2024 Survey of Texans on Pedestrian and Bicycle Safety:
Identifying Barriers to Understanding Pedestrian and Bicycle Safety Laws

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Introduction

The objective of this survey was to measure and track pedestrian and bicycle safety in Texas. This is the fifth year that this survey has been conducted; a similar survey has been conducted since 2020. 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 2024 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

Survey Development

This survey was based on the survey conducted in 2023 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 set up 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 401 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 2024 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

Pedestrian Questions

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

- Reported walking at least once per week increased **8.3 percentage points** from 2023 to 2024.
- Walking for transportation has been increasing since 2022 to **27.1 percent** of respondents in 2024.
- Crossing the road outside an intersection or crosswalk increased over **10 percentage points** from 2023 to 2024.
- Walking on the left side of the road when there are no sidewalks has been increasing steadily since 2021.
- The percentage of respondents reporting safety features such as crossing signals, sidewalks, street lighting, and marked crosswalks at no locations was less in 2024 than in 2023, perhaps showing some infrastructure improvements.
- Driver behavior continues to be an obstacle to people walking more often.

Bicycle Questions

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

- Biking once a week or more increased by **16 percentage points** from 2023 to 2024.
- Biking for transportation has been increasing since 2022 and was cited by **28.4 percent** of respondents in 2024.

- Reported riding against traffic in the roadway was at the highest level so far at **29.3 percent** of respondents.
- Use of a bike light and reflective clothing at night both saw significant increases from 2023 to 2024.
- A lack of bike lanes/trails and driver behavior continue to be obstacles to people biking more often.

Driver Questions

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

- Most driver behaviors (yielding to pedestrians and bicyclists, and providing a safe distance when passing) showed their highest reported levels over the four survey waves, with the exception of yielding at crosswalks not located at an intersection.

Enforcement, Laws, and Messaging

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

- Awareness of enforcement efforts regarding pedestrian and bicycle safety peaked in 2024 at **33.1 percent** of respondents.
- In the 2024 survey, **13.8 percent** of respondents reported being extremely familiar with pedestrian and bicycle laws, the highest of the survey so far.
- Roadway signs remain the preferred method for reaching Texans as selected by the highest percentage of respondents (**73.1 percent**), followed by driver education curriculum (**50.4 percent**).

Knowledge

The knowledge survey questions showed the following change year to year:

- Overall, knowledge of laws has remained relatively consistent over the past four years of the survey.

Geographic Distribution

Figure 1 displays the geographic distribution of survey respondents, which shows that respondents came from all parts of the state. As expected, Texas's most populous counties of Harris, Dallas, Bexar, Tarrant, and Travis had the greatest number of respondents. However, several respondents also came from other counties in the state.

Respondents per County

Respondents per County	
Harris	72
Dallas	38
Bexar	37
Tarrant	21
Travis	14
Other	219

Respondents per Major Metropolitan Area	
Houston Area	104
DFW Area	90
San Antonio Area	44
Austin Area	24

Number of Respondents

	1 - 10
	11 - 25
	26 - 50
	51 - 72
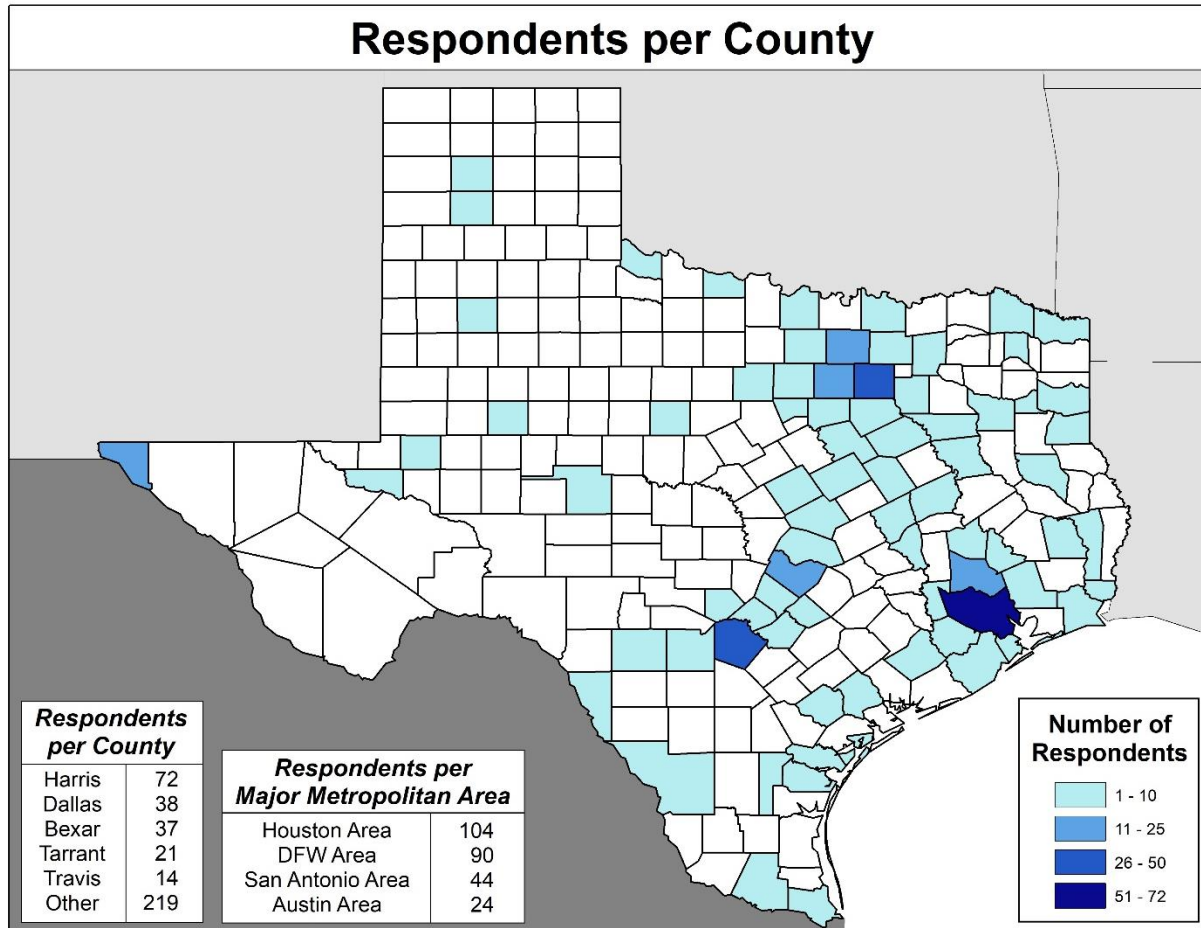
Figure 1. Geographic Distribution of Respondents.

Demographics

Respondents were asked to self-identify the type of area in which they live. As Figure 2 shows, respondents came from a variety of location types, with over half being from a large city or suburban location (**62.4 percent**).
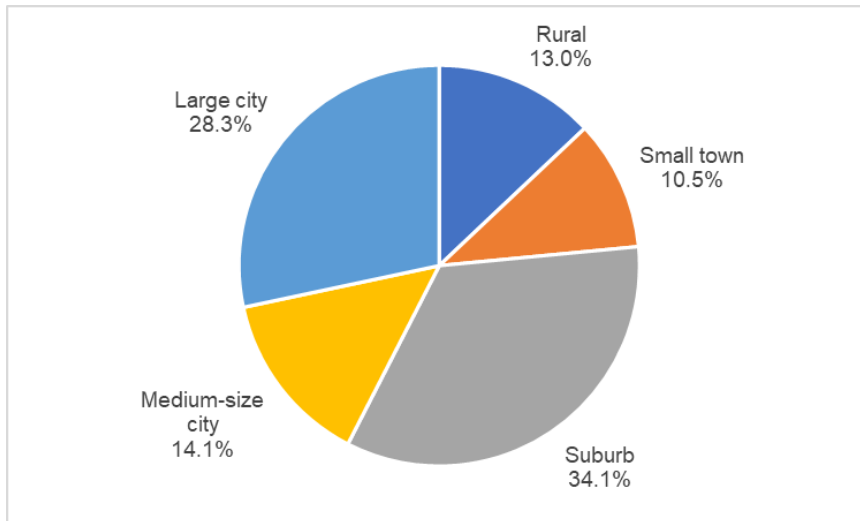
Figure 2. Location Type.

The survey respondents were almost evenly split between male and female, with females making up just over half of the respondents (**50.7 percent**) and males accounting for **49.1 percent**. A small fraction (**0.1 percent**) preferred not to state their gender (see Figure 3).
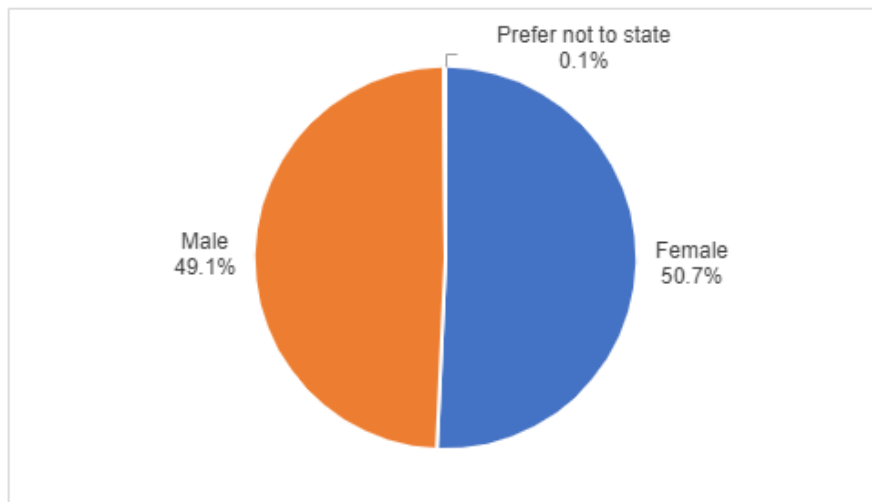
Figure 3. Gender.

As Figure 4 shows, the respondents' ages spanned a variety of groups. About half of the respondents were between 18 and 44 years of age: **13.3 percent** were 18–24 years old, **19.1 percent** were 25–34 years old, and **18.6 percent** were 35–44 years old. The other half were 45 years of age or older: **16.7 percent** were 45–54 years old, **14.7 percent** were 55–64 years old, and **17.4 percent** were 65 years old or older. Just **0.1 percent** preferred not to state their age.
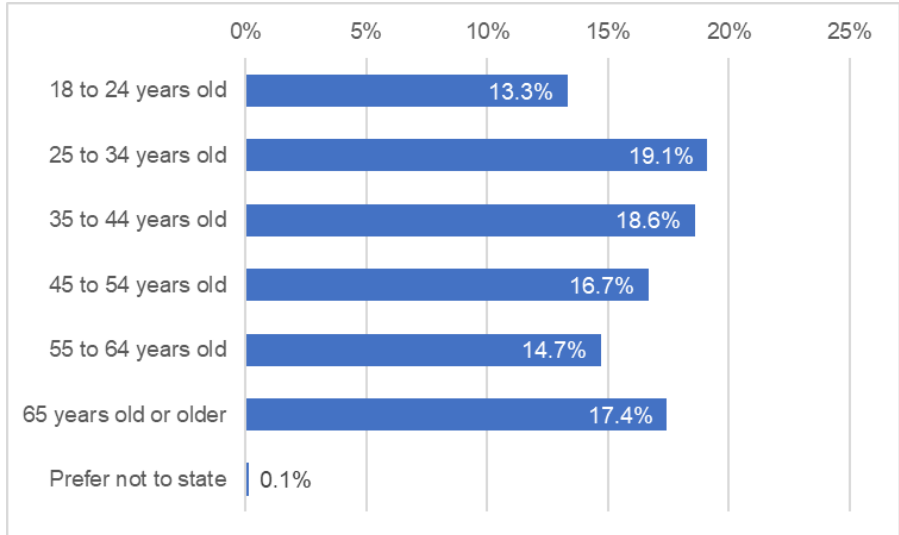
Figure 4. Age Category.

The race and ethnicity of respondents shown in Figure 5 represent the diversity of Texas. The highest percentage of respondents were White (**42.2 percent**) and Hispanic or Latino of any race (**36.5 percent**). Other respondents included Black or African American (**12.5 percent**), Asian (**3.0 percent**), more than one race (**3.3 percent**), Native American or Alaskan Native (**1.2 percent**), and other races (**1.1 percent**). A small portion (**0.2 percent**) preferred not to state their race or ethnicity.
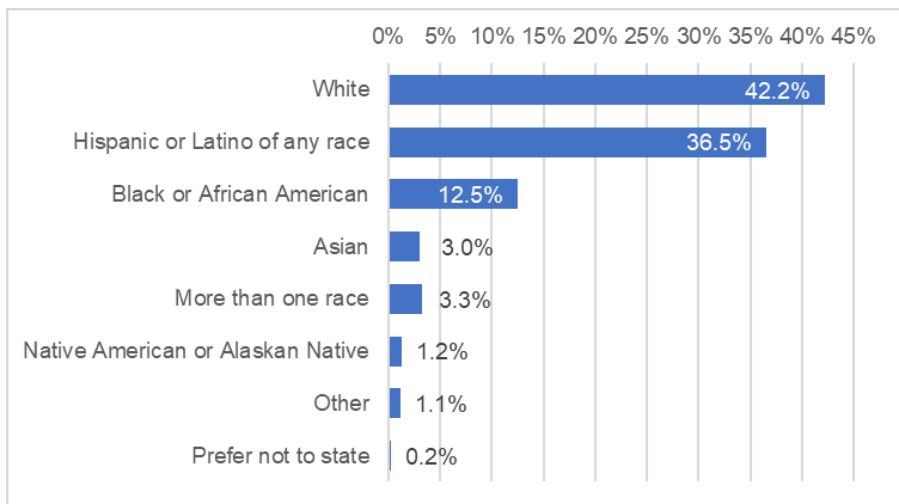
Figure 5. Race and Ethnicity.

Educational attainment was also surveyed. As Figure 6 shows, **41.0 percent** of respondents have obtained a college degree (associate, bachelor's, or postgraduate), and another **18.0 percent** attended some college. Overall, **96.6 percent** completed high school or equivalent (GED).
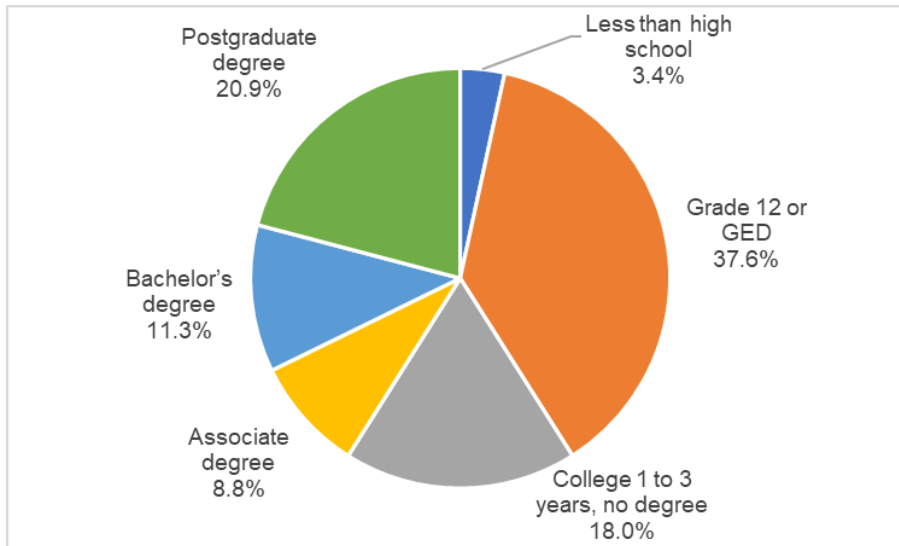
Figure 6. Education Level.

Pedestrian Questions

Frequency and Purpose

First, respondents were asked about how frequently they walk on public roads or sidewalks. As Figure 7 shows, more than a quarter (**27.2 percent**) of respondents reported walking daily, with **75.5 percent** reporting walking at least once per week. Just **8.0 percent** 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.
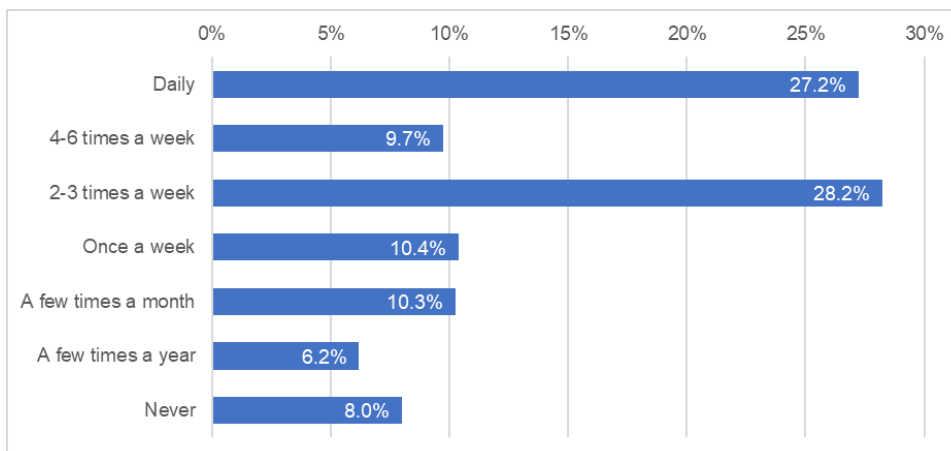
Figure 7. Walking Frequency.

Respondents were also asked the reason(s) why they walk. Figure 8 shows the responses, with the vast majority of respondents (**77.0 percent**) reporting walking for exercise or other health benefits. This is followed by over one-third (**36.1 percent**) that report walking for leisure or fun, **27.1 percent** that do so for transportation purposes, and **16.4 percent** that walk for social reasons. About **2 percent** reported other reasons, which mainly included walking a dog. The total exceeds 100 percent since respondents could choose all options that applied to them.
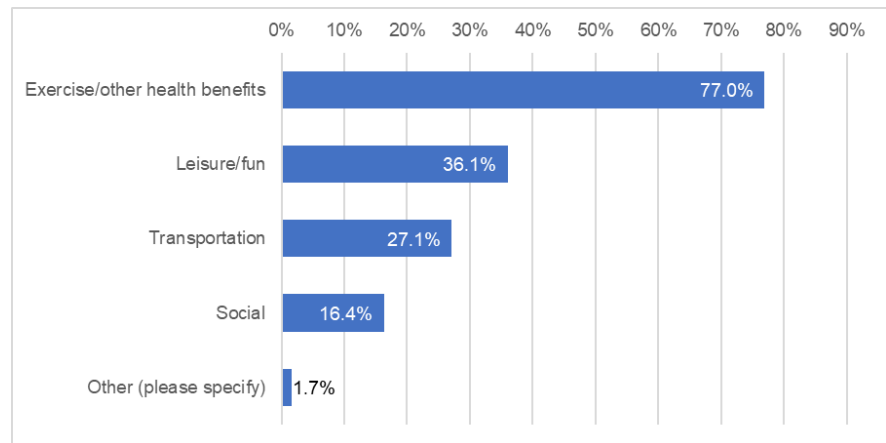
Figure 8. Walking Purpose.

Pedestrian Behavior

Figure 9 shows reported pedestrian behavior, with **32.9 percent** of respondents reporting crossing the road at a location other than a crosswalk or intersection very often or always, with another **33.6 percent** reporting doing so sometimes. However, approximately **33.5 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.
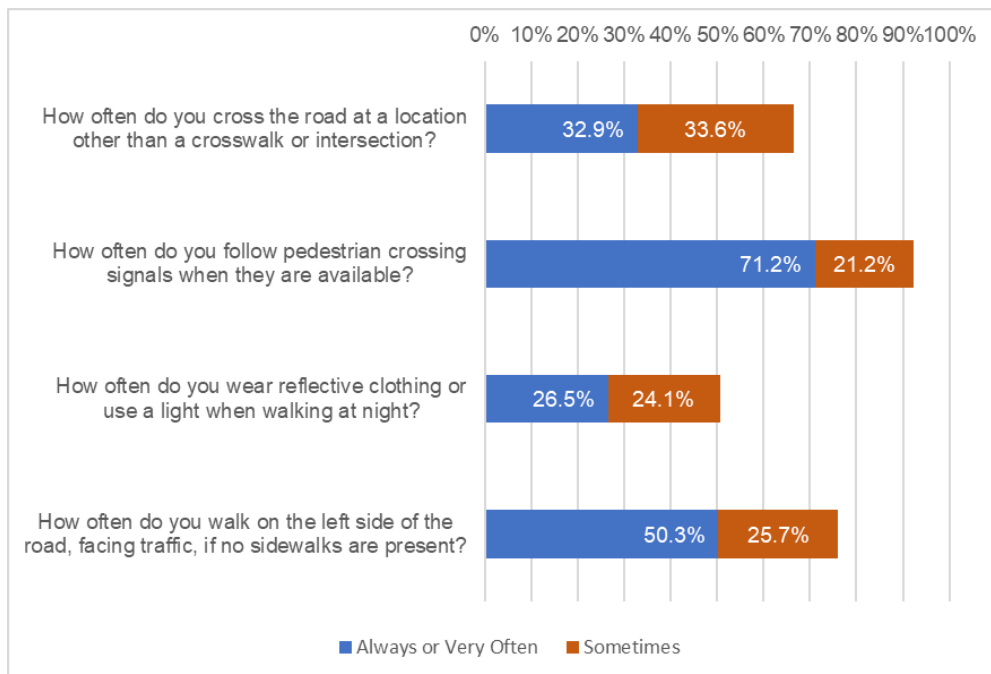
Figure 9. Walking Behavior.

The majority of respondents (**71.2 percent**) reported following pedestrian signals very often or always, with only **7.6 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 **50.6 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 **50.3 percent** of respondents very often or always.

Pedestrian Safety Features

Respondents were asked about pedestrian safety features available on the roads near where they live, and Figure 10 shows the percentage that reported these features at no locations. Responses show a lack of pedestrian crossing signals and marked crosswalks at intersections, with **11.7 percent** and **11.4 percent,** respectively, reporting these features at no locations near where they live. Street lighting/illumination was the most commonly reported safety feature observed by respondents.
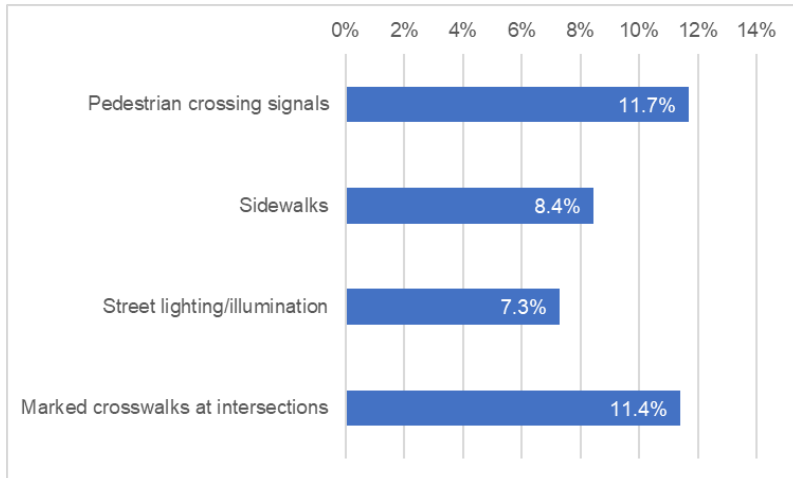
Figure 10. Pedestrian Safety Features at No Locations.

One issue of specific concern is regarding pedestrians having safe ways to cross higher-speed roadways, which pose a significant safety risk to pedestrians. As Figure 11 shows, the majority of respondents (**68.9 percent**) report safe ways to cross high-speed roads at some or all locations near where they live; of those, **89.6 percent** say these crossings are convenient to use. However, **17.4 percent** of respondents reported no safe places to cross high-speed roads.
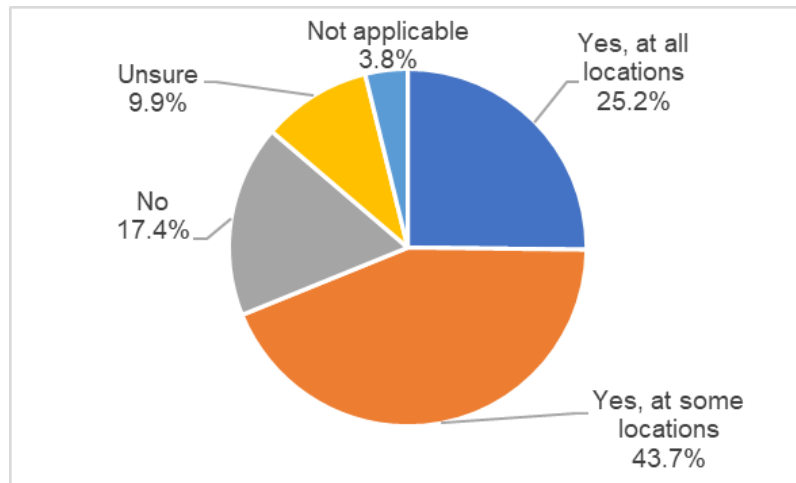
Figure 11. Safe Places to Cross High-Speed Roads as a Pedestrian.

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 weather, which includes rain, snow, cold, and heat, at **69.1 percent** of respondents. This was followed closely by the **59.0 percent** of respondents that reported driver behavior as an obstacle to walking more. Other obstacles

reported by about half of respondents were poor roadway/sidewalk conditions, lack of convenience, and lack of sidewalks.

Table 1. Pedestrian Obstacles.

Issue	Percent Cited as Obstacle
Time to get to destination	46.9%
Lack of convenience	56.8%
Poor weather	69.1%
Lack of sidewalks	49.9%
Lack of crossing signals	46.1%
Poor lighting	49.3%
Hard to navigate with a disability	38.4%
Poor roadway/sidewalk conditions	57.6%
Driver behavior	59.0%
Other sidewalk users	23.7%
Other	8.1%

Bicycle Questions

Frequency and Purpose

Figure 12 shows the reported frequency of biking among respondents. Over one-third (**36.4 percent**) of respondents reported biking at least once per week, with an additional **6.5 percent** reporting doing so a few times a month. Almost half (**44.8 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.
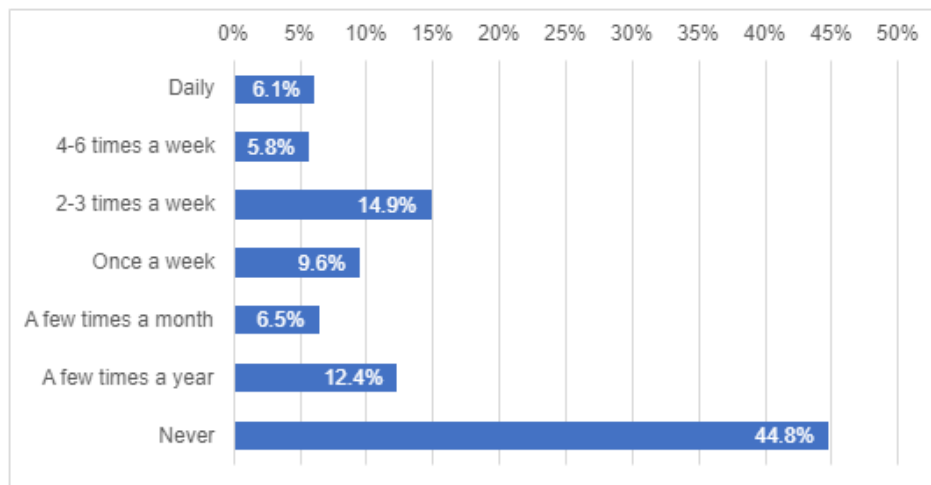
Figure 12. Biking Frequency.

Figure 13 shows respondents reported biking mainly for exercise/other health benefits (**62.4 percent**) and leisure/fun (**52.9 percent**). Biking for transportation was reported by **28.4 percent,** and biking for social reasons was reported by **11.8 percent** of respondents. The total exceeds 100 percent since respondents could choose all options that applied to them.
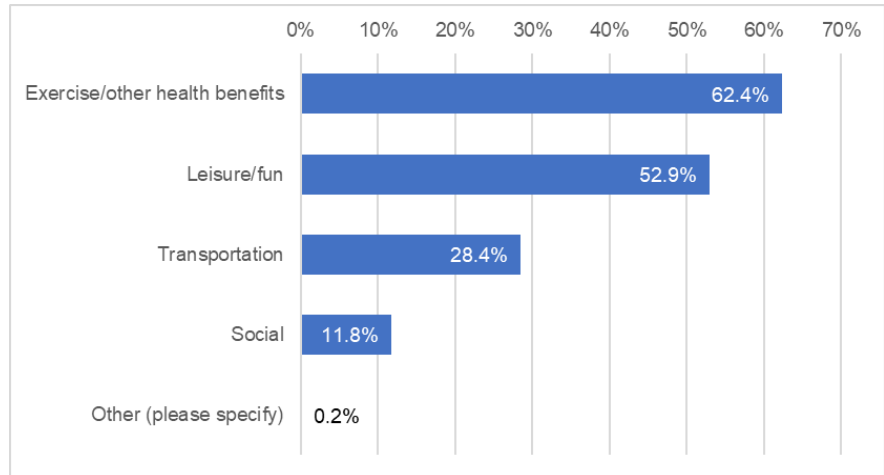
Figure 13. Biking Purpose.

Bicyclist Behavior

Respondents were asked about their bicycling behavior over the last year (see Figure 14). Riding against traffic in the road very often or always was reported by **29.3 percent** of respondents, with **22.7 percent** reporting doing so sometimes and **23.9 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 **59.4 percent** of respondents. Only **9.6 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. Frequent helmet use (very often or always) was reported by **45.2 percent** of respondents, with another **34.0 percent** reporting infrequent helmet use (rarely or never). Just under one-half (**46.7 percent**) of respondents reported wearing reflective clothing while biking very often or always. Bike helmets and reflective clothing are recommended for safety but are not required by Texas law.
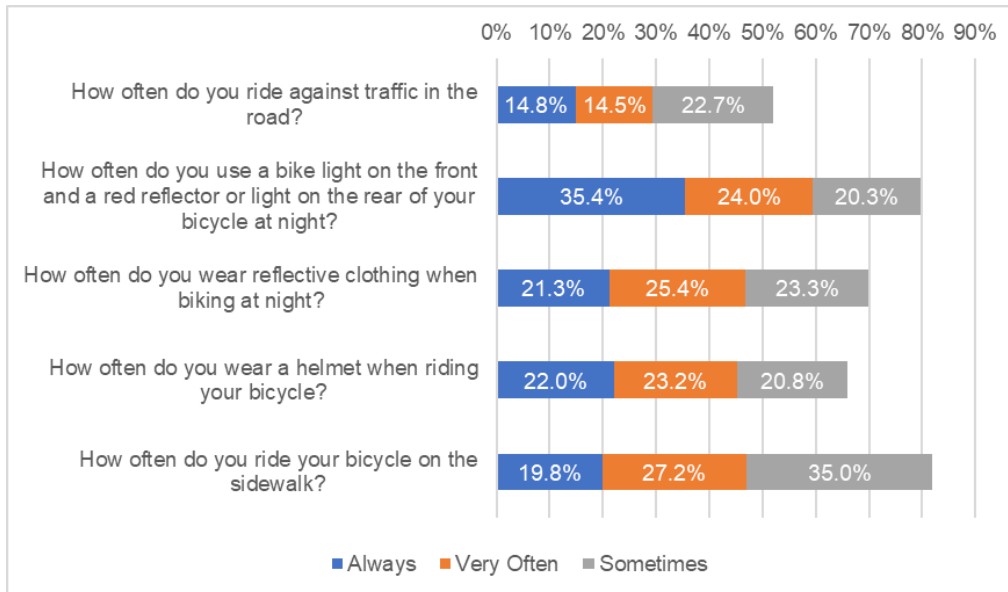
Figure 14. Biking Behavior.

For a second year, the survey included a question regarding biking on the sidewalk. Over three-quarters (**82.0 percent**) of respondents reported riding their bicycle on the sidewalk at least some of the time, with **5.4 percent** saying they never and **47.0 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.

Bicycle Safety Features

Respondents were asked about bicycle safety features that were available in the area near where they live. Separate spaces for bicyclist use were reported as available in at least half of locations by **60.7 percent** of respondents, with **14.9 percent** reporting no locations available near where they live with separate spaces for bicyclists to use (see Figure 15). Street lighting/illumination was reported at no locations by only **5.9 percent** of respondents.
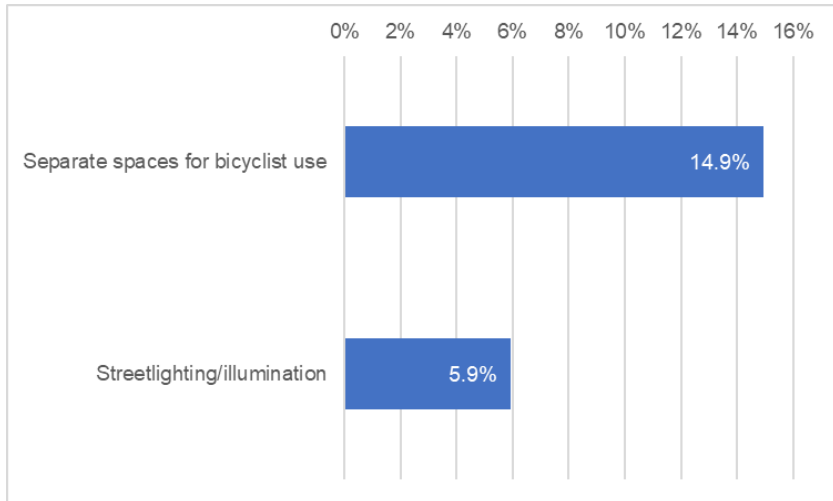
Figure 15. Bicycle Safety Features at No Locations.

As Figure 16 shows, **78.0 percent** of respondents reported that there are safe places for bicyclists to cross higher-speed roads at some or all locations near where they live, and **16.5 percent** reported that there were not. Overall, the crossings were seen as convenient, with **90.6 percent** reporting that these crossings were convenient to use.
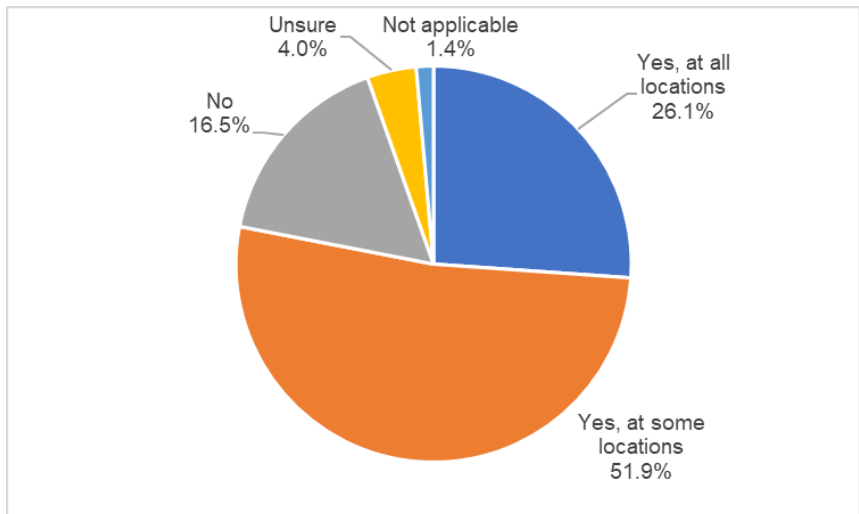
Figure 16. Safe Places to Cross High-Speed Roads as Bicyclist.

Bicyclist Obstacles

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

Table 2. Biking Obstacles.

Issue	Percent Cited as Obstacle
Time to get to destination	47.8%
Lack of convenience	62.3%
Poor weather	69.4%
Lack of bike lanes/trails	58.7%
Lack of crossing signals	48.2%
Poor lighting	53.5%
Poor roadway/sidewalk conditions	53.3%
Driver behavior	57.3%
Other sidewalk users	26.3%
Other	7.9%

Driver Questions

Respondents were asked four questions about their driving behavior around pedestrians and bicyclists. Figure 17 shows the results. The first two questions asked how often drivers yield to pedestrians. Yielding to pedestrians at an intersection with a stop sign or traffic signal was reported by **79.6 percent** of drivers very often or always. When broken out, **61.6 percent** of drivers reported yielding to pedestrians all the time, and another **18.0 percent** reported very often.
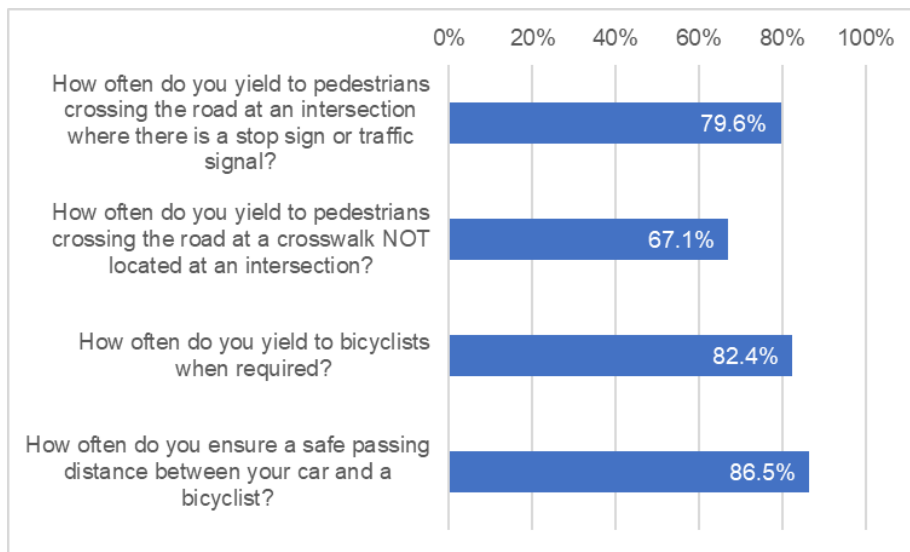
Figure 17. Driver Behavior (Very Often or Always).

Yielding to pedestrians at a crosswalk not at an intersection (or mid-block) was reported less often, with **67.1 percent** reporting doing so very often or always. Only **44.5 percent** reported yielding for pedestrians crossing the road at mid-block locations all the time.

Respondents were also asked about their yielding to bicyclists when required. This was reported by **82.4 percent** of respondents very often or always. Similarly, ensuring a safe passing distance between their car and a bicyclist was reported by **86.5 percent** of respondents very often or always.

Enforcement

Respondents were asked if they were aware of any traffic enforcement efforts by police in their area regarding pedestrian and bicycle safety in the past year. As Figure 18 shows, about one-third (**33.1 percent**) of respondents reported an awareness of any such efforts.
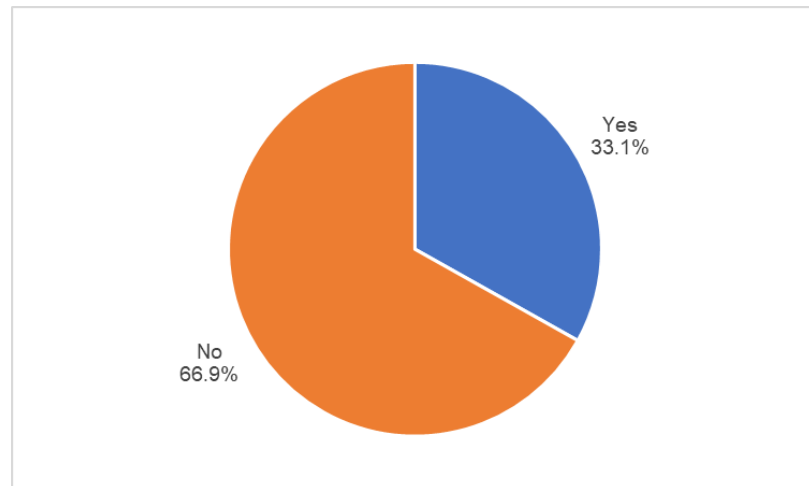
Figure 18. Traffic Enforcement Efforts.

Respondents that answered yes were then asked to describe their experiences, which is summarized here. The respondents from this survey indicated many positive police interactions, which included the enforcement of bicyclists and pedestrians having the right of way in certain situations, pedestrian crossings at crosswalks, protection of pedestrians from cars, and correct reflective gear on bikes. Most respondents reported having a good or great interaction/outlook on enforcement, while some had fine or no experience with police. Those that had good interactions noted how the police were "educated" on bicycle and pedestrian laws. Almost all respondents felt safer due to enforcement of these laws, specifically noting the inclusion of crossing guards and enforcement around schools.

Laws and Messaging

As Figure 19 shows, nearly two-thirds (**61.4 percent**) of respondents reported at least a moderate familiarity with pedestrian and bicycle safety laws, and another **22.0 percent** reported being slightly familiar with these laws. No familiarity was reported by **16.7 percent** of respondents.
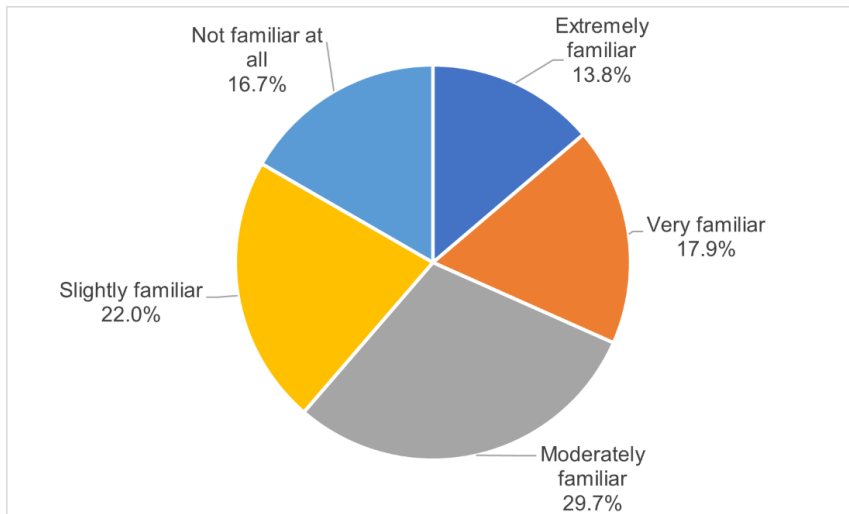
Figure 19. Familiarity with Laws.

Roadway signs were the most commonly selected method of education by respondents (see Figure 20) for educating Texans on bike and pedestrian safety laws, with **73.1 percent** choosing this option. Driver education curriculum was also popular, with half of respondents (**50.4 percent**) choosing this method, followed by social media with **44.9 percent** of respondents. Dynamic messaging signs and public service announcements were less popular. Education in elementary and middle schools and media campaigns were the least chosen methods.
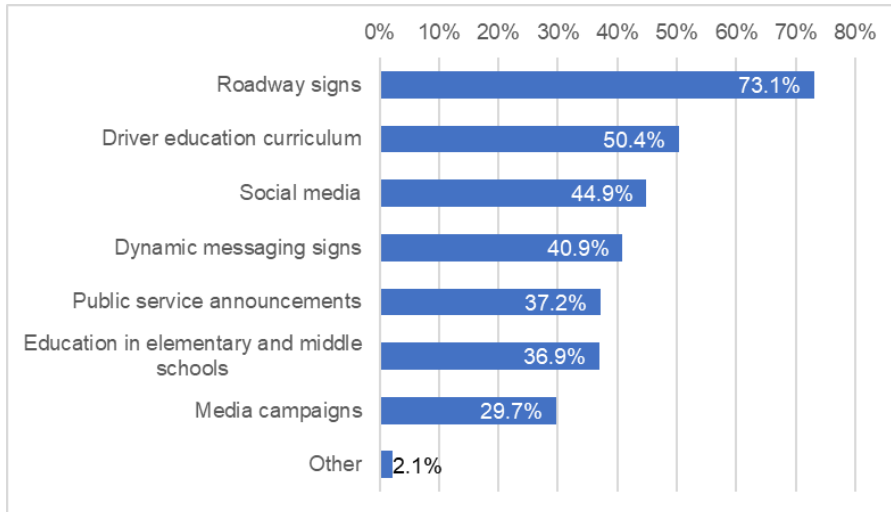
Figure 20. Messaging Preferences.

Knowledge of Laws

The final section of the survey was the knowledge assessment. Respondents were asked to answer nine questions regarding pedestrian and bicycle safety laws. Seven questions were true/false, one asked about familiarity with a new law, and one involved making a selection from a set of pictures.

Table 3 shows the results of the true/false questions, with the percent of respondents selecting each option shown and the correct answer highlighted in green. The average percent correct across all true/false questions was **69.2 percent**.

Table 3. Knowledge Questions Responses.

Question	True	False	Correct Answer
A local authority may pass ordinances in addition to state statutes that address pedestrian and bicycle safety.	**88.1%**	11.9%	True
Bicyclists do not have the same rights and responsibilities as a motor vehicle on Texas roadways.	30.7%	**69.3%**	False
Bicyclists should ride as far to the left-hand side of the street as possible.	51.9%	**48.1%**	False
A bicyclist is required to use a light when riding at night.	**87.6%**	12.4%	True
As a pedestrian, if a sidewalk is available and accessible, they must use it.	**86.4%**	13.6%	True
As a pedestrian, if a sidewalk is NOT available and accessible, they should walk on the left-hand side of the street—facing traffic.	**73.5%**	26.5%	True
The pedestrian always has the right-of-way.	68.7%	**31.3%**	False

The two questions where the lowest percentage of respondents answered correctly were if bicyclists should ride as far to the left-hand side of the street as possible (**48.1 percent** correct) and if the pedestrian always has the right-of-way (**31.3 percent** correct).

Respondents were also asked if they were aware of the 2021 law requiring drivers to both stop and yield to pedestrians or other vulnerable road users using a crosswalk. As Figure 21 shows, **44.4 percent** of respondents were familiar with the law, **41.2 percent** were not familiar with the law, and another **14.3 percent** were not sure.
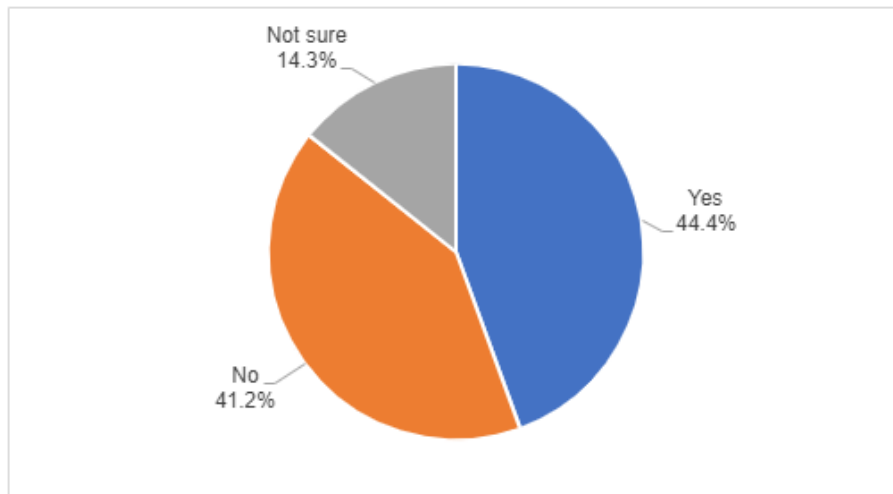
Figure 21. Familiarity with Stop and Yield Law.

The final question on the assessment asked respondents to select the images that contained crosswalks. Figure 22 shows the images that were displayed to respondents. Figure 23 shows the percentage of respondents that selected each image. The vast majority of respondents (**81.7 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 each only correctly identified by **55.4 percent** of respondents. Only **6.3 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 **2.9 percent** of respondents in the survey correctly identified all images as containing a crosswalk.
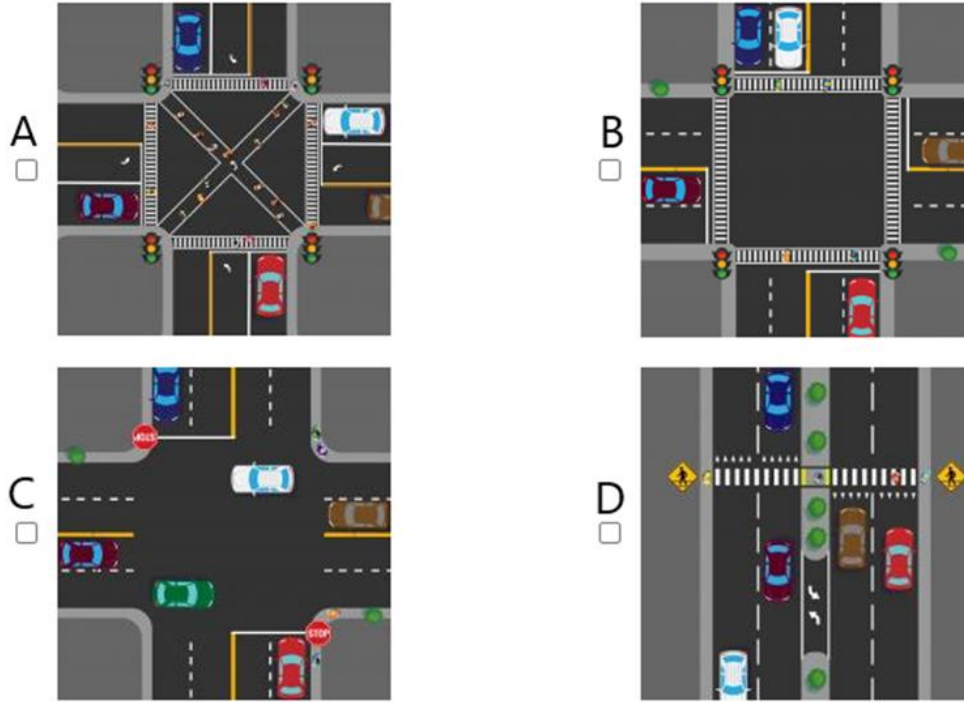
Figure 22. Crosswalk Images.
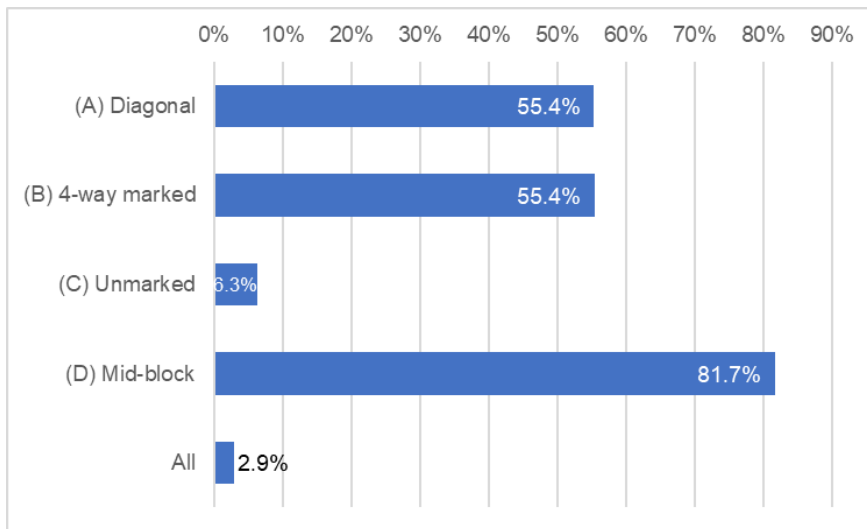
Figure 23. Identification of Crosswalks.

Year-to-Year Comparisons

In this section, comparisons to the same survey conducted in 2021–2023 are included to provide a picture of how pedestrian and bicycle safety and knowledge are changing in Texas. A similar survey was also conducted in 2020, but due to the differences in data collection methods, the findings are not comparable and therefore not included in the year-to-year analysis.

Pedestrian Questions

In 2024, walking at least once per week was reported by **75.6 percent** of respondents, an **8.3 percentage point** increase from 2023. As Figure 24 shows, this is part of a longer trend of reported increases in walking.
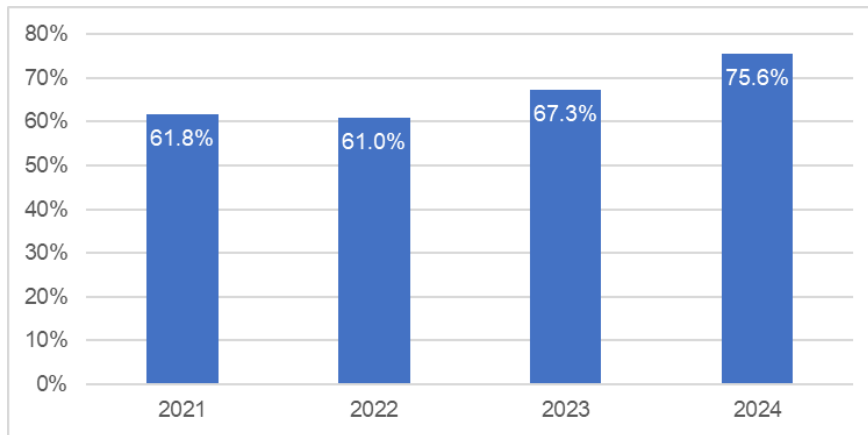
Figure 24. Walking at Least Once per Week, by Year.

The reasons for walking were largely the same across the three years of the survey, with exercise/other health benefits being the main reason for walking. However, as Figure 25 shows, the percentage of respondents that reported walking for transportation purposes has been on the increase since the 2022 survey.
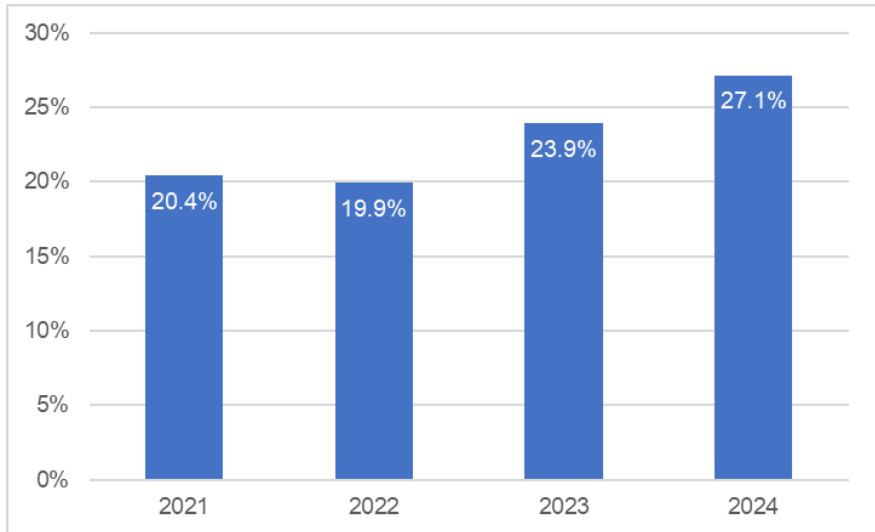
Figure 25. Walking for Transportation, by Year.

Reported pedestrian behavior showed some noteworthy changes in 2024. Figure 26 shows the percent of respondents in each year that reported engaging in each behavior very often or always. Reported crossing of the road outside an intersection or crosswalk increased by over **10 percentage points** in 2024. Following crossing signals very often or always did see another small increase from 2023 to 2024 but still remained below 2021 levels. Wearing reflective clothing or using a light at night while walking was at the highest level of the past four years at **26.5 percent** of respondents. Similarly, walking on the left side of the road when no sidewalks are present was also at the highest level of the past four years, now at just over half of respondents.
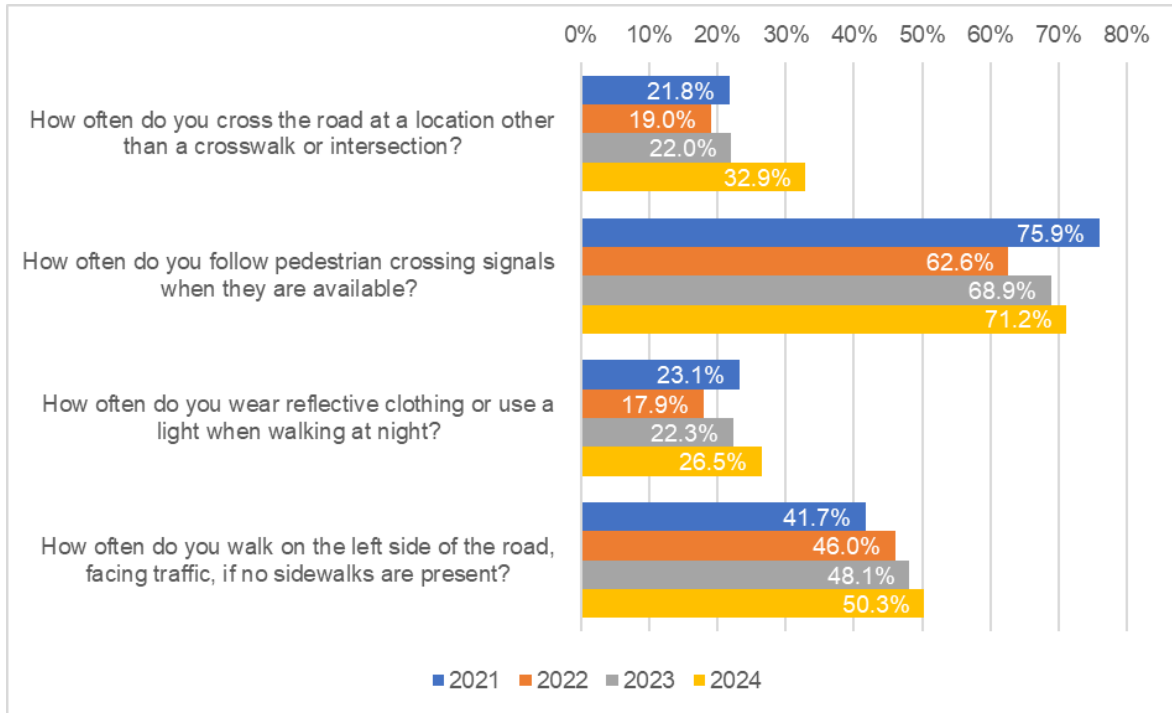
Figure 26. Pedestrian Behavior (Very Often or Always), by Year.

Pedestrian safety features also showed some changes. Figure 27 shows the percent of respondents for each year that reported not seeing these safety features at any locations. The percent of respondents reporting these safety features at no locations is less in 2024 than in 2023, perhaps showing some infrastructure improvements.
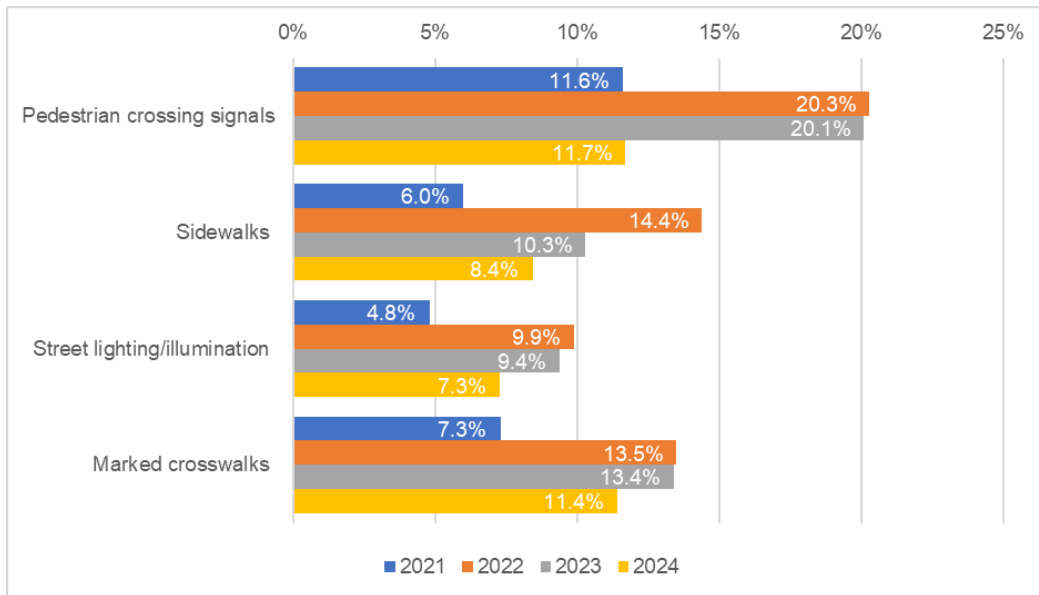
Figure 27. Pedestrian Safety Features at No Locations, by Year.

Table 4 shows the percentage of respondents for each year that cited each issue as an obstacle to walking more often. The top obstacle reported by pedestrians across all years continues to be poor weather, such as rain, snow, heat and cold. This is closely followed by driver behavior, which had been on the increase from **49.4 percent** of respondents in 2021 to **62.0 percent** in 2023; this obstacle decreased slightly to **59.0 percent** in 2024. Poor roadway and sidewalk conditions were reported by the third highest percentage of respondents in 2024 and has been on the increase since 2021.

Table 4. Pedestrian Obstacles, by Year.

Issue	Percent Cited as Obstacle			
	2021	2022	2023	2024
Time to get to destination	41.4%	49.6%	48.2%	46.9%
Lack of convenience	33.4%	37.7%	43.4%	56.8%
Poor weather	60.0%	69.5%	64.8%	69.1%
Lack of sidewalks	36.6%	52.3%	51.8%	49.9%
Lack of crossing signals/signs	34.0%	45.8%	48.5%	46.1%
Poor lighting	40.4%	54.4%	47.5%	49.3%
Hard to navigate with a disability	23.9%	33.4%	31.9%	38.4%
Poor roadway/sidewalk conditions	37.0%	49.5%	53.6%	57.6%
Driver behavior	49.4%	55.7%	62.0%	59.0%
Other sidewalk users	14.5%	24.0%	22.0%	23.7%

Bicycle Questions

In the 2024 survey, the percentage of respondents that reported biking once a week or more was the highest reported percentage of all survey years (see Figure 28). At the same time, the percentage that reported never biking dropped by nearly **20 percentage points** from 2023 to 2024. A new response option of biking "a few times a year" was added in 2024, between "a few times a month" and "never," which could also account for the decrease in those reporting that they never bike.
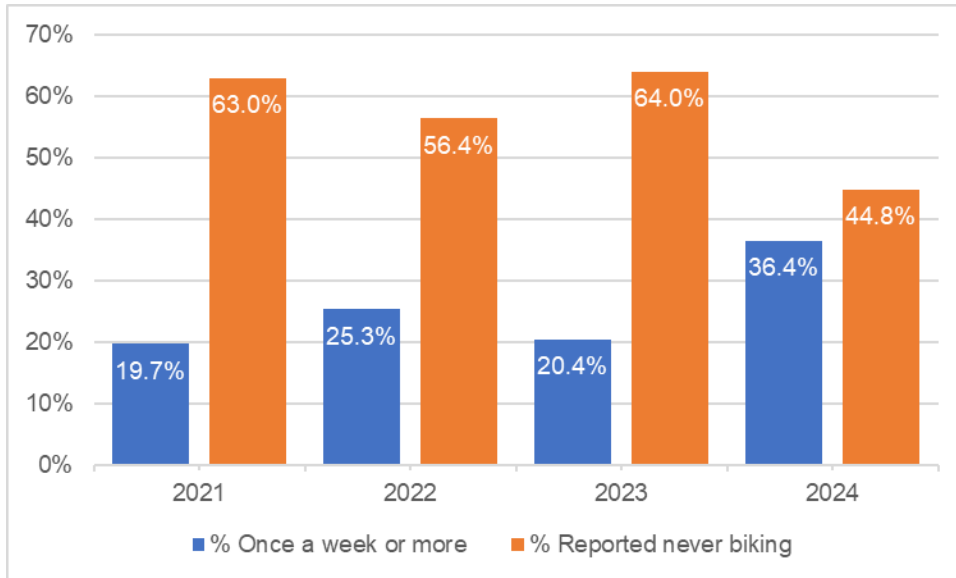
Figure 28. Biking Frequency, by Year.

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 29.
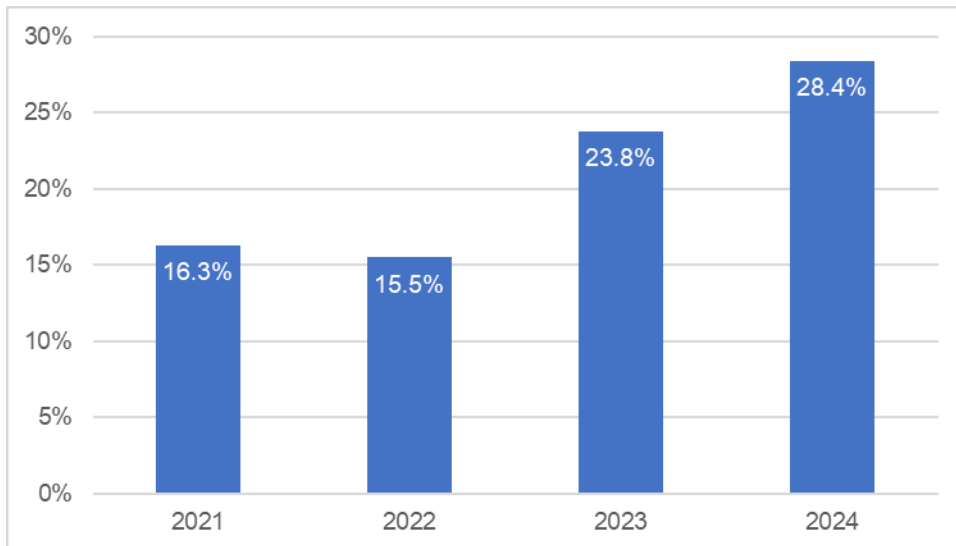
Figure 29. Biking for Transportation, by Year.

As Figure 30 shows, the percentage of respondents that reported riding against traffic in the road very often or always climbed to **29.3 percent** of respondents in 2024, the highest of all survey years. However, reported use of a bike light and use of reflective clothing at night increased in 2024. Reported helmet use also increased to the highest level yet, with **45.2 percent** of respondents reporting using a helmet very often or always. Riding on the sidewalk, which was a new question in 2023, increased **8 percentage** points from 2023 to 2024.
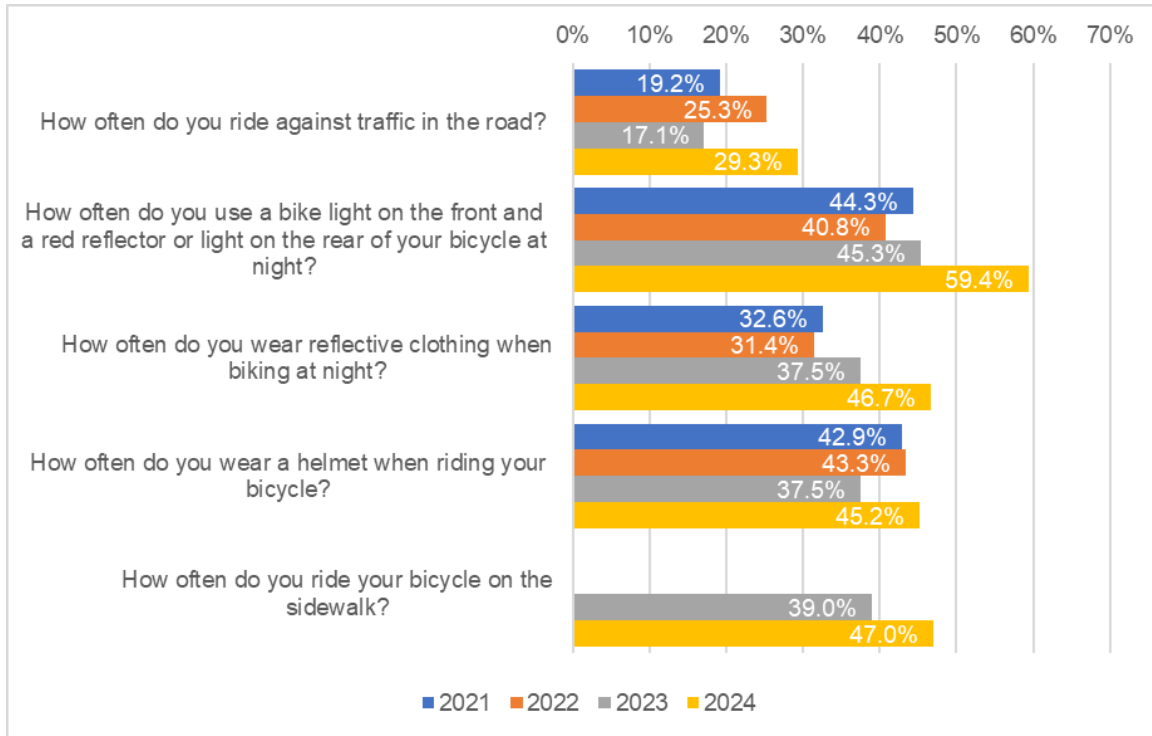
Figure 30. Bicyclist Behavior (Very Often or Always), by Year.

Bicycle safety features reported by respondents also had some changes in 2024. As Figure 31 shows, the percentage of respondents that reported separate spaces for bicyclist use at no locations in 2024 was slightly higher than 2023 but was still well below 2021 and 2022 levels. However, the percentage of respondents that reported street lighting/illumination at no locations continued to increase again in 2024.
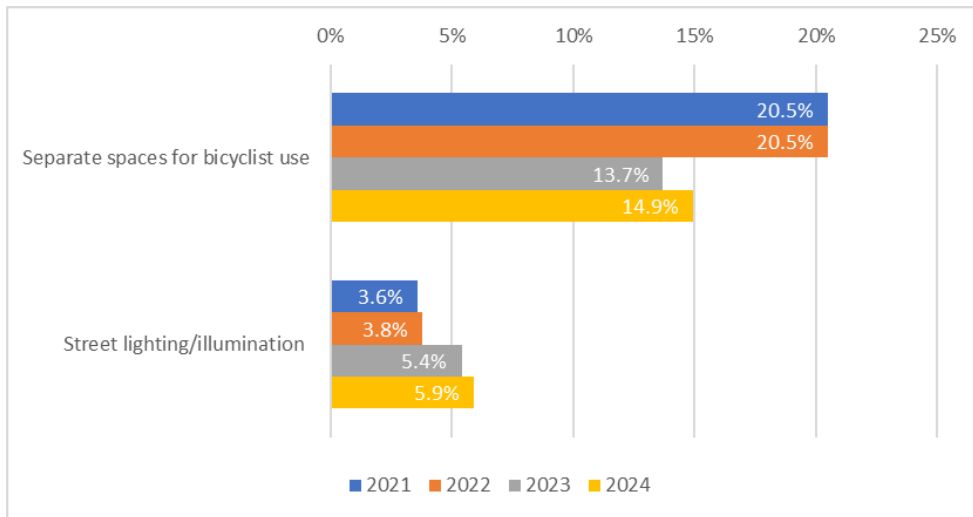
Figure 31. Bicycle Safety Features at No Locations, by Year.

Table 5 shows the percentage of respondents that cited each issue as an obstacle to biking more often. The most-cited obstacle in 2024 was poor weather, followed by a lack of convenience (**62.3 percent**) and a lack of bike lanes/trails at **58.7 percent** of respondents. Driver behavior continues to be an obstacle across the four years of the survey.

Table 5. Bicyclist Obstacles, by Year.

Issue	Percent Cited as Obstacle			
	2021	2022	2023	2024
Time to get to destination	39.2%	46.9%	40.8%	47.8%
Lack of convenience	36.8%	45.4%	42.5%	62.3%
Poor weather	62.2%	64.8%	58.1%	69.4%
Lack of bike lanes/trails	57.5%	64.0%	60.5%	58.7%
Lack of crossing signals or signs	35.4%	49.5%	46.2%	48.2%
Poor lighting	36.8%	47.9%	42.1%	53.5%
Poor roadway/sidewalk conditions	45.1%	52.1%	51.4%	53.3%
Driver behavior	59.0%	56.5%	57.2%	57.3%
Other sidewalk users	25.8%	30.7%	26.9%	26.3%

Driver Questions

Figure 32 shows the driver behaviors around pedestrians and bicyclists reported by respondents very often or always. Most driver behaviors showed their highest reported levels over the four survey waves, with the exception of yielding at crosswalks not at an intersection. Reported driver yielding at intersections very often or always was **79.6 percent** but only **67.1 percent** at crosswalks at non-intersections (or mid-block).

Ensuring a safe passing distance between their car and a bicyclist was reported by **86.5 percent** of respondents very often or always, an increase of **4.2 percentage points** from 2023. Yielding to bicyclists when required, which was a new question in 2023, remained high at **82.4 percent**.
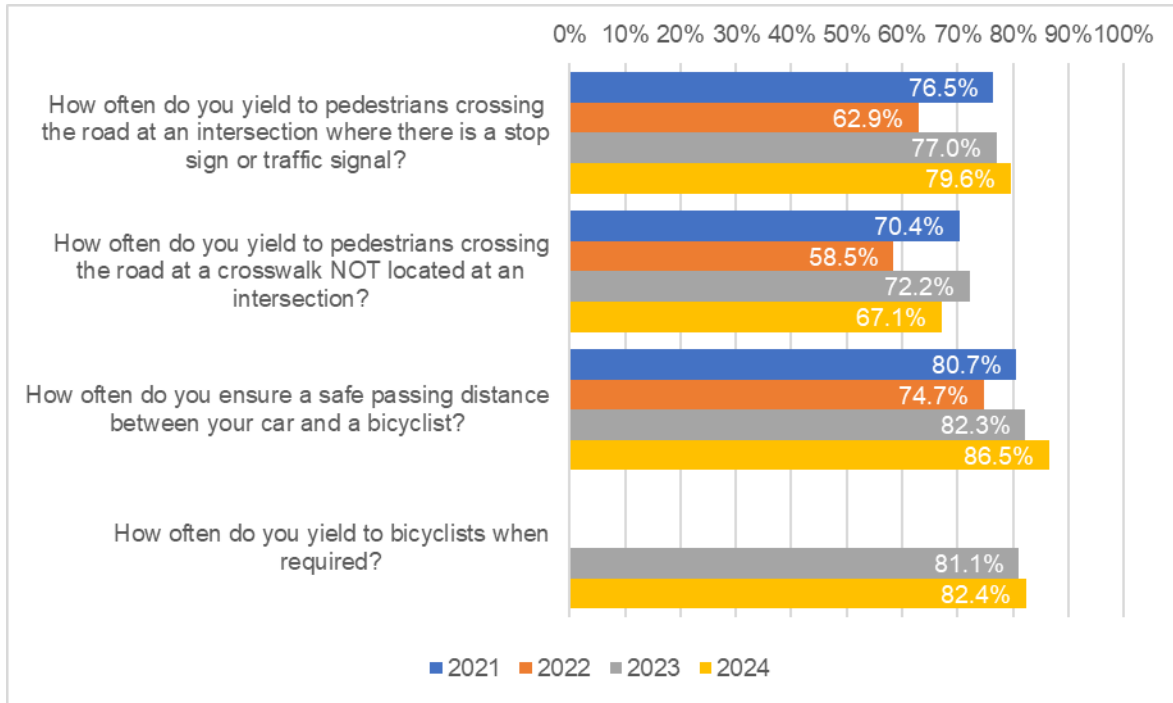
Figure 32. Driver Behavior (Very Often or Always), by Year.

Enforcement

Figure 33 shows the percentage of respondents reporting seeing or hearing about enforcement efforts by law enforcement regarding pedestrian and bicycle safety. In 2024, approximately one-third (**33.1 percent**) of respondents reported hearing about enforcement efforts, the highest percentage of all years of the survey.
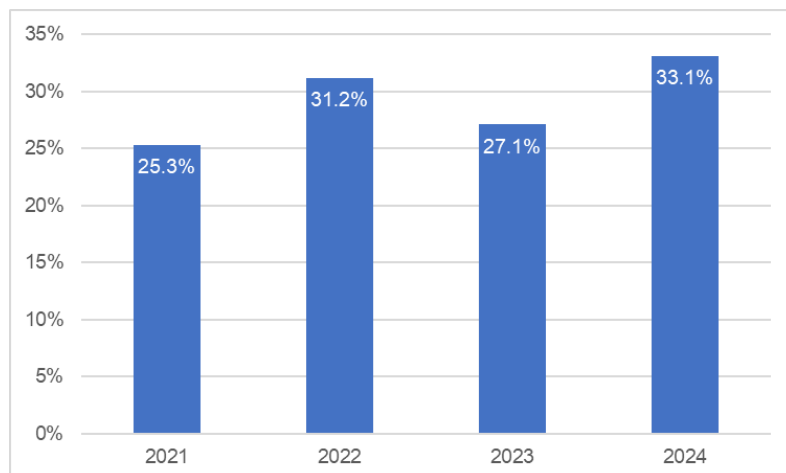
Figure 33. Respondents Reporting Enforcement, by Year.

Familiarity with Laws

Figure 34 shows the self-reported familiarity with pedestrian and bicycle laws reported by respondents over the four years. In the 2024 survey, **13.8 percent** of respondents reported being extremely familiar with pedestrian and bicycle laws, the highest of the survey so far.
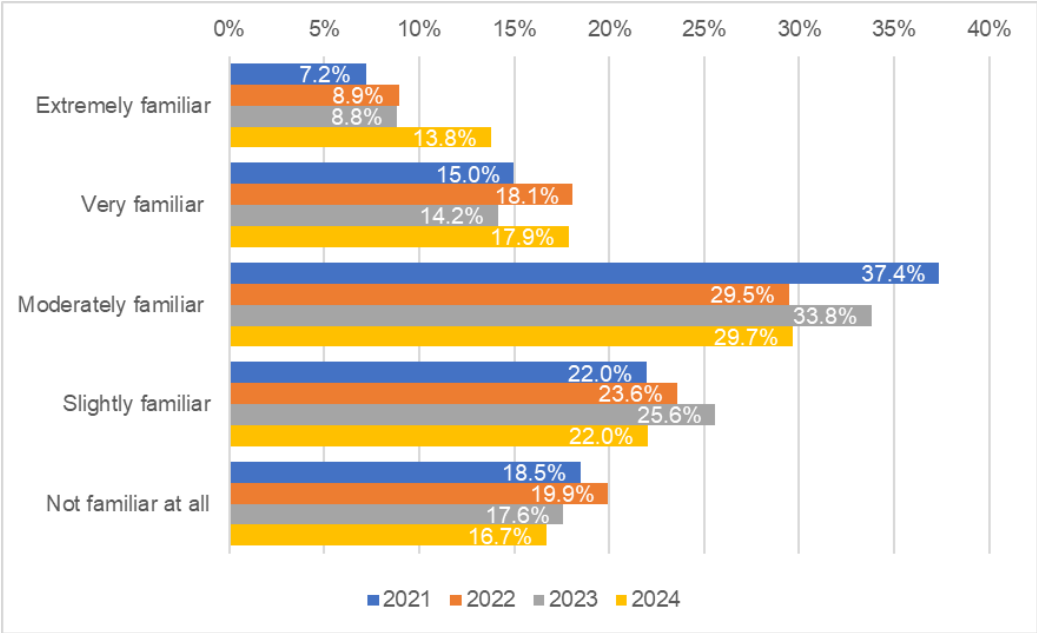
Figure 34. Familiarity with Laws, by Year.

Methods for Education

Over the past four years, the preferred method of educating the public on pedestrian and bicycle laws has fluctuated (see Figure 35). Roadway signs remain the method selected by the highest percentage of respondents. Support for dynamic messaging signs increased in 2024 to **40.9 percent**, after falling in 2023 to **35.3 percent**. Driver education curriculum, while declining slightly, also remains a popular method. Media campaigns have been decreasing in popularity over the past four years.
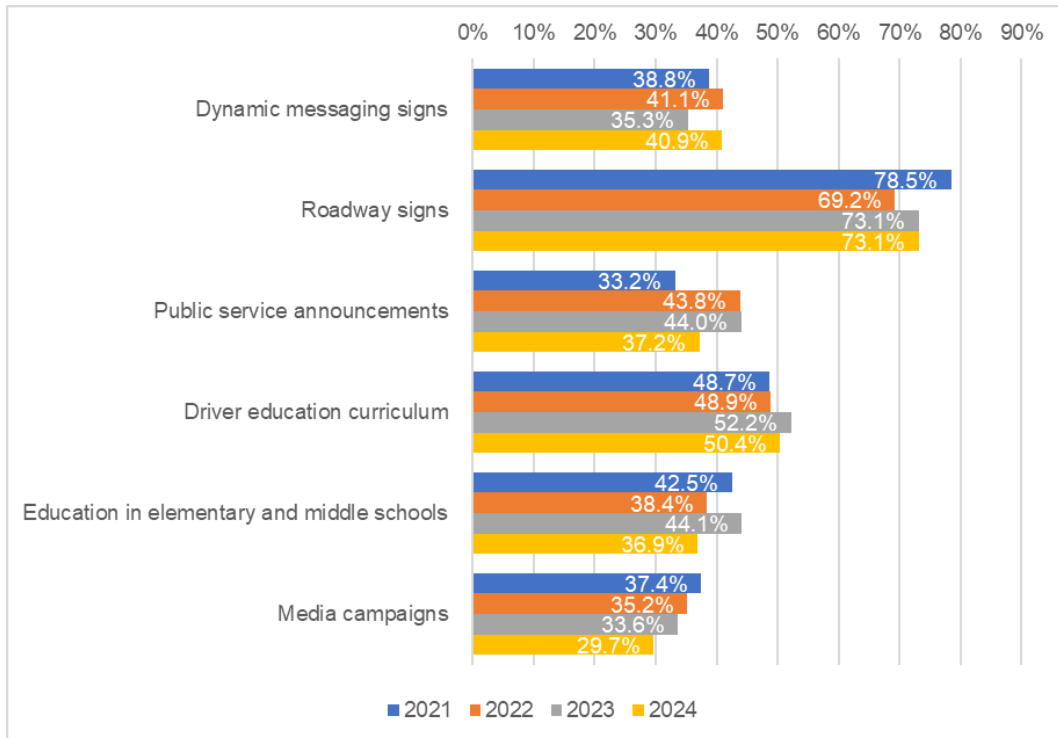
Figure 35. Educational Methods, by Year.

Knowledge Questions

Figure 36 shows the percentage of respondents that correctly answered the true/false knowledge questions about pedestrian and bicycle safety laws. The responses have remained fairly consistent across the four years, with some minor changes. In 2024, one noticeable change was in the percentage of respondents that incorrectly agreed with the statement "the pedestrian always has the right-of-way."
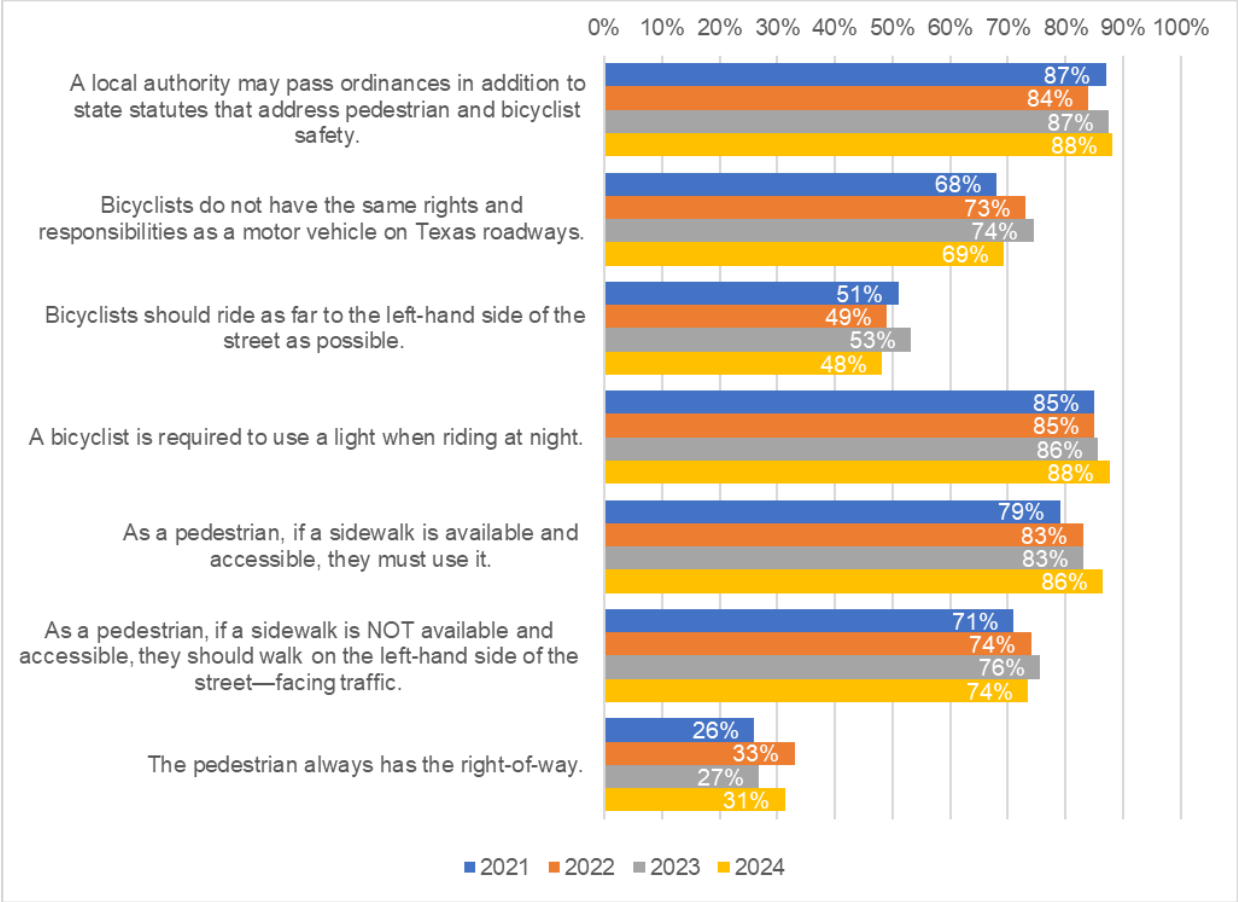
Figure 36. Knowledge of Laws, by Year.

This is the second year that respondents have been asked about their familiarity with the new stop and yield law, which was part of the Lisa Torry Smith Act. As Figure 37 shows, there has been a small uptick in reported familiarity with this law, from **42.0 percent** in 2023 to **44.4 percent** in 2024.

Figure 38 shows the percentage of respondents that correctly identified different types of crosswalks, by year. In 2024, **38.4 percent** of respondents correctly identified all the marked crosswalks, which is lower than the **42.9 percent** in 2023. While less than **5 percent** of respondents correctly identified all pictures as containing crosswalks, 2024 was the highest percentage so far.
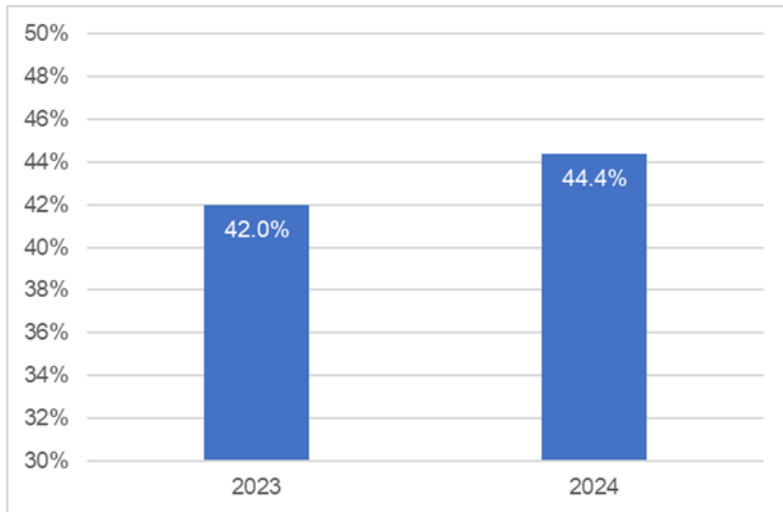
Figure 37. Familiarity with the Stop and Yield Law, by Year.
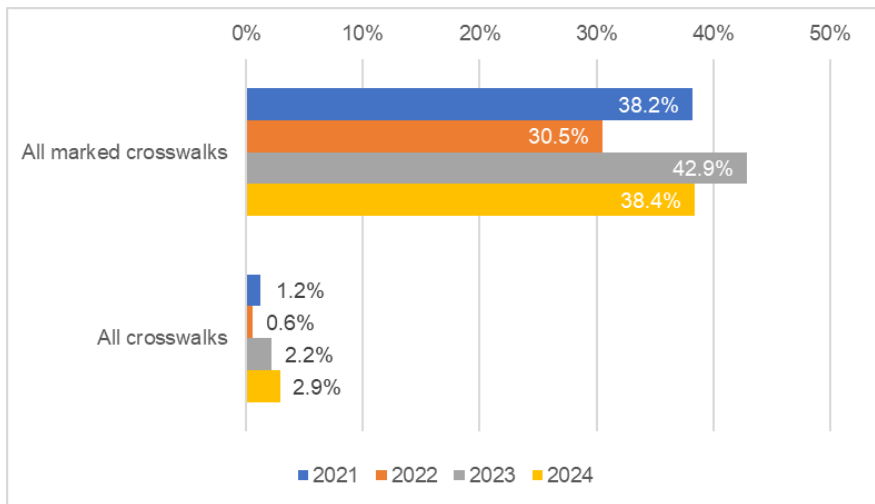
Figure 38. Crosswalk Identification, by Year.

Appendix A: Pedestrian and Bicycle Safety—2024 Survey

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 a Texas resident and 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. You may also contact the Human Research Protection Program at Texas A&M University at 1-855-795-8636 or 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.

Q1 What is your zip code?

_____

Q2 Which best describes the area where you live?

- Rural
- Small town
- Medium-size city
- Suburb
- Large city

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 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
- More than one race
- Other (please specify): _____
- Prefer not to state

Q6 What is your highest level of education?

- Less than high school
- Grade 12 or GED (high school graduate)
- College 1 to 3 years, no degree
- Associate degree (for example: AA, AS)
- Bachelor's degree (for example: BA, BS)
- Postgraduate degree (MA, MBA, PhD, MD, etc.)
- Prefer not to state

Q7 Approximately how many hours of television do you watch on an average day?

_____

Q8 In a typical week, about how many hours do you spend on the internet for personal use?

_____

Q9 Do you usually try new products before other people do?

- Always
- Often
- Sometimes
- Never

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

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

Q11 What are the primary reasons you walk? Select all that apply.

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

Q12 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?					

Q13 How often are the following pedestrian safety features found along the roads near where you live?

	No Locations	Less than Half of Locations	About Half of Locations	More Than Half of Locations	All Locations
Pedestrian crossing signals					
Sidewalks					
Street lighting/illumination					
Marked crosswalks at intersections					

Q14 Are there safe ways to cross higher-speed roads as a pedestrian where you live?

- Yes, at all locations
- Yes, at some locations
- No
- Unsure (i.e., I haven't looked to see)
- Not applicable (i.e., there are no higher-speed roads where I live)

Q15 (If yes) Are the crossings convenient to use?

- Yes
- No

Q16 How often do you ride a bicycle?

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

Q17 What are the primary reasons you ride a bicycle? Select all that apply.

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

Q18 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?					

Q19 How often are the following bicycle safety features found along the roads near where you live?

	No Locations	Less than Half of Locations	About Half of Locations	More Than Half of Locations	All Locations
Separate spaces for bicyclist use, including bike lanes, trails/paths, paved shoulder, etc.					
Street lighting/illumination					

Q20 Are there safe ways to cross higher-speed roads as a bicyclist where you live?

- Yes, at all locations
- Yes, at some locations
- No
- Unsure (i.e., I haven't looked to see)
- Not applicable (i.e., there are no higher-speed roads where I live)

Q21 (If yes) Are the crossings convenient to use?

- Yes
- No

Q22 Drag and drop each option to tell us if this is or is not an obstacle to you walking more often.

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

Q23 Drag and drop each option to tell us if this is or is not an obstacle to you biking more often.

Obstacle	Not an Obstacle
_____ Time to get to destination	_____ Time to get to destination
_____ Lack of convenience (e.g., easier to drive)	_____ Lack of convenience (e.g., easier to drive)
_____ Poor weather (e.g., temperature, rain)	_____ Poor weather (e.g., temperature, rain)
_____ Lack of bike lanes/trails	_____ Lack of bike lanes/trails
_____ Lack of crossing signals/signs	_____ Lack of crossing signals/signs
_____ Poor lighting (e.g., no lights, lights not working)	_____ Poor lighting (e.g., no lights, lights not working)
_____ Poor roadway/sidewalk conditions (e.g., potholes)	_____ Poor roadway/sidewalk conditions (e.g., potholes)
_____ Driver behavior	_____ Driver behavior
_____ Other sidewalk users	_____ Other sidewalk users
_____ Other (please specify)	_____ 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?						

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.

_____

_____

_____

_____

_____

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
A local authority may pass ordinances in addition to state statutes that address pedestrian and bicycle safety.		
Bicyclists do not have the same rights and responsibilities as a motor vehicle on Texas roadways.		
Bicyclists should ride as far to the left-hand side of the street as possible.		
A bicyclist is required to use a light when riding at night.		
As a pedestrian, if a sidewalk is available and accessible, they must use it.		
As a pedestrian, if a sidewalk is NOT available and accessible, they should walk on the left-hand side of the street—facing traffic.		
The pedestrian always has the right-of-way.		

Q30 Are you aware of the new Texas law (effective September 2021) requiring drivers to both <u>stop and yield</u> to pedestrians or other vulnerable road users using a crosswalk (i.e., the Lisa Torry Smith Act)?

- Yes

- No

- Not sure

Q31 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

A
☐

B
☐

C
☐

D
☐
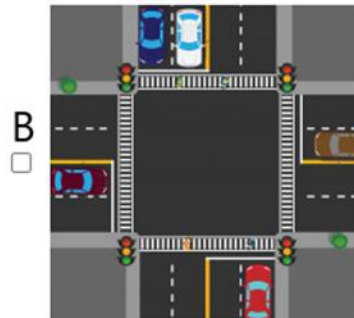
Appendix B: Weighting Methodology Report—Texas Pedestrian Survey 2024

Design Overview

This survey has secured a total of 401 adult respondents 18 years old or older residing in Texas, using various online panels for sample selection and survey administration.

Weighting

All survey data must be weighted before they can be used to produce reliable estimates of population parameters. While reflecting the selection probabilities of sampled units, weighting also attempts to compensate for practical limitations of sample surveys, such as differential nonresponse and under coverage. The weighting process for this survey included three major steps, as detailed next:

1. In the first step, design weights were computed to reflect selection probabilities. Given the non-probability nature of the employed sample, all respondents were assigned a quasi-design weight of 1.
2. In the second step, design weights were adjusted to the geodemographic distributions of the target population for which the needed benchmarks were obtained from the latest *Current Population Survey* (CPS 2023). For this purpose, the *WgtAdjust* procedure of SUDAAN was used to balance the distributions of survey respondents against the various benchmarks simultaneously[1]. This procedure relies on a constrained logistic regression to predict the likelihood of response vis-à-vis the explanatory variables used in the model (benchmark distributions). The resulting likelihood probabilities are then used to create adjustment weights that align respondents to the specified benchmark distributions.
3. In the third and final step, produced 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, i.e., increasing the stability of survey estimates. This important gain in precision, however, is achieved at the expense of introducing some minor diversions between weighted distributions of respondents and their corresponding population benchmarks. In order to accommodate different analyses, two sets of weights were produced for this survey:

   o *WGT_P* aggregating to the total population of adults in Texas (22,493,545)
   o *WGT_R* aggregating to the total number of respondents (401)

It should be noted that prior to weighting, missing values for all variables needed for weighting had to be imputed. For this purpose, the *Survey Impute* procedure of SAS was used to select eligible donors based on a Hot-Deck algorithm[2]. With this method, missing values are replaced by randomly selected donors within homogeneous imputation cell. As such, all respondent counts summarized in the following tables correspond to those after imputation.

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[1] RTI International. *SUDAAN Language Manual, Release 11.0*. 2012. www.rti.org/sudaan.
[2] SAS Institute, Inc. *SAS/STAT® 14.1 User's Guide: The SURVEYIMPUTE Procedure.* 2015. https://support.sas.com/documentation/onlinedoc/stat/141/surveyimpute.pdf.

Table B-1. Population and Respondent Distributions by Gender and Age.

Age	Males				Females			
	Population		Respondents		Population		Respondents	
18–24	1,501,222	13.5%	25	13.2%	1,490,354	13.1%	24	11.4%
25–34	2,186,449	19.7%	41	21.6%	2,099,322	18.4%	41	19.4%
35–44	2,102,195	19.0%	31	16.3%	2,086,976	18.3%	42	19.9%
45–54	1,866,347	16.8%	34	17.9%	1,870,134	16.4%	41	19.4%
55–64	1,639,759	14.8%	34	17.9%	1,659,848	14.6%	35	16.6%
65+	1,793,445	16.2%	25	13.2%	2,197,494	19.3%	28	13.3%
Total	11,089,417	100.0%	190	100.0%	11,404,128	100.0%	211	100.0%

Table B-2. Population and Respondent Distributions by Gender and Race-Ethnicity.

Race Ethnicity	Males				Females			
	Population		Respondents		Population		Respondents	
White	4,705,467	42.4%	94	49.5%	4,850,891	42.5%	97	46.0%
Black	1,333,502	12.0%	29	15.3%	1,469,632	12.9%	37	17.5%
Hispanic	4,154,006	37.5%	57	30.0%	4,135,637	36.3%	58	27.5%
Other	896,442	8.1%	10	5.3%	947,968	8.3%	19	9.0%
Total	11,089,417	100.0%	190	100.0%	11,404,128	100.0%	211	100.0%

Table B-3. Population and Respondent Distributions by Gender and Education.

Education	Males				Females			
	Population		Respondents		Population		Respondents	
Up to high school	4,902,296	44.2%	57	30.0%	4,315,342	37.8%	63	29.9%
College no degree	1,878,656	16.9%	36	18.9%	2,149,522	18.8%	48	22.7%
Associate degree	859,760	7.8%	22	11.6%	1,112,631	9.8%	41	19.4%
Bachelor's degree	2,229,547	20.1%	26	13.7%	2,505,062	22.0%	25	11.8%
Beyond bachelor's	1,219,158	11.0%	49	25.8%	1,321,571	11.6%	34	16.1%
Total	11,089,417	100.0%	190	100.0%	11,404,128	100.0%	211	100.0%

Variance Estimation for Weighted Data

Survey estimates can only be interpreted properly in light of their associated sampling errors. Since weighting often 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 method is *Taylor* series linearization and the second is replication. Our recommended method is linearization, which is readily accessible from several statistical software packages, including SAS and SPSS.

Approximation Method for Variance Estimation

Researchers who do not have access to special software 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 final weight of the ith respondent, the inflation due to weighting, which is commonly referred to as unequal weighting effect (UWE), can be approximated by the following equation:

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

For calculation of a confidence interval for an estimated percentage, $\hat{p}$, one can obtain the conventional variance of the given percentage and multiply it by the approximated design effect, d, and use the resulting quantity as the adjusted variance. The adjusted standard deviation for the percentage in question would be given by the following equation:

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

Subsequently, the (100-a)% confidence interval for P would be given by the following equation:

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

The overall unequal weighting effect for this survey is approximated to be 1.28.