age groups with the highest percentage of respondents were 25 to 34 and 35 to 44.



**Figure 3. Age Category.**

The race and ethnicity of respondents shown in Figure 4 represent the diversity of Texas. The highest percentage of respondents were White (**42.1 percent**) and Hispanic or Latino of any race (**36.5 percent**). This was followed by Black or African American (**12.3 percent**) and Asian (**5.6 percent**). The remaining race and ethnicity categories were about one percent or less of respondents.

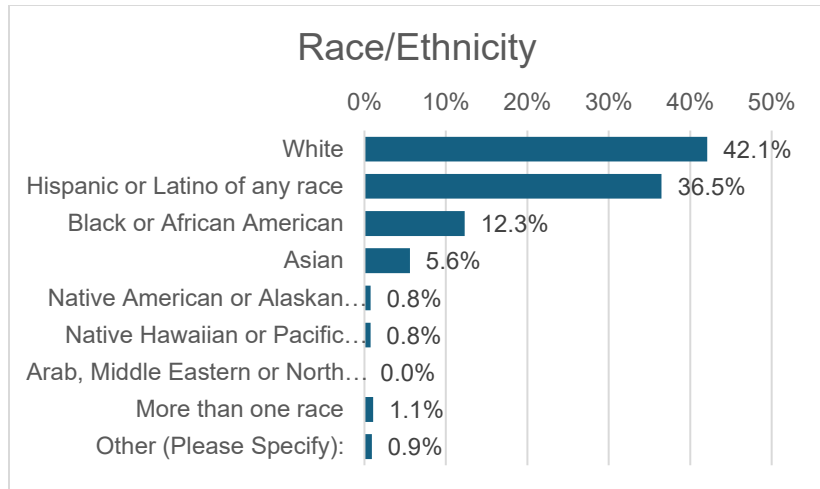


Figure 4. Race and Ethnicity.

Educational attainment was also surveyed. As Figure 5 shows, **48.0 percent** of respondents reported obtaining a college degree (associate, bachelor's, or postgraduate), and another **14.4 percent** reported attending some college or vocational school. Less than **two percent** reported not having a high school diploma.

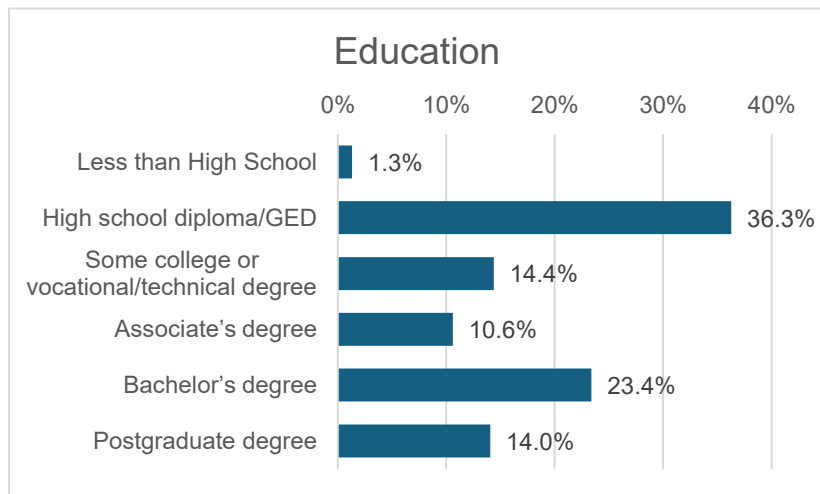


Figure 5. Education Level.

## Pedestrian Questions

### Frequency and Purpose

First, respondents were asked about how frequently they walk on public roads or sidewalks. As Figure 6 shows, nearly a third (**32.4 percent**) of respondents reported walking daily, with **79.6 percent** reporting walking at least once per week. Just **5.4 percent** in

2026 report never walking on public roads or sidewalks. Respondents who said they never walked were not presented with the following two questions regarding the reasons for walking or their walking behavior.

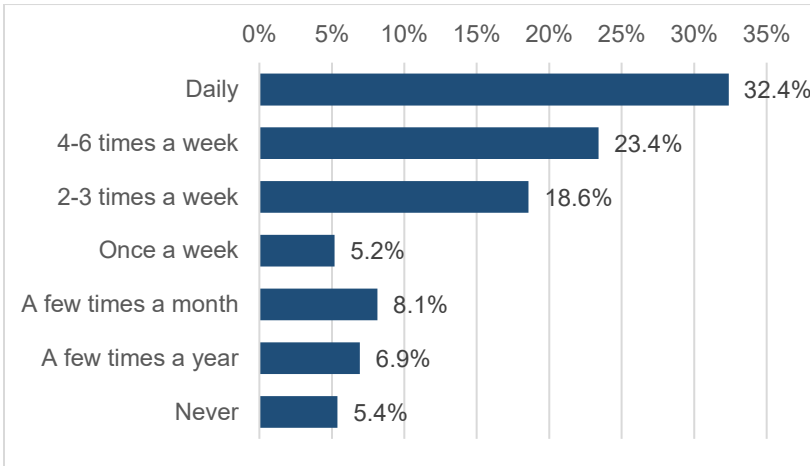


Figure 6. Walking Frequency.

Next, respondents were asked if they walked more often, about the same or less often than a year ago. Close to half (**49.1 percent**) of respondents stated that they walk about the same amount as they did a year before; **38.6 percent** said that they walk more often; and **11.9 percent** said that they walk less often than a year ago, as shown in Figure 7.

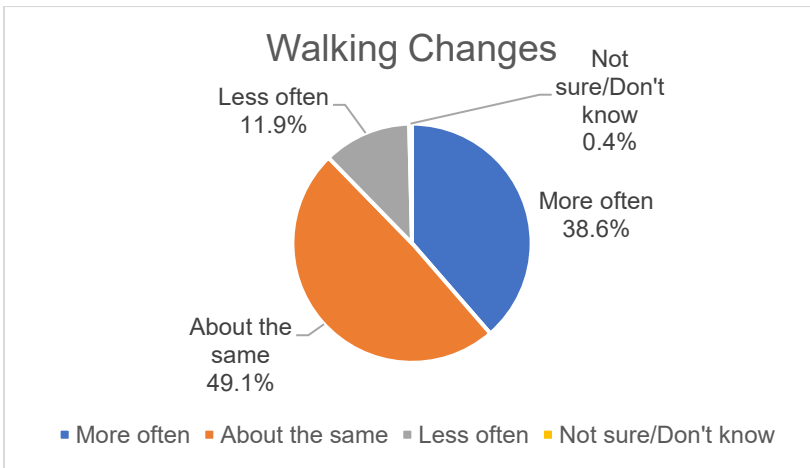
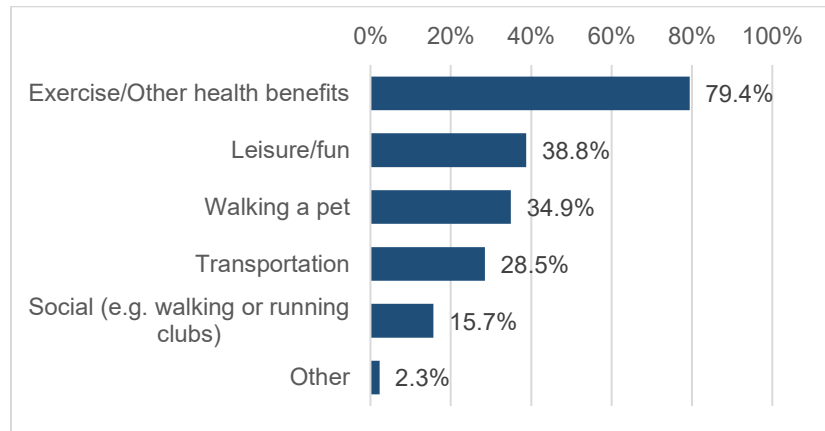


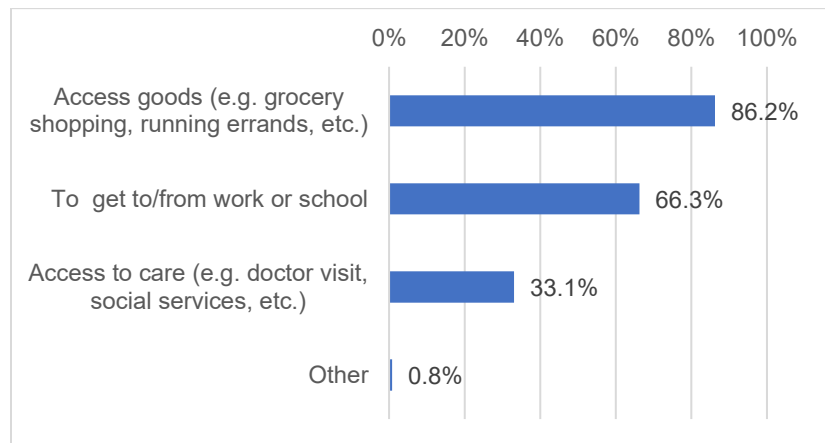
Figure 7. Walking changes from previous year.

Respondents were also asked the reason(s) why they walk. Figure 8 shows the responses, with the vast majority of respondents (**79.4 percent**) reporting walking for exercise or other health benefits. This is followed by over one-third (**38.8 percent**) that report walking for leisure or fun, **34.9 percent** for walking a pet, **28.5 percent** that do so for transportation purposes, and **15.7 percent** that walk for social reasons. The total exceeds 100 percent since respondents could choose all options that applied to them.



**Figure 8. Walking Purpose.**

The survey included a follow-up question for those that responded that they walk for transportation purposes. Respondents were asked for what purpose(s) do they walk for transportation and the responses are shown in Figure 9. Most respondents reported accessing goods (e.g. grocery shopping, running errands, etc.) at **86.2 percent**. Nearly two-thirds (**66.3 percent**) reported walking for transportation to get to or from work or school, and about a third (**33.1 percent**) reported walking for transportation to access care (e.g. doctor visit, social services, etc.).



**Figure 9. Walking for Transportation Purpose.**

# Pedestrian Behavior

Figure 10 shows reported pedestrian behavior, with **33.2 percent** of respondents reporting crossing the road at a location other than a crosswalk or intersection very often or always, with another **30.3 percent** reporting doing so sometimes. However, approximately **46.7 percent** reported doing so rarely or never. When pedestrians cross the road outside a crosswalk or intersection, they are required to yield the right-of-way to vehicles.

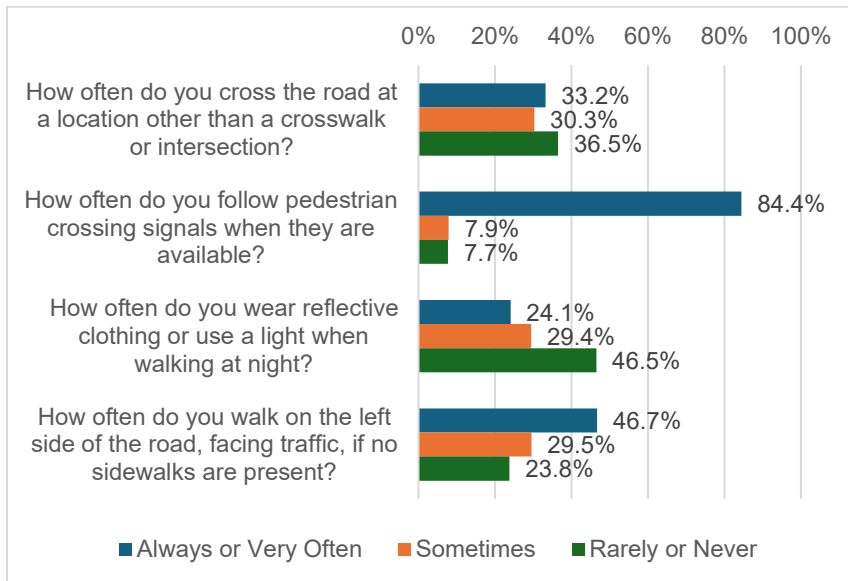


Figure 10. Walking Behavior.

The vast majority of respondents (**84.4 percent**) reported following pedestrian signals very often or always, with only **7.7 percent** reporting doing so rarely or never. At locations with pedestrian signals in use, pedestrian right-of-way is dictated by that signal. Wearing reflective clothing or using a light at night was reported at least some of the time by **53.5 percent** of respondents. Wearing reflective clothing at night is not required but can increase the visibility of pedestrians at night, therefore increasing their safety. Walking on the left side of the road when no sidewalks are available, which is the law in Texas, was reported by **46.7 percent** of respondents very often or always. Around a third of respondents (**33.2 percent**) reported crossing at a location other than a crosswalk or intersection always or very often, which may indicate a need for further public education about safe crossing locations.

# Pedestrian Safety Perception

Respondents were asked how safe they feel when walking. Figure 12 shows responses to this question. Just under a quarter (**23.6 percent**) of participants indicated that they feel “very safe” and around half (**49.6 percent**) said they feel “somewhat safe” when walking. Another **13.0 percent** feel “neither safe nor unsafe,” and **11.5 percent** said that they feel “somewhat unsafe” or “very unsafe.”

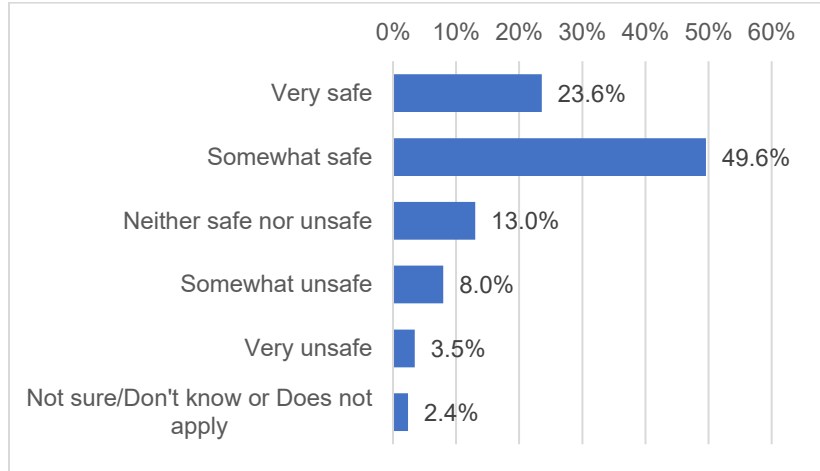


Figure 11. Perceived safety while walking.

# Obstacles for Pedestrians

Respondents were asked about the obstacles that keep them from walking more often, and Table 1 shows the results. The biggest obstacle to walking most often reported was bad weather, which includes rain, snow, cold, and heat, at **50.5 percent** of respondents. This was followed by **41.4 percent** of respondents that reported lack of sidewalks as an obstacle to walking more. Other obstacles reported by 30 percent or more of respondents were driver behavior, lack of convenience, and time to get to destination.

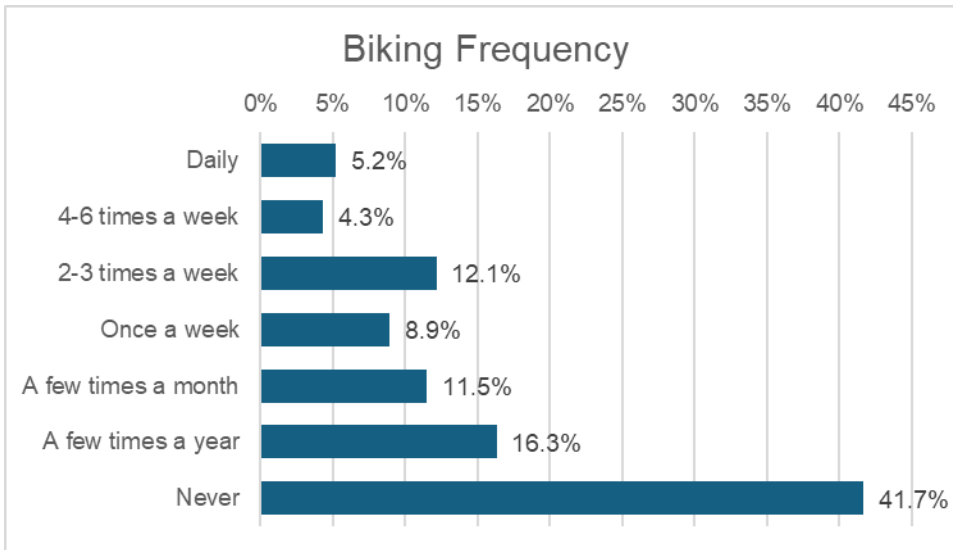
**Table 1. Pedestrian Obstacles.**

Time to get to destination	34.7%
Lack of convenience	35.1%
Bad weather	50.5%
Lack of sidewalks	41.4%
Lack of crossing signals/signs	17.2%
Poor lighting	21.4%
Hard to navigate with a disability	3.0%
Poor roadway/sidewalk conditions	25.1%
Driver behavior	38.9%
Other sidewalk users	6.3%
Other (please specify)	0.8%

## Bicycle Questions

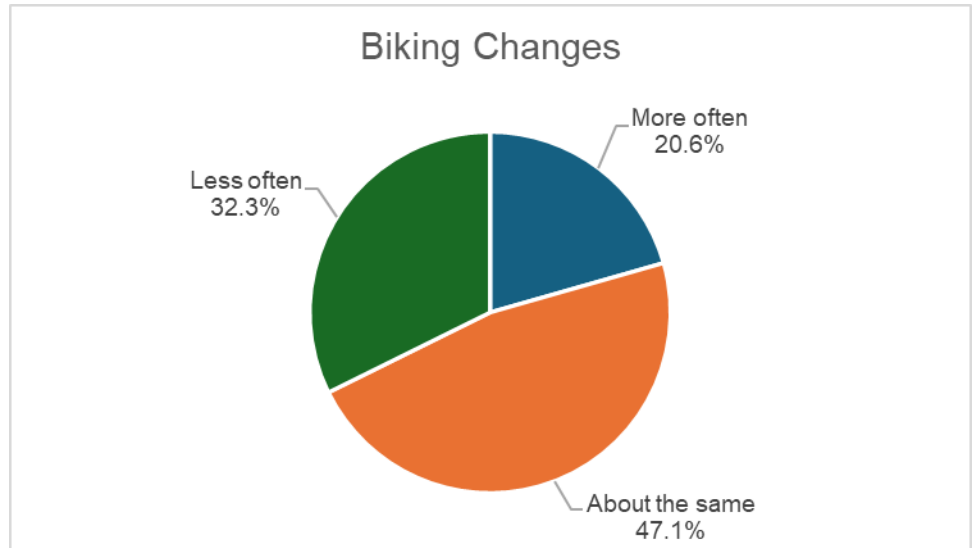
### Frequency and Purpose

Figure 12 shows the reported frequency of biking among respondents. Almost one third (**30.5 percent**) of respondents reported biking at least once per week, with an additional **11.5 percent** reporting doing so a few times a month. Less than half (**41.7 percent**) reported not biking. Any respondents who reported they never ride a bike were not presented with the next two questions regarding their reason for biking or their biking behavior.



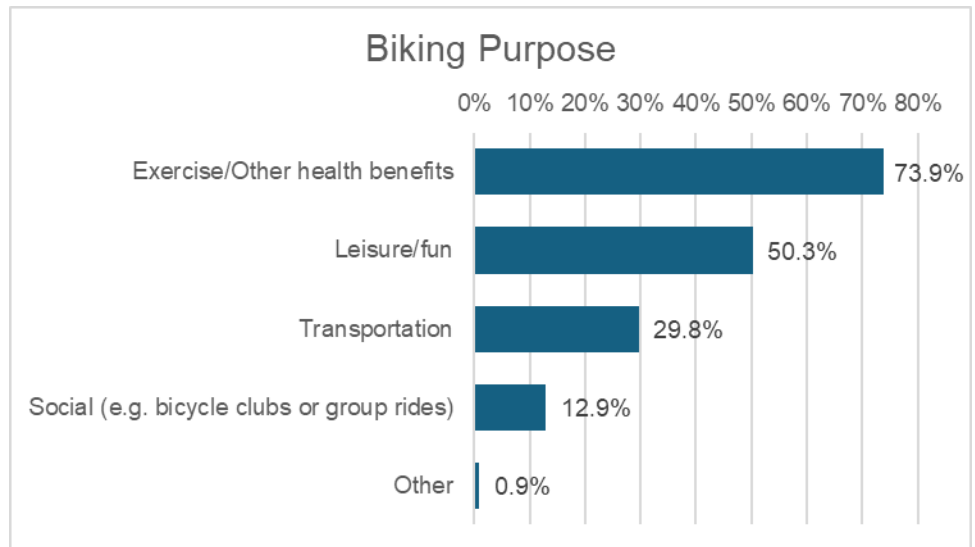
**Figure 12. Biking Frequency.**

Figure 13 shows the changes in the reported biking frequency over the past year. One fifth (**20.6 percent**) of the respondents indicated that they bicycled more often than a year ago. Less than half (**47.1 percent**) said that they biked about the same amount as last year and about a third (**32.3 percent**) said that they biked less often than last year.



**Figure 13. Changes in the Frequency of Biking from Last Year.**

Figure 14 shows respondents reported biking mainly for exercise/other health benefits (**73.9 percent**) and leisure/fun (**50.3 percent**). Biking for transportation was reported by **29.8 percent**, and biking for social reasons was reported by **12.9 percent** of respondents. The total exceeds 100 percent since respondents could choose all options that applied to them.



**Figure 14. Biking Purpose.**

A follow-up question for those that responded that they bike for transportation purposes were asked for what purpose(s) do they bike for transportation. The responses are shown in Figure 15. Most respondents reported either to access goods like grocery shopping, running errands, etc. (**76.7 percent**) or to get to or from school (**64.3 percent**). Over one third (**37.6 percent**) reported doing so to access care.

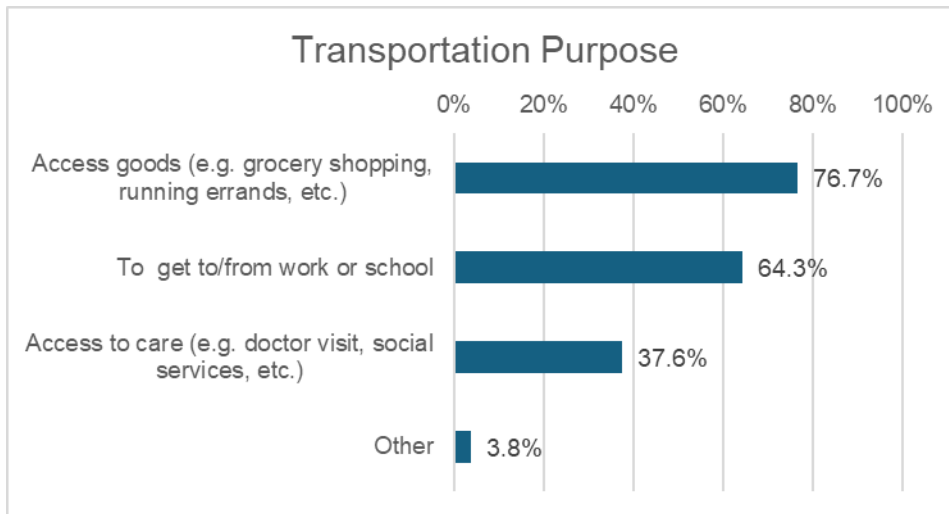


Figure 15. Biking for Transportation Reason.

## Bicyclist Behavior

Respondents were asked about their bicycling behavior over the last year (see Figure 16). Riding against traffic in the road very often or always was reported by **24.3 percent** of respondents, with **28.2 percent** reporting doing so sometimes and **20.3 percent** rarely. According to Texas laws, bicyclists should follow the same laws as motor vehicle drivers and therefore should ride in the same direction as traffic. Use of a bike light at night was reported very often or always by **61.4 percent** of respondents. Over one tenth (**11.5 percent**) reported never doing so. Use of a white bike light on the front and a red light or red reflector in the rear is required by state law. Over one third (**39.9 percent**) of respondents reported wearing reflective clothing while biking very often or always. Frequent helmet use (very often or always) was reported by **47.0 percent** of respondents, with another **16.1 percent** reporting helmet use sometimes and **36.9 percent** reporting infrequent helmet use (rarely or never). Bike helmets and reflective clothing are recommended for safety but are not required by Texas law.

The survey included a question regarding biking on the sidewalk. Over three-quarters (**81.7 percent**) of respondents reported riding their bicycle on the sidewalk at least some of the time, with **5.9 percent** saying they never and **58.1 percent** saying they always or

very often ride on the sidewalk. While there is no state law prohibiting the use of bikes on the sidewalk, a local jurisdiction may have such prohibitions on some or all sidewalks.

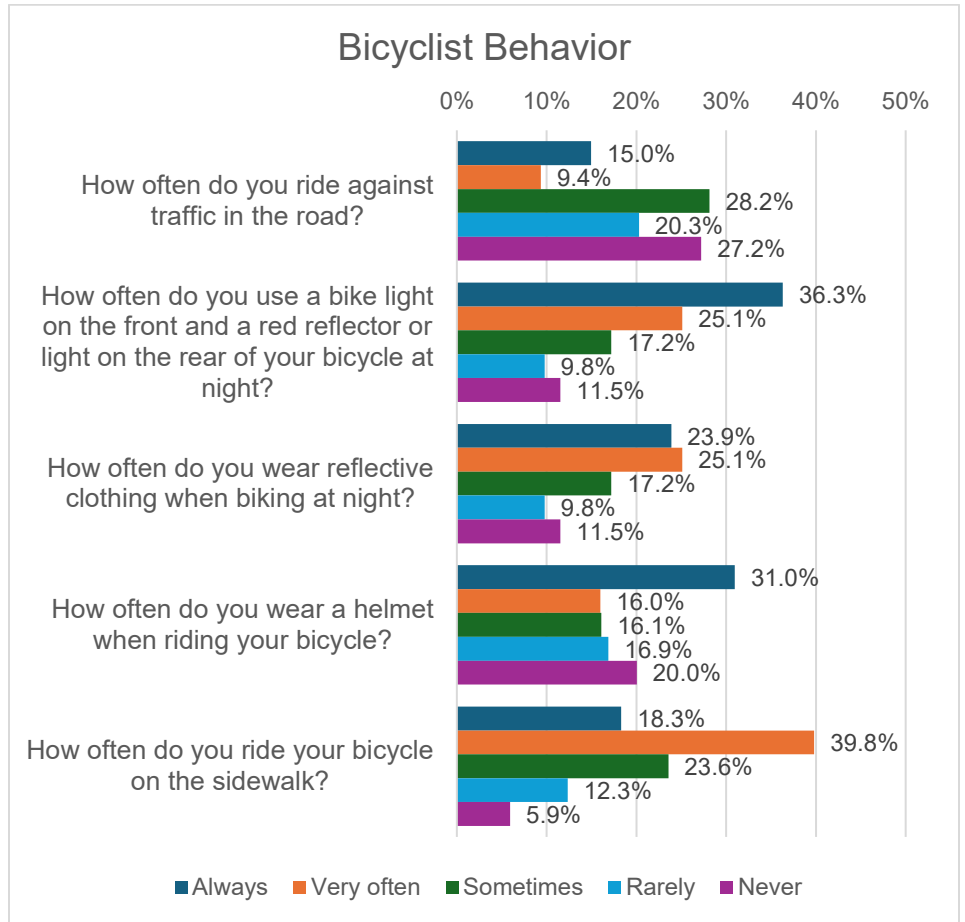


Figure 16. Biking Behavior.

## Bicycle Safety Perception

A question was added this year about the perception of safety when biking. Over two-thirds (**69.8 percent**) of the respondents said that they feel very safe or somewhat safe from traffic in the places where they have biked over the past year. Under one-fifth (**16.9 percent**) reported feeling somewhat unsafe or very unsafe from traffic in these places. See Figure 17.

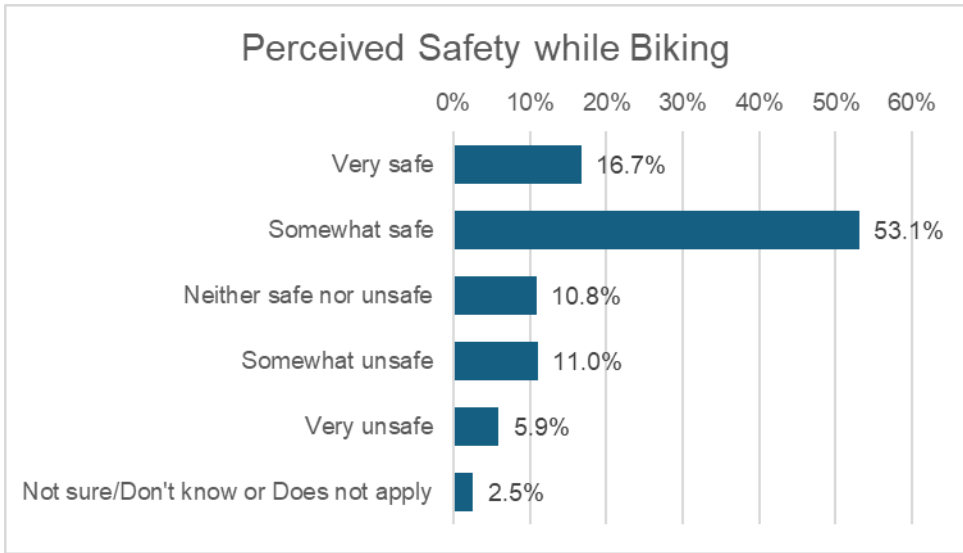


Figure 17. Perceived Safety While Biking.

## Bicyclist Obstacles

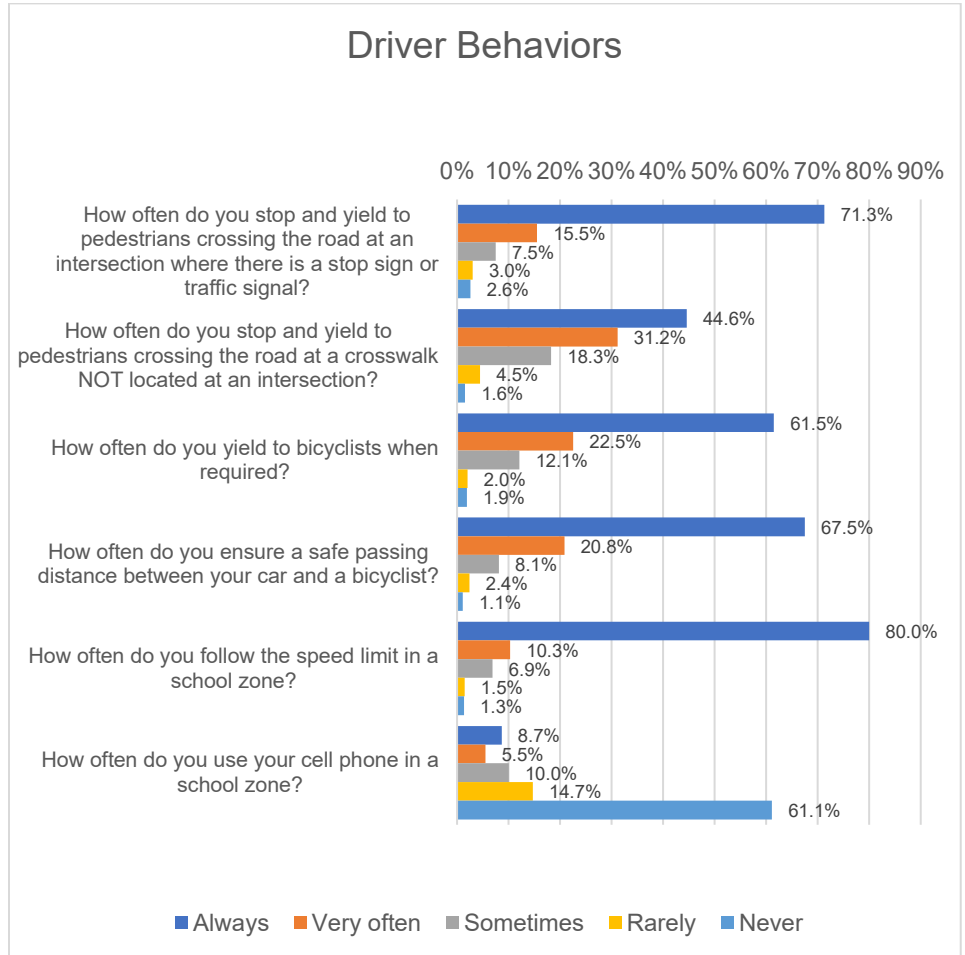
Respondents were asked about obstacles to biking more often. As Table 2 shows, a lack of bike lanes and trails was the top obstacle to biking more often for respondents. This was followed by driver behavior, bad weather and lack of convenience. Other obstacles included poor roadway or sidewalk conditions and time to get to destination.

Table 2. Bicyclist Obstacles.

Obstacle	%
Time to get to destination	18.1%
Lack of convenience	20.9%
Bad weather	29.4%
Lack of bike lanes/trails	37.8%
Lack of crossing signals/signs	15.9%
Poor lighting	14.8%
Poor roadway/sidewalk conditions	18.9%
Driver behavior	31.0%
Other sidewalk users	10.3%
Other	5.6%

# Driver Questions

Respondents were asked six questions about their driving behavior around pedestrians and bicyclists. Figure 18 shows the results. The first two questions asked how often drivers stop and yield to pedestrians. Stopping and yielding to pedestrians at an intersection with a stop sign or traffic signal was reported by **71.3 percent** of drivers, always and **15.5 percent** reported very often.



**Figure 18. Driver Behavior Results**

Stopping and yielding to pedestrians at a crosswalk not at an intersection (or mid-block) was reported less often, with **44.6 percent** reporting doing so always.

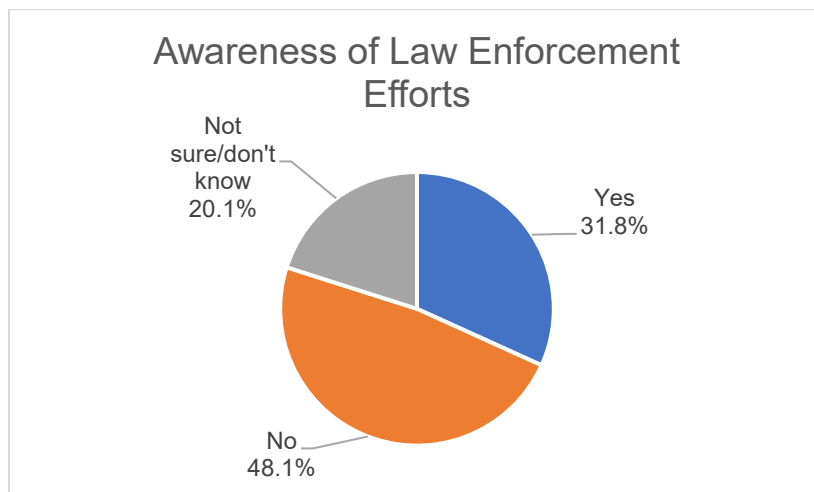
Respondents were also asked about their yielding to bicyclists when required with **61.5 percent** reporting they always do, and **22.5 percent** reporting doing so very often. Ensuring a safe passing distance between their car and a bicyclist was reported by **88.3 percent** of respondents very often or always.

Two new questions this year asked about driver behavior in a school zone. **Eighty percent** of respondents report that they always follow the speed limit in a school zone, and **61.1 percent** of respondents report never use their cell phone in a school zone.

## Enforcement

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Respondents were asked if they were aware of any traffic enforcement efforts by police (i.e. issuing warnings or citations) in their area regarding pedestrian and bicycle safety in the past year. As Figure 19 shows, about one-third (**31.8 percent**) of respondents reported an awareness of any such efforts.



**Figure 19. Traffic Enforcement Efforts.**

Respondents that answered yes were then asked to describe their experiences, which is summarized here. Based on the open-ended responses from the Texas survey regarding law enforcement efforts related to pedestrian and bicycle safety, several key themes emerged:

Sentiment towards traffic enforcement is mixed but generally leans positive, with many respondents acknowledging the value of police presence in improving safety. A large portion of participants either reported no direct interaction with enforcement or only limited awareness of it. There is recurring perception that visible enforcement – especially in school zones, crosswalks, and high-traffic areas – helps encourage safer behavior. However, respondents frequently noted that enforcement can feel inconsistent, situational, or temporary, rather than sustained.

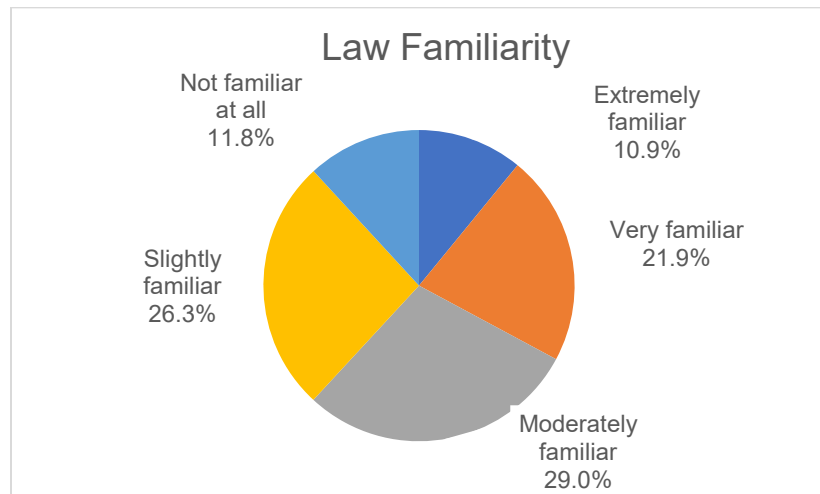
There were also mixed or negative sentiments. Negative sentiments center on inconsistency, perceived unfairness, and gaps in enforcement focus. Some respondents described

experiences with citations for mid-block crossing or minor infractions that felt excessive or unfair, particularly when compared to drivers' behavior going unchecked. A small number of responses also referenced limited enforcement in rural areas, and expressed distrust or frustration with law enforcement, including concerns about selective enforcement.

## Laws and Messaging

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As Figure 20 shows, just over half (**61.8 percent**) of respondents reported at least a moderate familiarity with pedestrian and bicycle safety laws, and another **26.3 percent** reported being slightly familiar with these laws. No familiarity was reported by **11.8 percent** of respondents.



**Figure 20. Familiarity with Laws.**

Roadway signs were the most commonly selected method of education by respondents (see Figure 21) for educating Texans on bike and pedestrian safety laws, with **73.5 percent** choosing this option. Driver education curriculum was also popular, with **47.8 percent** of respondents choosing this method, followed by social media at **40.2 percent**. Public service announcements, dynamic messaging signs, education in elementary and middle school, and media campaigns were less popular.

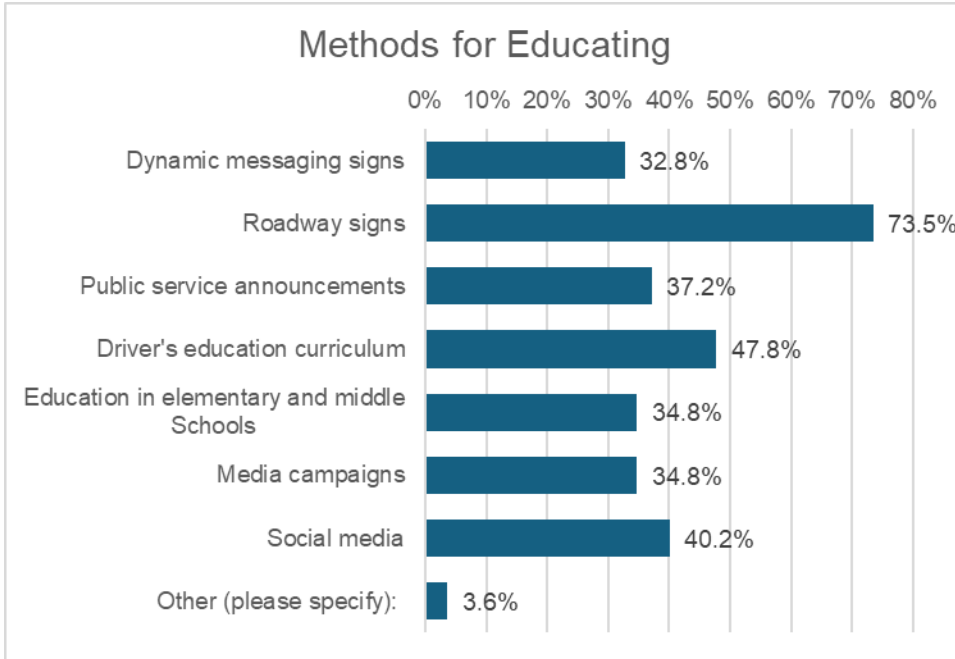
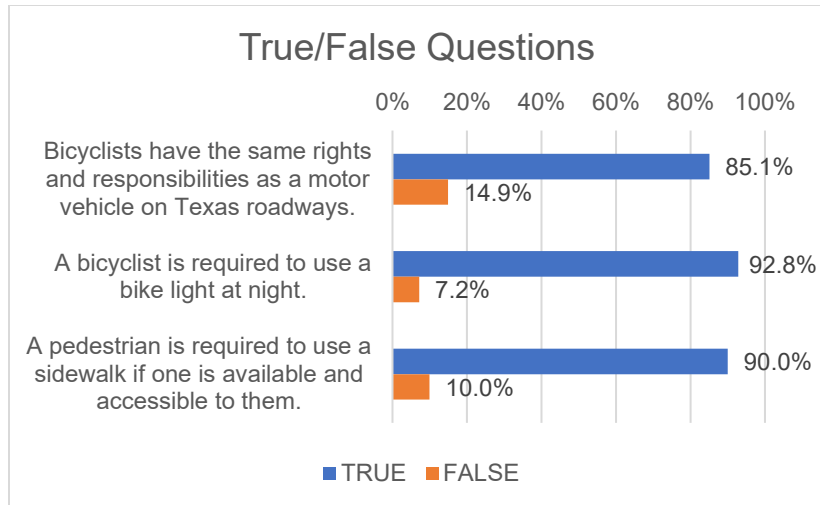


Figure 21. Messaging Preferences.

## Knowledge of Laws

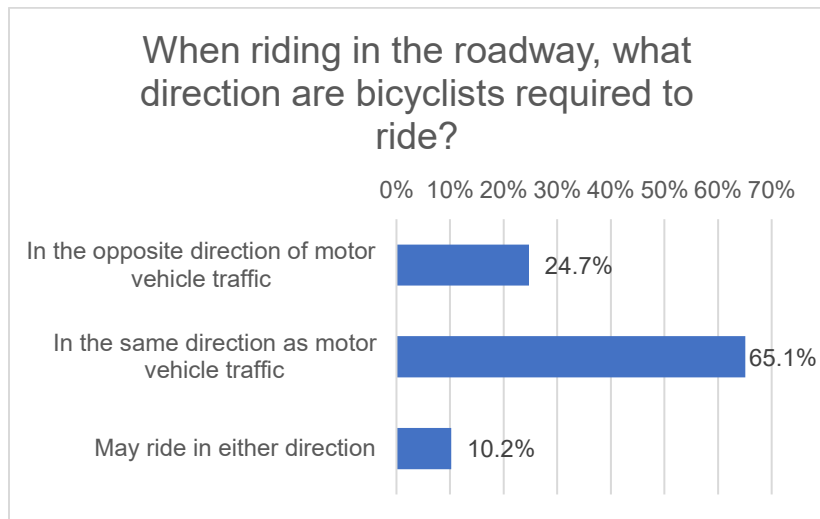
The final section of the survey was the knowledge assessment. Respondents were asked to answer seven questions regarding pedestrian and bicycle safety laws. All the questions were either true/false or multiple choice. The first three questions and the crosswalk identification questions are the same or essentially similar to questions from FY2025, however, there are three new questions being asked this year.

Figure 22 shows the results of the true/false questions. All of the questions are true according to Texas law. Just over **85 percent** of respondents correctly said that bicyclists have the same rights and responsibilities as a motor vehicle driver and over **90 percent** correctly reported that a bicyclist is required to use a bike light at night and that a pedestrian must use a sidewalk if one is available to them.



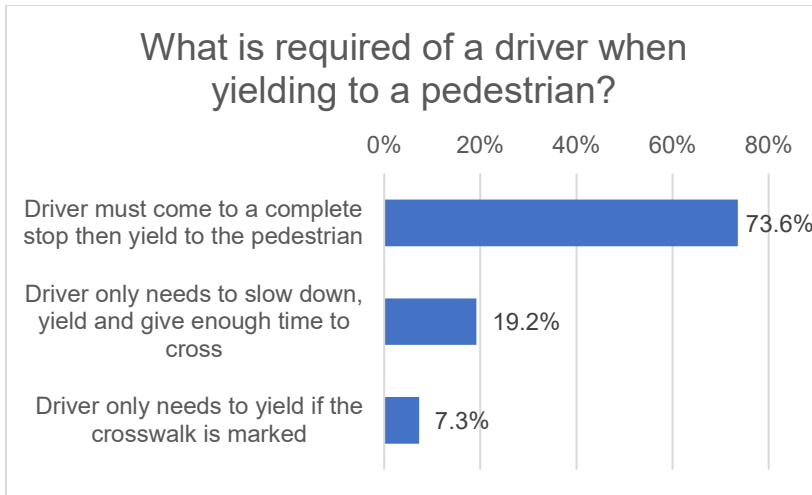
**Figure 22. True/False Question Responses.**

As Figure 23 shows, the majority of respondents (65.1 percent) correctly said that a bicyclist is required to ride in the same direction as motor vehicle traffic when riding in the roadway. However, just under one-quarter (24.7 percent) incorrectly said that bicyclists are required to ride in the opposite direction of motor vehicle traffic.



**Figure 23. Direction a Bicyclist Should Ride.**

The majority of respondents (73.6 percent) also correctly said that a driver must come to a complete stop when yielding to a pedestrian, as seen in Figure 24.



**Figure 24. Requirements When Yielding.**

The next question was a matrix listing five different right-of-way scenarios for pedestrians and motorists and respondents were asked to select which road user had the right-of-way and Table 3 shows the results. The correct answers are bolded and highlighted in green. The majority of respondents did answer these questions correctly, but the percentages did vary from as high as **88.4 percent** correct to just **59.1 percent** answering correctly. The scenario with the lowest percent correct was a pedestrian crossing outside of an intersection or crosswalk, where they would be required to yield to motor vehicles.

**Table 3. Right-of-Way Scenarios.**

Situation	Pedestrian has right-of-way	Motorist has right-of-way
Pedestrian crossing at non-signalized, 4-way intersection	<b>74.8%</b>	25.2%
Pedestrian crossing at signalized intersection facing "WALK" signal	<b>88.4%</b>	11.6%
Pedestrian crossing outside of an intersection or crosswalk	40.9%	<b>59.1%</b>
Pedestrian crossing at a crosswalk not located at an intersection (mid-block crossing)	<b>68.6%</b>	31.4%
Pedestrian crossing at a signalized intersection on solid "DON'T WALK" signal	26.5%	<b>73.5%</b>

The final question on the assessment asked respondents to select the images that contained crosswalks. Figure 25 shows the images that were displayed to respondents. Figure 26 shows the percentage of respondents that selected each image. The vast majority of respondents (**90.4 percent**) correctly identified image D, the mid-block crossing, as a crosswalk. However, the images of marked crosswalks at intersections, images A and B, were only correctly identified by **58.2 percent** and **52.3 percent** of respondents, respectively. Only **6.0 percent** of respondents correctly identified image C as containing a crosswalk. Image C has what is known as unmarked crosswalks at an intersection where the connections of sidewalks on opposite sides of the road form a crosswalk, even if they are not marked with lines. These unmarked crosswalks are located at all four-way intersections where there are sidewalks. Just **3.1 percent** of respondents in the survey correctly identified all images as containing a crosswalk.

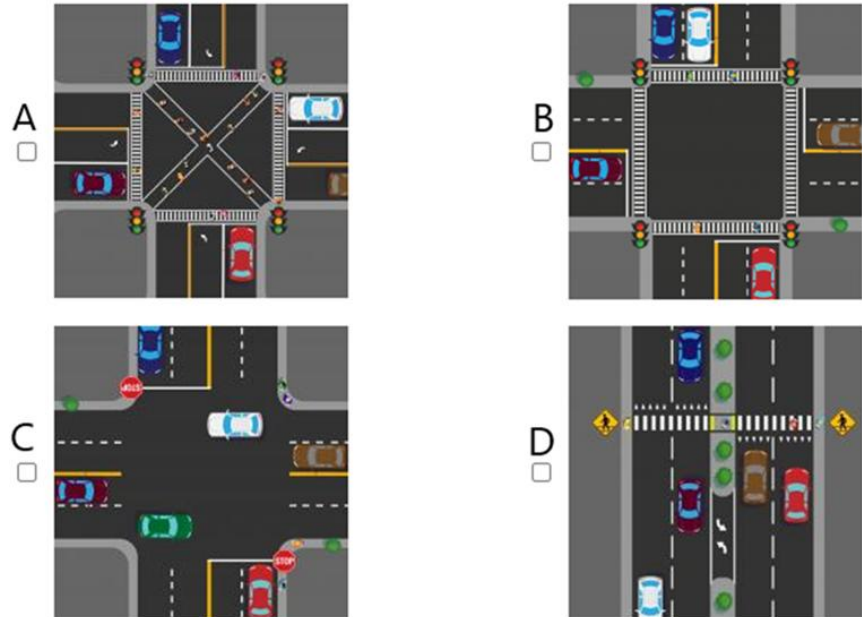


Figure 25. Crosswalk Images.

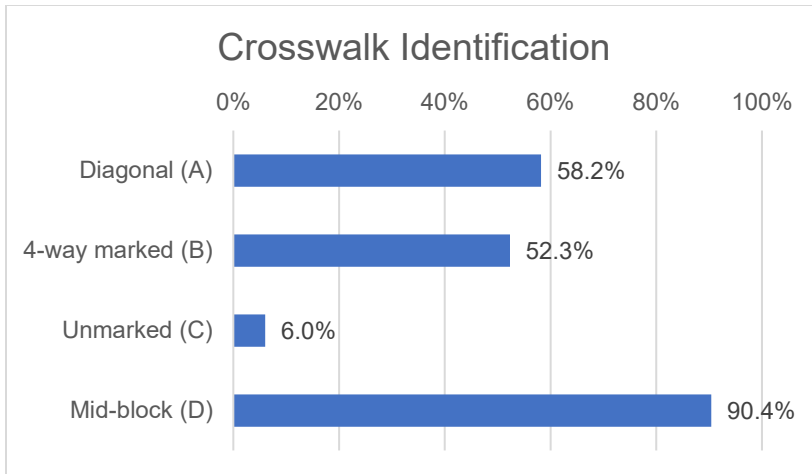


Figure 26. Identification of Crosswalks.

## Open Ended Question

The final question of the survey was open ended asking “**What issues regarding pedestrian and bicycle safety are concerning to you?**” For pedestrians, respondents frequently expressed concern about **unsafe crossings and driver behavior at crosswalks, including vehicles failing to yield, speeding in pedestrian-heavy areas, and general inattention.** Many noted the need for more or improved crosswalks, clearer signage, and better lighting, particularly at night or in high-traffic corridors. Safety in school zones and areas with children was a common theme, with concerns about inconsistent compliance with speed limits. In some cases, respondents also mentioned fear of being ticketed for jaywalking, which suggests tension between safety enforcement and pedestrian behavior, especially where infrastructure may not support convenient or safe crossings.

For bicyclists, a **major concern centers on lack of dedicated infrastructure,** including insufficient or poorly maintained bike lanes and limited separation from vehicle traffic. Respondents also pointed out visibility and safety equipment issues, such as the need for lights, reflectors, and helmets, particularly when riding at night. Some highlighted **confusion or lack of awareness about cycling rules, both among cyclists and drivers,** which can lead to unsafe interactions. Additionally, there were concerns about inconsistent enforcement of rules for cyclists, such as riding in the correct direction or staying within designated lanes.

The most prominent concerns, however, relate to **interactions with drivers and the broader challenge of sharing the road.** Respondents consistently identified speeding, distracted driving, and failure to yield as significant risks for both pedestrians and cyclists. Many noted that drivers do not always respect bike lanes

or pedestrian right-of-way, and that unsafe behaviors—such as blocking bike lanes or passing too closely—often go unchecked. There were also comments about inconsistent enforcement, with some areas seeing visible police presence while others lack coverage, and rural areas in particular relying more on driver courtesy than enforcement.

## Year-to-Year Comparisons

In this section, comparisons to the same survey conducted in 2021–2025 are included to provide a picture of how pedestrian and bicycle safety and knowledge have evolved over the past six years.

### Pedestrian Questions

In 2026, walking at least once per week was reported by **79.5 percent** of respondents, a **12.8 percentage point** increase from 2025. As Figure 27 shows, this is the highest reported level since 2021 and brings the level of reported walking close to 2024 levels.

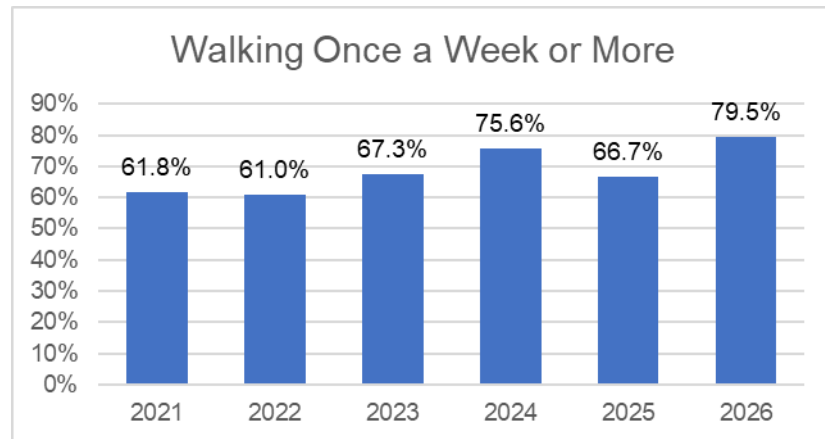


Figure 27. Walking at Least Once per Week, by Year.

The reasons for walking were largely the same over the six years of the survey, with exercise/other health benefits being the main reason for walking. One area of change is the increase in reported walking for transportation purposes. As Figure 28 shows, reported walking for transportation in 2026 at **28.5 percent** was the highest since the survey began.

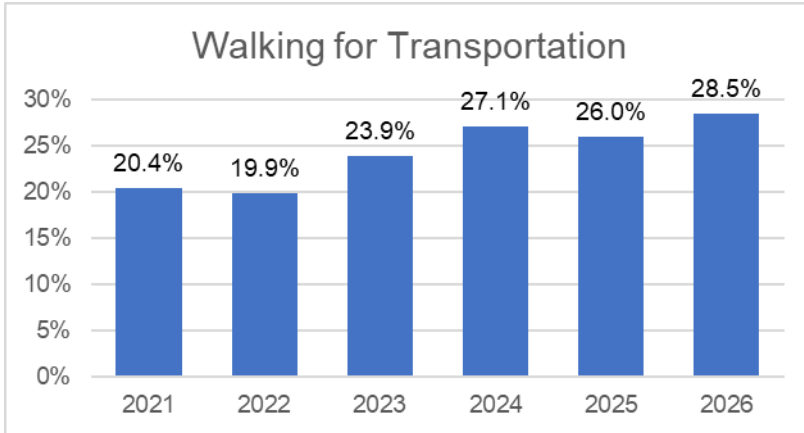


Figure 28. Walking for transportation, by Year.

Reported pedestrian behavior showed some noteworthy changes in 2026. Figure 29 shows the percent of respondents in each year that reported engaging in each behavior very often or always. On the positive side, reported following of crossing signals very often or always increased to its highest reported level of the past six years to **84.4 percent**. Also, walking on the left side of the road when there are no sidewalks increased in 2026. On the negative side, reported crossing of the road outside an intersection or crosswalk increased to its highest level since the survey began. Use of reflective clothing or a light at night was very similar to previous years.

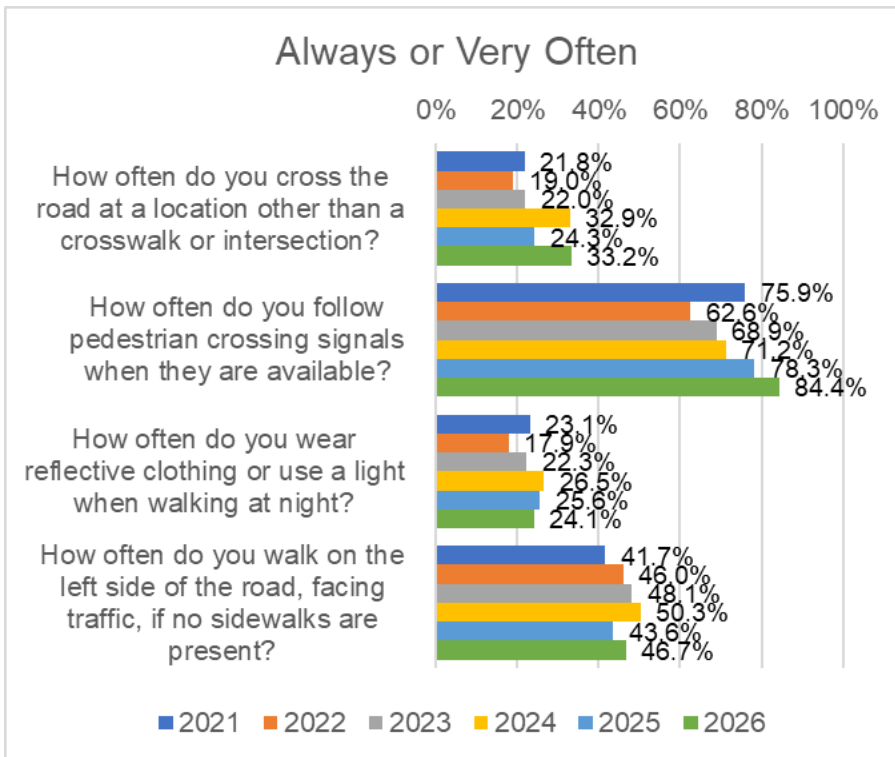


Figure 29. Pedestrian Behavior (Very Often or Always), by Year.

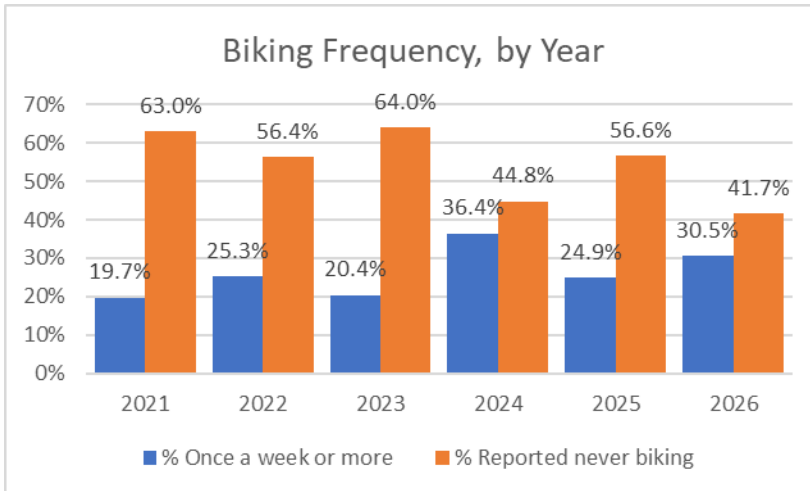
The top obstacles to people walking more often in 2026 were also compared to previous years. As Table 4 shows, the top obstacle reported by pedestrians across all years continues to be poor weather, such as rain, snow, heat and cold. A lack of sidewalks moved up to the number two obstacles, followed by driver behavior.

**Table 4. Pedestrian Obstacles, by Year.**

2021	Poor weather	Driver behavior	Time to get to destination	Poor lighting	Poor roadway/sidewalk conditions
2022	Poor weather	Driver behavior	Poor lighting	Lack of sidewalks	Time to get to destination
2023	Poor weather	Driver behavior	Poor roadway/sidewalk conditions	Lack of sidewalks	Lack of crossing signals/signs
2024	Poor weather	Driver behavior	Poor roadway/sidewalk conditions	Lack of convenience	Lack of sidewalks
2025	Poor weather	Lack of convenience	Lack of sidewalks	Time to get to destination	Driver behavior
2026	Poor weather	Lack of sidewalks	Driver behavior	Lack of convenience	Time to get to destination

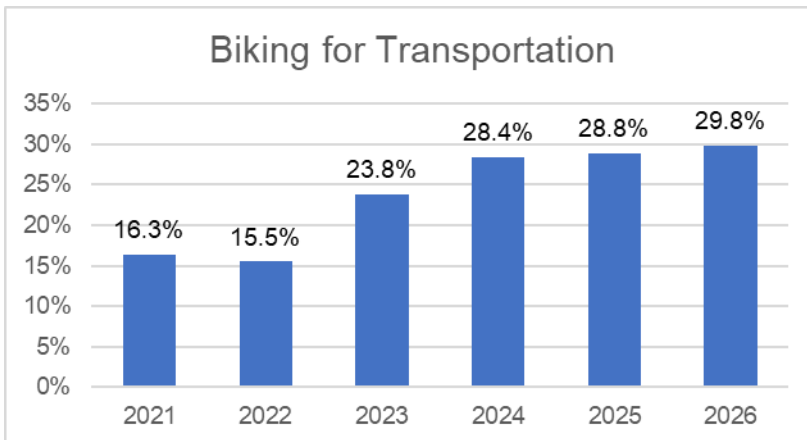
## Bicycle Questions

In the 2026 survey, approximately thirty percent of respondents reported biking once a week or more (see Figure 30). This is a 5.6 percentage point increase from 2025. At the same time, the percentage of respondents that reported never biking fell by nearly 15 percentage points, marking the lowest percent of never biking since the survey began in 2021.



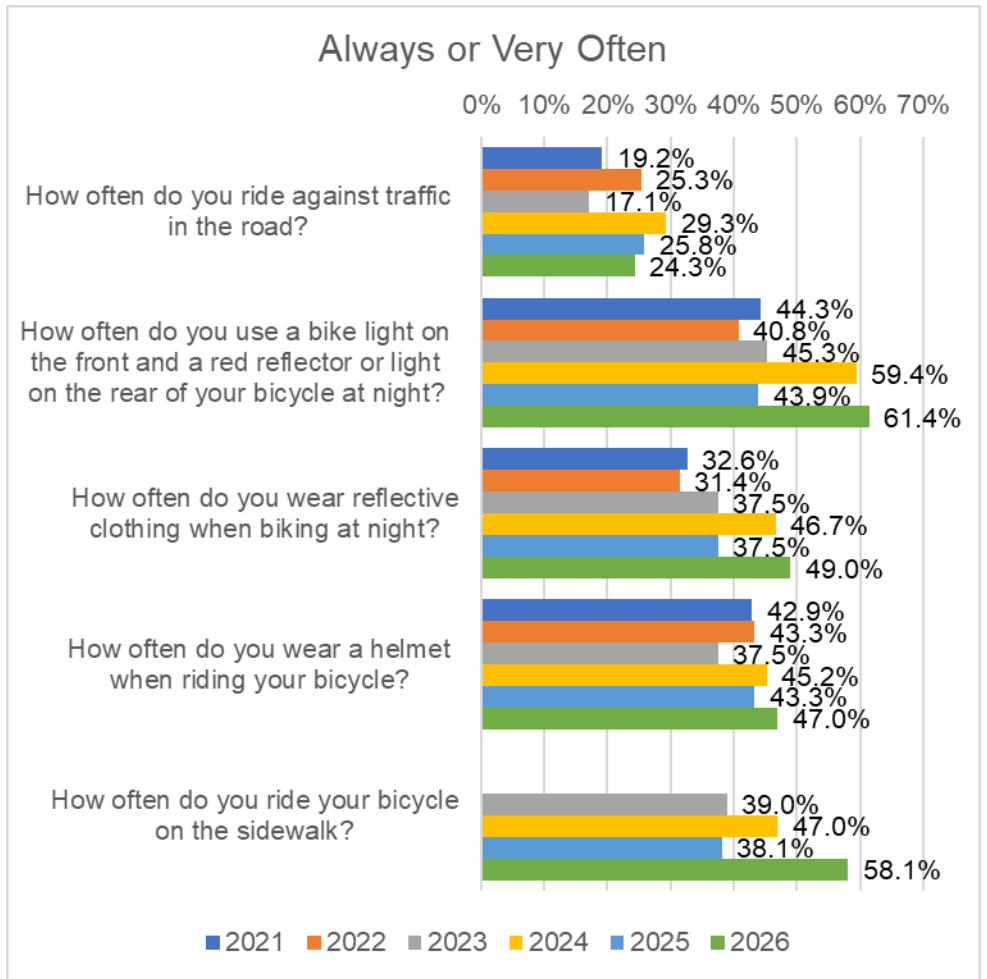
**Figure 30. Biking Frequency, by Year.**

The top reason for biking across all years was exercise or other health benefits; however, there has been an increase since 2022 in the percentage of respondents reporting biking for transportation reasons, as shown in Figure 31.



**Figure 31. Biking for Transportation, by Year.**

As Figure 32 shows, the percentage of respondents in 2026 that reported riding against traffic in the road very often or always continued to decline from the 2024 high. Reported use of a bike light, reflective clothing at night and a helmet all increased in 2026 to the highest reported levels since the survey began in 2021. Riding on the sidewalk, which was a new question in 2023, increased 20 percentage points from 2025 to be over half of respondents.



**Figure 32. Bicyclist Behavior (Very Often or Always), by Year.**

Table 5Error! Not a valid bookmark self-reference. shows the top five obstacles that respondents cited as an obstacle to biking more often over the past five years. Poor weather had consistently been the first or second cited obstacle to biking more often, however, that fell to third place in 2026. A lack of bikes lanes/trails has also consistently been ranked in the top three obstacles across all five years and moved up to number one in 2026. Similarly, driver behavior has consistently been among the top five obstacles and moved up to number two in 2026. A lack of convenience has been an obstacle for the past three years. Poor roadway/sidewalk conditions rounded out the top five in 2026 and has been in the top five for five of the last six years.

Table 5. Bicyclist Obstacles, by Year.

2021	Poor weather	Driver behavior	Lack of bike lanes/trails	Poor roadway/sidewalk conditions	Time to get to destination
2022	Poor weather	Lack of bike lanes/trails	Driver behavior	Poor roadway/sidewalk conditions	Lack of crossing signals or signs
2023	Lack of bike lanes/trails	Poor weather	Driver behavior	Poor roadway/sidewalk conditions	Lack of crossing signals or signs
2024	Poor weather	Lack of convenience	Lack of bike lanes/trails	Driver behavior	Poor lighting
2025	Poor weather	Lack of bike lanes/trails	Driver behavior	Lack of convenience	Poor roadway/sidewalk conditions
2026	Lack of bike lanes/trails	Driver behavior	Poor weather	Lack of convenience	Poor roadway/sidewalk conditions

## Driver Questions

Figure 33 shows the driver behaviors around pedestrians and bicyclists reported by respondents very often or always. All of the driver behaviors showed their highest reported levels over the six survey waves, reported driver yielding at intersections very often or always was **86.8 percent** but only **75.7 percent** at crosswalks at non-intersections (or mid-block).

Ensuring a safe passing distance between their car and a bicyclist was reported by **88.3 percent** of respondents very often or always, an increase of **4.9 percentage points** from 2025. Yielding to bicyclists when required, which was a new question in 2023, remained high at **84.0 percent**.

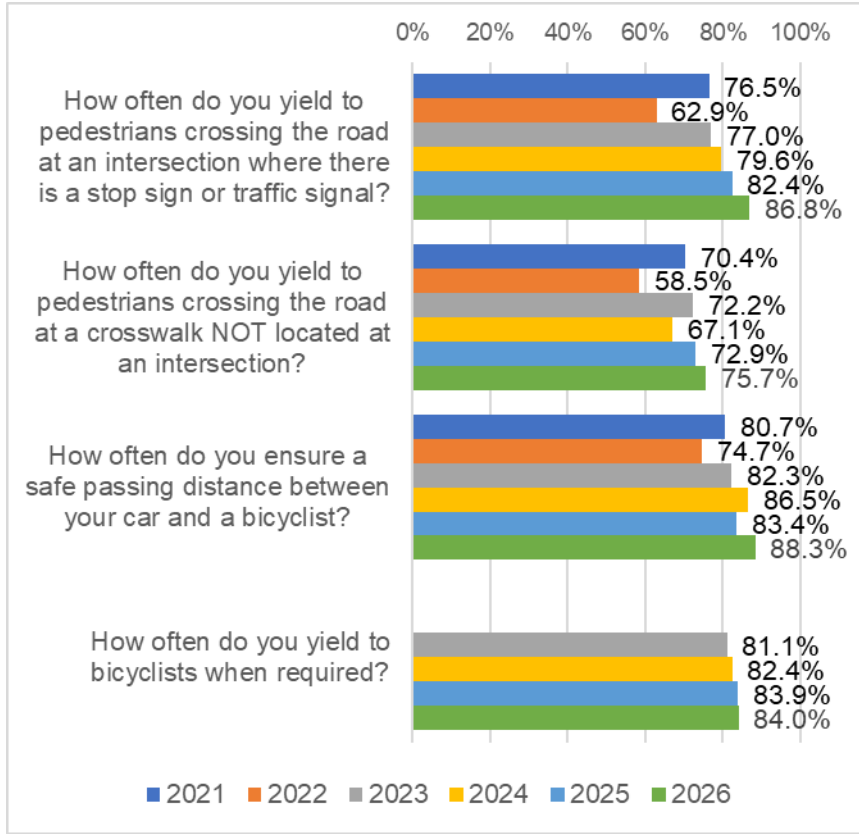


Figure 33. Driver Behavior (Very often or Always), by Year.

## Enforcement

Figure 34 shows the percentage of respondents reporting seeing or hearing about enforcement efforts by law enforcement regarding pedestrian and bicycle safety. In 2026, slightly less than one-third (**31.8 percent**) of respondents reported hearing about enforcement efforts.

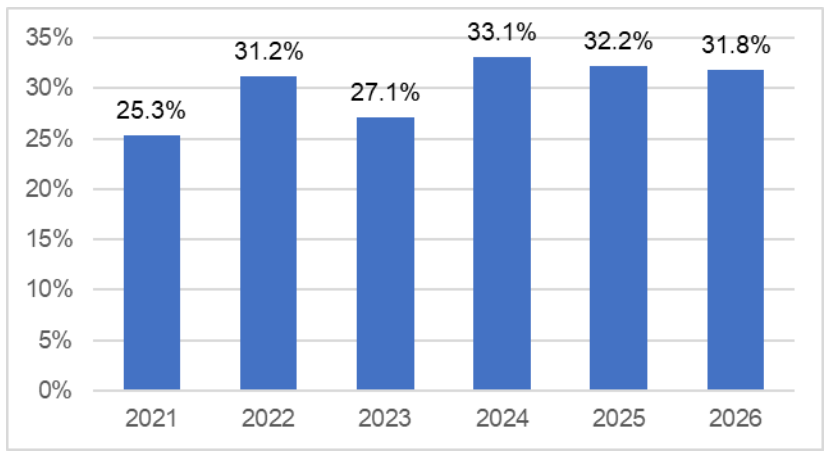


Figure 34. Respondents Reporting Enforcement, by Year.

# Familiarity with Laws

Figure 35 shows the self-reported familiarity with pedestrian and bicycle laws reported by respondents over the six years. Overall, responses have remained similar over the six survey waves. The biggest change has been the lower percentage of those reporting being “not familiar at all” with pedestrian and bicycle laws.

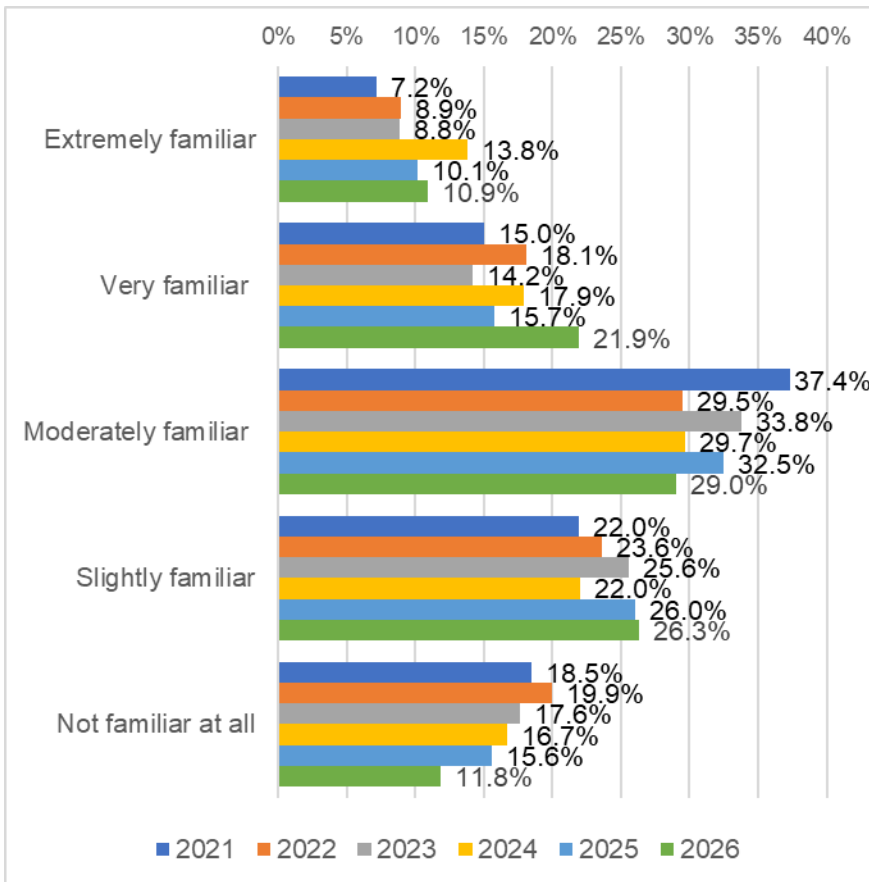


Figure 35. Familiarity with Laws, by Year.

# Methods for Education

As Figure 36 shows, roadway signs are still the most preferred method, followed by driver education curriculum and social media. The main changes for 2026 were an increase in social media preference and media campaigns, and a decrease in support for dynamic messaging signs.

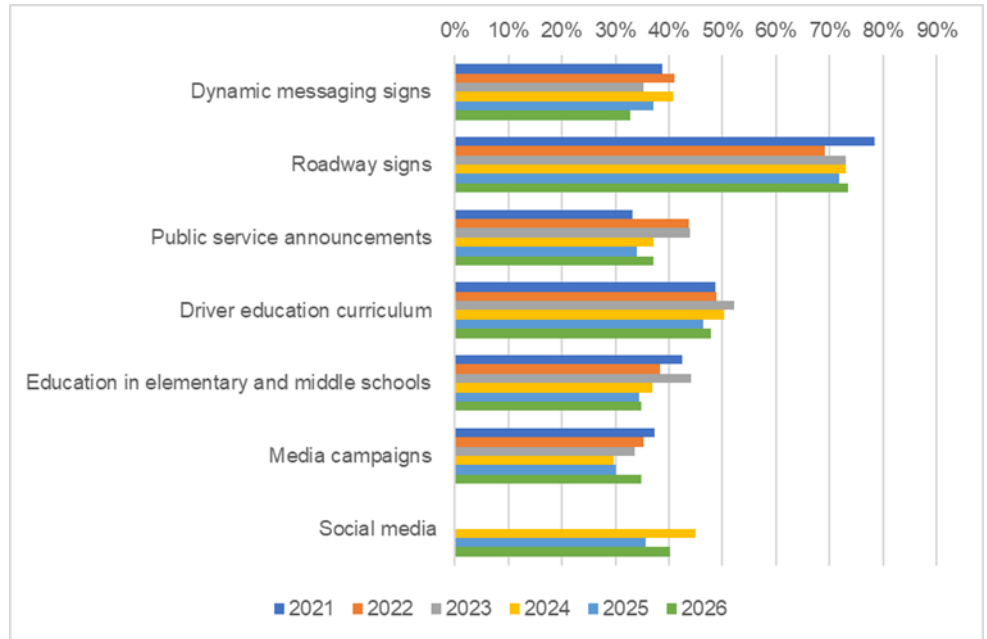


Figure 36. Methods for Messaging, by Year.

## Knowledge Questions

Due to an update in the knowledge questions for the 2026 survey, knowledge comparisons for 2026 were only available for four questions; the true/false questions and the crosswalk identification question. **Error! Reference source not found.** Figure 37 shows the percent correct for the true/false questions. For 2026, the percentage of respondents that responded correctly was higher for all three questions. It should be noted that these questions while not identical to previous years are very similar. Here are the differences in these questions:

1. The first question about bicyclists having the same rights and responsibilities as a motor vehicle was asked in the negative in previous years (i.e. Bicyclists do not have the same rights and responsibilities as a motor vehicle).
2. The second question is essentially the same, with minor differences. In 2025 and before, the question was phrased as “A bicyclist is required to use a light when riding at night.” Whereas the 2026 survey phrased the question as, “A bicyclist is required to use a bike light at night.”
3. The third question is essentially the same, with minor differences. In 2025 and before, the question was phrased as “As a pedestrian, if a sidewalk is available and accessible, they must use it.” Whereas the 2026 survey

phrased the question as, “A pedestrian is required to use a sidewalk if one is available and accessible to them.”

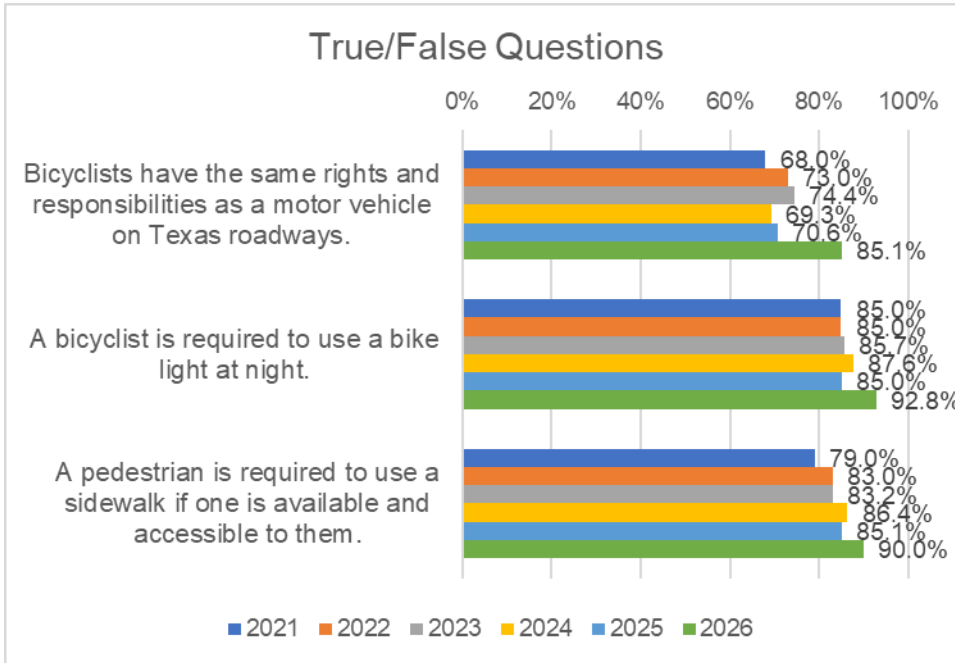


Figure 37. Knowledge of Laws, by Year.

The other survey question that can be compared year to year is the crosswalk identification question. As Figure 38 shows, the percentage of respondents that correctly identified all of the marked crosswalks fell from **42.7 percent** in 2025 to **37.8 percent** in 2026. This is similar to the percentage from the 2024 survey. As in previous years, less than five percent of respondents correctly identified all crosswalks.

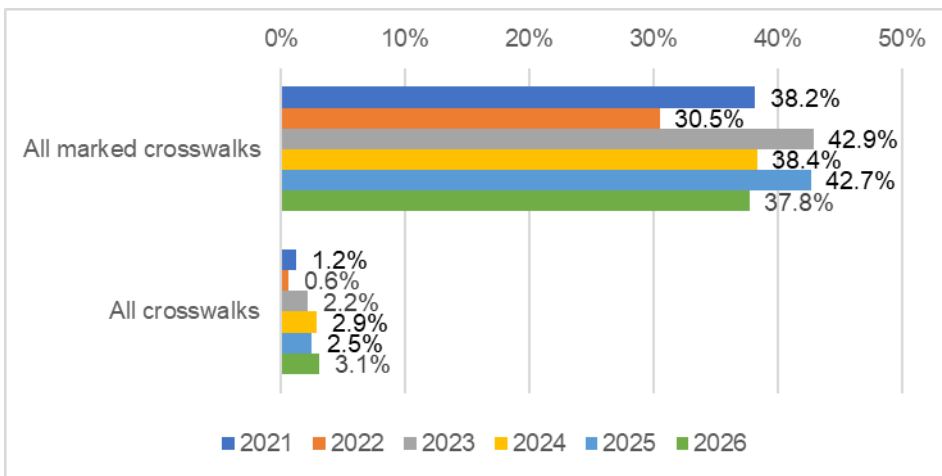


Figure 38. Crosswalk Identification, by Year.



# Appendix A: Pedestrian and Bicycle Safety— 2026 Survey

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Pedestrian and bicyclist fatalities have increased sharply over the past decade. The Texas A&M Transportation Institute is conducting this survey to learn more about what road users know about pedestrian and bicycle safety laws in Texas. This survey is sponsored by the Texas Department of Transportation. If you walk, bike, or drive on roads in Texas, we would like your input! The survey results will be used to design public outreach materials to educate road users about bicycle and pedestrian safety laws.

You must be at least 18 to participate. You can exit the survey at any point. The survey should take no more than 15 minutes to complete. Your information will be kept confidential to the extent allowed by law, and all identifiable information will be kept on a password protected computer accessible only by the research team. This survey has been designed in Qualtrics, and you can click [here](#) to view the Qualtrics confidentiality policy.

If you have any questions about this survey, please contact Neal Johnson at [neal-johnson@tti.tamu.edu](mailto:neal-johnson@tti.tamu.edu). You may also contact the Human Research Protection Program at Texas A&M University at 1-855-795- 8636 or [irb@tamu.edu](mailto:irb@tamu.edu). By continuing with the survey, you agree to participate. If you do not agree to participate, you may close your browser window.

(screening question) Are you 18 years of age or older and a resident of Texas?

- Yes
- No

Q1 What is your zip code?

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Q2 Which best describes the area where you live?

- Rural (not within city or town limits)
- Small Town (population under 5,000)
- Small city (population 5000-100,000)
- Medium-size city (population 100,000-250,000)
- Suburb (city or town inside the urbanized area of a principal city)
- Large City (population of 250,000 or greater)

Q3 Gender:

- Male
- Female

- Prefer not to state

Q4 Select your age category:

- 18 to 24 years old
- 25 to 34 years old
- 35 to 44 years old
- 45 to 54 years old
- 55 to 64 years old
- 65 to 74 years old
- 75 years old or older
- Prefer not to state

Q5 Select your race/ethnicity. Select all that apply.

- Asian
- Hispanic or Latino or Spanish origin of any race
- Black or African American
- White
- Native American or Alaskan Native
- Native Hawaiian or Pacific Islander
- Arab, Middle Eastern or North African
- More than one race
- Other (please specify): \_\_\_\_\_
- Prefer not to state

Q6 What is your highest level of education?

- No high school diploma
- High school diploma/GED
- Some college or vocational/technical degree
- Associate's degree (for example: AA, AS)
- Bachelor's degree (for example: BA, BS)
- Postgraduate degree (MA, MBA, PhD, MD, etc.)
- Prefer not to state

Q7 How many adults (including yourself) live in your household?

- 1 person
- 2 people
- 3 people
- 4 people
- 5 people
- 6 or more people
- Other (please specify) \_\_\_\_\_

Q8 What is your household income?

- \$0 - \$10K
- \$10,000-\$24,999
- \$25,000-\$49,999
- \$50,000-\$74,999
- \$75,000-\$99,000
- \$100,000-\$149,999
- \$150,000-\$199,999
- \$200,000+
- Prefer not to answer

Q9 What is your marital status?

- Married
- Widowed
- Divorced
- Separated
- Never married

Q10 How often do you walk on public roads/sidewalks?

- Daily
- 4-6 times a week
- 2-3 times a week
- Once a week
- A few times a month

- A few times a year
- Never

Q11 Would you say you walk more often, about the same or less often than a year ago?

- More often
- About the same
- Less often
- Don't know/not sure

Q12 What are the primary reasons you walk? Select all that apply.

- Transportation
- Exercise/other health benefits
- Leisure/fun
- Social
- Walking a pet
- Other (please specify) \_\_\_\_\_

Q13 For what purpose(s) do you walk for transportation? (Select all that apply)

- To get to/from work or school
- Access goods (e.g. grocery shopping, running errands, etc.)
- Access to care (e.g. doctor visit, social services, etc.)
- Other (please specify)

Q14 Please answer the following questions about your walking behavior in the past year.

	Never	Rarely	Sometimes	Very Often	Always
How often do you cross the road at a location other than a crosswalk or intersection?					
How often do you follow pedestrian crossing signals when they are available?					
How often do you wear reflective clothing or use a light when walking at night?					
How often do you walk on the left side of the road, facing traffic, if no sidewalks are present?					

Q15 How safe do you feel from traffic in the places where you have walked over the past year?

- Very safe
- Somewhat safe
- Neither safe nor unsafe
- Somewhat unsafe
- Very unsafe

Q16 How often do you ride a bicycle?

- Daily
- 4–6 times a week
- 2–3 times a week
- Once a week
- A few times a month
- A few times a year
- Never

Q17 Would you say you bicycle more often, about the same or less often than a year ago?

- More often
- About the same
- Less often
- Don't know/not sure

Q18 What are the primary reasons you ride a bicycle? Select all that apply.

- Transportation
- Exercise/other health benefits
- Leisure/fun
- Social
- Other (please specify) \_\_\_\_\_

Q19 For what purpose(s) do you ride a bicycle for transportation? (Select all that apply)

- To get to/from work or school
- Access goods (e.g. grocery shopping, running errands, etc.)
- Access to care (e.g. doctor visit, social services, etc.)

- Other (please specify)

Q20 Please answer the following questions about your biking behavior in the past year.

	Never	Rarely	Sometimes	Very Often	Always
How often do you ride against traffic in the road?					
How often do you use a bike light on the front and a red reflector or light on the rear of your bicycle at night?					
How often do you wear reflective clothing when biking at night?					
How often do you wear a helmet when riding your bicycle?					
How often do you ride your bicycle on the sidewalk?					

Q21 How safe do you feel from traffic in the places where you have biked over the past year?

- Very safe
- Somewhat safe
- Neither safe nor unsafe
- Somewhat unsafe
- Very unsafe

Q22 Which of the following are an obstacle to you walking more often than you do now (select all that apply)?

Obstacle
<input type="checkbox"/> Time to get to destination
<input type="checkbox"/> Lack of convenience (e.g., easier to drive)
<input type="checkbox"/> Bad weather (e.g., temperature, rain)
<input type="checkbox"/> Lack of sidewalks
<input type="checkbox"/> Lack of crossing signals/signs
<input type="checkbox"/> Poor lighting (e.g., no lights, lights not working)
<input type="checkbox"/> Hard to navigate with a disability (e.g., blind, wheelchair)
<input type="checkbox"/> Poor roadway/sidewalk conditions (e.g., potholes)
<input type="checkbox"/> Driver behavior
<input type="checkbox"/> Other sidewalk users
<input type="checkbox"/> Other (please specify)

Q23 Which of the following are an obstacle to you biking more often than you do now (select all that apply)?

Obstacle
<input type="checkbox"/> Time to get to destination
<input type="checkbox"/> Lack of convenience (e.g., easier to drive)
<input type="checkbox"/> Bad weather (e.g., temperature, rain)
<input type="checkbox"/> Lack of bike lanes/trails
<input type="checkbox"/> Lack of crossing signals/signs
<input type="checkbox"/> Poor lighting (e.g., no lights, lights not working)
<input type="checkbox"/> Poor roadway/sidewalk conditions (e.g., potholes)
<input type="checkbox"/> Driver behavior
<input type="checkbox"/> Other sidewalk users
<input type="checkbox"/> Other (please specify)

Q24 Please answer the following questions about your driving behavior near pedestrians and bicyclists in the past year.

	Never	Rarely	Sometimes	Very Often	Always	NA (e.g., I Do Not Drive)
How often do you yield to pedestrians crossing the road at an intersection where there is a stop sign or traffic signal?						
How often do you yield to pedestrians crossing the road at a crosswalk NOT located at an intersection?						
How often do you yield to bicyclists when required?						
How often do you ensure a safe passing distance between your car and a bicyclist?						
How often do you follow the speed limit in a school zone?						
How often do you use your cell phone in a school zone?						

Q25 Are you aware of any traffic enforcement efforts by police (i.e., issuing warnings or citations) in your area regarding pedestrian or bicycle safety in the past year?

- Yes
- No

Q26 If yes, please describe your experiences with traffic enforcement efforts regarding walking and biking safety.

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Q27 How familiar are you with bike and pedestrian safety laws in Texas?

- Extremely familiar
- Very familiar
- Moderately familiar
- Slightly familiar
- Not familiar at all

Q28 What methods would you recommend for educating Texans on bike and pedestrian safety laws in Texas? Select all that apply.

- Dynamic messaging signs
- Roadway signs
- Public service announcements
- Driver education curriculum
- Education in elementary and middle schools
- Media campaigns
- Social media
- Other (please specify): \_\_\_\_\_

**This section focuses on your knowledge of pedestrian and bicycle safety laws.**

Q29 Select if the following statements are true or false according to Texas law.

	True	False
Bicyclists have the same rights and duties as a motor vehicle on Texas roadways.		
A bicyclist is required to use a bike light at night.		
A pedestrian is required to use a sidewalk if one is available and accessible to them.		

Q30 When riding in the roadway, what direction are bicyclists required to ride? (Select one)

- In the opposite direction of motor vehicle traffic
- In the same direction as motor vehicle traffic
- May ride in either direction

Q31 What is required of a driver when yielding to a pedestrian? (Select one)

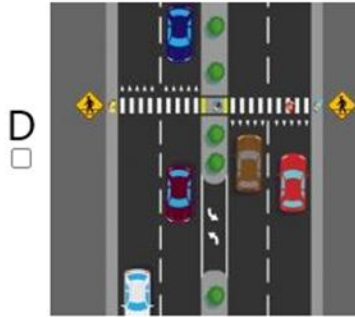
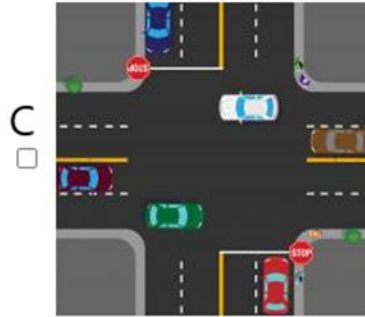
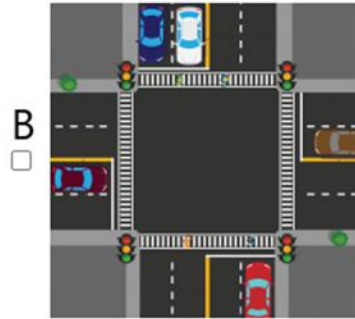
- Driver must come to a complete stop then yield to the pedestrian
- Driver only needs to slow down, yield and give enough time to cross
- Driver only needs to yield if the crosswalk is marked

Q32 Please select which road user has right-of-way in the following situations:

	Pedestrian has right-of-way	Motorist has right-of-way
Pedestrian crossing at non-signalized, 4-way intersection	<input type="radio"/>	<input type="radio"/>
Pedestrian crossing at signalized intersection facing "WALK" signal	<input type="radio"/>	<input type="radio"/>
Pedestrian crossing outside of an intersection or crosswalk	<input type="radio"/>	<input type="radio"/>
Pedestrian crossing at a crosswalk not located at an intersection (mid-block crossing)	<input type="radio"/>	<input type="radio"/>
Pedestrian crossing at a signalized intersection on solid "DON'T WALK" signal	<input type="radio"/>	<input type="radio"/>

Q33 Which of these pictures contains a crosswalk? Select all that apply.

- Image A: Diagonal crossing
- Image B: Marked crosswalk at intersection
- Image C: Unmarked crosswalk
- Image D: Mid-block crossing



Please [click here](#) for the correct answers to the knowledge questions to see how you did. And then come back to finalize your survey.

Q34 What issues regarding pedestrian and bicycle safety are concerning to you? (Open ended)

# Appendix B: Weighting Methodology Report— Texas Pedestrian Survey 2026

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## **Sampling Design Overview:**

This survey has secured a total of 507 adult respondents residing in Texas, using online panels for sample selection and survey administration. The following table shows the distribution of survey respondents by location type of their residences.

**Table 1.** Distribution of respondents by location type.

<b>Location Type</b>	<b>Respondents</b>	
Rural	76	15.0%
Small Town	25	4.9%
Small City	78	15.4%
Medium City	44	8.7%
Suburb	136	26.8%
Large City	148	29.2%
<b>Total</b>	<b>507</b>	<b>100.0%</b>

## **Weighting Methodology:**

All survey data must be weighted before they can be used to produce unbiased estimates of population parameters. By improving the geodemographic representation of respondents, weighting reduces bias and enhances the external validity of survey estimates. The weighting process for this survey included the following major steps:

1. When computing weights for survey respondents, it is necessary for all variables used in the weighting process to be free from missing values. Given that the demographic variables for this survey included missing values, a hot-deck imputation procedure was used to replace missing values with appropriate donors. For this purpose, the survey imputation procedure in SAS<sup>1</sup> was used for selection of eligible donors within homogeneous cells.
2. The demographic composition of respondents was calibrated to the corresponding distributions of the target population for whom the needed benchmarks were obtained from the latest Current Population Survey (CPS) 2025. For this purpose, the *WgtAdjust* procedure of SUDAAN<sup>2</sup> was used to balance these distributions against multiple benchmarks simultaneously (tables 2 to 7). This procedure relies on a constrained logistic regression to predict the likelihood of response vis-à-vis the population benchmarks. The resulting

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<sup>1</sup> <https://support.sas.com/resources/papers/proceedings16/SAS3520-2016.pdf>

<sup>2</sup> RTI International (2012). *SUDAAN Language Manual, Release 11.0*. RTI International. [www.rti.org/sudaan](http://www.rti.org/sudaan)

likelihood probabilities are then used to create adjustment weights that align respondents to their specified benchmark distributions.

- The resulting weights were examined to identify and ameliorate extreme values. Trimming extreme weights is a standard practice that is used to improve the efficiency of the weighting process and add stability to survey estimates. This important gain in precision, however, is achieved at the expense of introducing some minor diversions between weighted totals and their corresponding population benchmarks. In order to accommodate different analyses, the trimmed weights were then rescaled to produce the following two sets of weights:

➤ **WGT\_P**: analysis weights aggregating to the total population of adults in Texas (23,475,704)

➤ **WGT\_R**: analysis weights aggregating to the number of respondents (507)

**Table 2.** Population and respondent distributions by gender and age

Age	Males				Females			
	Population		Respondents		Population		Respondents	
18-24	1,487,762	12.9%	12	5.4%	1,589,865	13.3%	37	13.1%
25-34	2,195,304	19.1%	41	18.3%	2,201,556	18.4%	41	14.5%
35-44	2,134,799	18.6%	63	28.1%	2,169,339	18.1%	54	19.1%
45-54	1,891,117	16.4%	50	22.3%	1,857,222	15.5%	71	25.1%
55-64	1,693,800	14.7%	28	12.5%	1,735,786	14.5%	47	16.6%
65+	2,095,558	18.2%	30	13.4%	2,423,595	20.2%	33	11.7%
<b>Total</b>	<b>11,498,340</b>	<b>100.0%</b>	<b>224</b>	<b>100.0%</b>	<b>11,977,363</b>	<b>100.0%</b>	<b>283</b>	<b>100.0%</b>

**Table 3.** Population and respondent distributions by gender and race-ethnicity

Race	Males				Females			
	Population		Respondents		Population		Respondents	
White	4,891,561	42.5%	120	53.6%	5,031,468	42.0%	161	56.9%
Black	1,321,744	11.5%	50	22.3%	1,601,627	13.4%	41	14.5%
Hispanic	4,319,071	37.6%	42	18.8%	4,331,060	36.2%	58	20.5%
Others	965,964	8.4%	12	5.4%	1,013,209	8.5%	23	8.1%
<b>Total</b>	<b>11,498,340</b>	<b>100.0%</b>	<b>224</b>	<b>100.0%</b>	<b>11,977,364</b>	<b>100.0%</b>	<b>283</b>	<b>100.0%</b>

**Table 4.** Population and respondent distributions by gender and education

Education	Males				Females			
	Population		Respondents		Population		Respondents	
Up to HS	4,650,572	40.4%	67	29.9%	4,500,420	37.6%	106	37.5%
Some College	1,897,433	16.5%	50	22.3%	1,951,867	16.3%	76	26.9%
Associate	1,053,849	9.2%	19	8.5%	1,196,326	10.0%	39	13.8%

Bachelor's	2,419,617	21.0%	54	24.1%	2,817,933	23.5%	42	14.8%
Master's +	1,476,869	12.8%	34	15.2%	1,510,818	12.6%	20	7.1%
<b>Total</b>	<b>11,498,340</b>	<b>100.0%</b>	<b>224</b>	<b>100.0%</b>	<b>11,977,364</b>	<b>100.0%</b>	<b>283</b>	<b>100.0%</b>

**Table 5.** Population and respondent distributions by gender and household income

Income	Males				Females			
	Population		Respondents		Population		Respondents	
\$0 < \$10K	282,678	2.5%	21	9.4%	432,645	3.6%	30	10.6%
\$10K < \$25K	587,861	5.1%	20	8.9%	817,573	6.8%	53	18.7%
\$25K < \$50K	1,434,806	12.5%	43	19.2%	1,848,604	15.4%	86	30.4%
\$50K < \$75K	1,689,118	14.7%	52	23.2%	1,844,994	15.4%	45	15.9%
\$75K < \$100K	1,534,548	13.3%	30	13.4%	1,507,478	12.6%	28	9.9%
\$100K < \$150K	2,115,554	18.4%	42	18.8%	1,911,463	16.0%	20	7.1%
\$150K+	3,853,775	33.5%	16	7.1%	3,614,607	30.2%	21	7.4%
<b>Total</b>	<b>11,498,340</b>	<b>100.0%</b>	<b>224</b>	<b>100.0%</b>	<b>11,977,364</b>	<b>100.0%</b>	<b>283</b>	<b>100.0%</b>

**Table 6.** Population and respondent distributions by gender and marital status

Marital Status	Males				Females			
	Population		Respondents		Population		Respondents	
Married	6,377,958	55.5%	91	40.6%	6,285,502	52.5%	94	33.2%
Unmarried	1,337,690	11.6%	46	20.5%	2,317,551	19.3%	79	27.9%
Never Married	3,782,692	32.9%	87	38.8%	3,374,310	28.2%	110	38.9%
<b>Total</b>	<b>11,498,340</b>	<b>100.0%</b>	<b>224</b>	<b>100.0%</b>	<b>11,977,363</b>	<b>100.0%</b>	<b>283</b>	<b>100.0%</b>

**Table 7.** Population and respondent distributions by gender and number of adults

Adults	Males				Females			
	Population		Respondents		Population		Respondents	
1	1,638,064	14.2%	72	32.1%	1,975,602	16.5%	75	26.5%
2	5,789,580	50.4%	76	33.9%	6,115,676	51.1%	98	34.6%
3	2,286,089	19.9%	30	13.4%	2,344,294	19.6%	59	20.8%
4+	1,784,607	15.5%	46	20.5%	1,541,792	12.9%	51	18.0%
<b>Total</b>	<b>11,498,340</b>	<b>100.0%</b>	<b>224</b>	<b>100.0%</b>	<b>11,977,364</b>	<b>100.0%</b>	<b>283</b>	<b>100.0%</b>

### **Variance Estimation for Weighted Data:**

Survey estimates can be interpreted properly only in light of their associated sampling errors. Since weighting increases variance of estimates, use of standard variance calculation formulae with weighted data can result in misleading statistical inferences. With weighted data, two general

approaches for variance estimation can be distinguished. One is *Taylor Series Linearization*, while the second method of variance estimation is *Replication*.

**An Approximation Method for Variance Estimation** can be used to avoid the need for special software packages. Researchers who do not have access to such tools for design-proper estimation of standard errors can approximate the resulting variance inflation due to weighting and incorporate that in subsequent calculations of confidence intervals and tests of significance. With  $W_i$  representing the analysis weight of the  $i^{\text{th}}$  respondent, the inflation due to weighting, which is commonly referred to as *Design Effect*, can be approximated by:

$$\delta = 1 + \frac{\sum_{i=1}^n \frac{(W_i - \bar{W})^2}{n-1}}{\bar{W}^2}$$

For calculation of a confidence interval for an estimated percentage,  $\hat{p}$ , one can obtain the conventional variance of the given percentage, multiply it by the approximated design effect,  $\delta$ , and use the resulting quantity as adjusted variance. That is, the adjusted variance would be given by:

$$\hat{S}^2(\hat{p}) \approx S^2(\hat{p})(\hat{p}) \times \delta = \frac{\hat{p} \times (1 - \hat{p})}{n-1} \left( \frac{N-n}{N} \right) \times \delta$$

Subsequently, the  $(100-\alpha)$  percent confidence interval for P would be given by:

$$\hat{p} - z_{\alpha/2} \sqrt{\frac{\hat{p} \times (1 - \hat{p})}{n-1} \left( \frac{N-n}{N} \right) \times \delta} \leq P \leq \hat{p} + z_{\alpha/2} \sqrt{\frac{\hat{p} \times (1 - \hat{p})}{n-1} \left( \frac{N-n}{N} \right) \times \delta}$$

Of note, the overall design effect for this survey is estimated to be 3.7.