

## Question-by-Question Justification

This attachment provides an overview of the questionnaire items to be used in this study and their relationship to study goals and traffic safety applications and countermeasures (CMs). Countermeasures developed from the information collected in this study will include trying to find effective ways to improve pedestrian and bicycle safety on the roads and better understand the needs and motivations of this population.

Questionnaire Items	Question Text	Relevance	Application
Section A: Age Screener			
A1	What is your age?	The survey is only for adults age 18 and older.	This question serves as a screener for the rest of the survey.
A2	Is there anyone living in this household who is 18 years of age or older?	Used to identify adults age 18 and older in the household.	This question serves as a screener for the rest of the survey.
Section B. Primary Mode of Transportation			
B1	What is your primary mode of transportation? By primary, we mean the way you get around most often.	New question asking the primary mode of transportation to identify those whose primary mode is walking or biking. Primary mode of transportation is different from frequency of walking or biking, which can be for transportation, exercise, or recreation.	Researchers can use this question to identify the population that uses walking or biking as their primary mode of transportation and create separate estimates for that population based on the rest of their survey responses.
B2	Why is this your primary mode of transportation? Select all that apply.	New question asking why walking or biking is the primary mode of transportation. Relates to respondent motivation for walking or biking.	Allows researchers to understand the motivation for walking or biking as a primary mode of transportation, such as affordability/availability of other options, for exercise, or because of environmental impacts of other transportation

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			modes.
Section C: Pedestrian Activity			
Walking Behavior			
C1	When was the last time you walked, jogged or ran outside, on a road, street, sidewalk, or trail for more than 5 minutes?	Key question, modified from 2012 version, asking about general walking activity.	This question asks how long it has been since the respondent last walked outside for 5 minutes or more and is used as a screener for later questions about walking.
C2	How much do you agree or disagree with the following statement? <i>I would like to walk more than I do now.</i>	Adaptation of Q86 from 2012, modified to adapt to Dr. Jennifer Dill's Bicyclist Typology Scale. <sup>1</sup>	The results of this question will allow researchers to align walking behavior with bicycling behavior following an established Bicycle Typology Scale to better understand walking and bicycling behavior and potential.
C3	Below are some common reasons people don't walk, jog, or run outside at all or may have stopped. Which of these reasons apply to you? Select all that apply.	Adaptation of Q87 and Q3 from 2012 covering reasons a respondent has not recently walked outside. It will identify deterrents to walking.	This question will identify potential factors to address in encouraging walking and bicycling in support of a healthy lifestyle.
C4	On average, how often do you walk, jog, or run outside for more than 5 minutes?	Adaptation of Q52 from 2012. This question has been modified to a frequency scale instead of the number of days in the previous 30 days. For those	This will establish a baseline for the respondent's walking behavior, which will be used to extrapolate participation statistics.

<sup>1</sup> Dill, Jennifer, "Four Types of Cyclists? Examining a Typology to Better Understand Bicycling Behavior and Potential." Submitted for Presentation and Publication at the 92<sup>nd</sup> Annual Meeting of the Transportation, 11/15/2012.  
<http://www1.coe.neu.edu/~pfurth/Other%20papers/Dill%202013%204%20types%20of%20cyclists%20TRR.pdf>

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		who walked in the past year, it will establish the frequency of their walking, jogging and running.	
C5	Do you typically walk, run or jog more on the weekdays or the weekend?	Adaptation of Q53 from 2012 to ask generally about a respondent's preferred walking times.	This question will ask whether the respondent's most recent outdoor walking activity occurred during a weekday or the weekend. The amount and type of walking is expected to differ between these segments of the week.
C6	During what time of day do you walk, jog, or run outside the most?	New question about a respondent's preferred walking times, with sunlight factored in. This is an important measure as motorists may have difficulty seeing pedestrian in the evening hours unless pedestrians take steps to increase their visibility.	The amount and type of walking is expected to differ between different times of day and based on the presence of sunlight. This may inform countermeasures based on time of day, especially given the fact that many collisions occur in the evening/night-time hours.
C7	How often do you walk, run or jog outdoors in the following seasons?	New question exploring the seasonality of pedestrian activity. The 2012 survey only covered activities in the summer months and researchers are interested to know how these	This question asks how often the respondent walks outside during each season, which may inform programming and countermeasures based on time of year or geography.

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		activities change throughout the year.	
C8	On a typical day during the months that you walk, about how long do you walk? Don't count any stops – just the average amount of time you walk.	New question that adapts the bicycle equivalent Q28-29 from 2012. This question asks the average amount of time the respondent spends walking on a typical day when they walk.	This question provides a measure of usual exposure as a pedestrian experienced by the respondent.
C10	Compared to about a year ago, would you say you are now walking more often, less often or about the same amount?	Equivalent of Q73 from 2012. This question asks respondents to compare their current walking frequency to their frequency of walking a year ago.	This question will allow direct comparison to 2012 measures to look at change at the individual level.
C11	What are the main reasons you walk? Select all that apply	Adaptation of Q55 from 2012, changed to a more general question as opposed to a specific trip loop. Addresses primary motivations for engaging in walking activity.	Main question addressing individual motivations and reasons for engaging in walking, jogging and running behavior.
C12	How often do you walk, jog, or run with others compared to walking alone?	Equivalent of Q64 from 2012, asking whether respondents tend to walk alone or with others.	There may be safety and health benefits to walking in groups. This question will allow researchers to determine how often pedestrians chose to walk alone versus with others.
<b>Pedestrian Facilities Usage</b>			
C13	When you walk, jog, or run how often do you use the following type of path	Adaptation of Q62 from 2012 #62, with frequency	These questions will ask about the presence,

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	or road?	scale added. Safe walking is highly dependent on the presence of sidewalks that separate pedestrians from other types of traffic while providing a surface that pedestrians normally can easily traverse.	condition, and use of sidewalks in order to assess public perceptions of the adequacy of sidewalks in their communities.
C14	What is the main reason that you don't always use sidewalks?	Adaptation of Q77 from 2012 to add one option based on 2012 "Other, specify" responses. Relates to reasons pedestrians may not use sidewalks, even when they are available.	Allows researchers to understand reasons for not using sidewalks and make necessary improvements to sidewalk conditions or other issues that prevent pedestrians from using sidewalks.
Pedestrian Crossing Signs and Devices			
A.	Pedestrian Hybrid Beacon	New question exploring pedestrian hybrid beacon use. Pedestrian hybrid beacons can reduce pedestrian crashes by 55% and are less expensive than a full traffic signal installation. <sup>2</sup>	Questions about pedestrian hybrid beacons can be used to assess pedestrians' use of and feelings toward these devices. These data can be compared for those living in types of communities.
B.	Rectangular Rapid Flashing Beacon	New question exploring rectangular rapid flashing beacon use. These devices can reduce pedestrian crashes by 47%. <sup>3</sup>	Questions about rectangular rapid flashing beacons can be used to assess pedestrians' use of and feelings toward these devices. These

<sup>2</sup> [http://www.pedbikesafe.org/pedsafe/countermeasures\\_detail.cfm?CM\\_NUM=53](http://www.pedbikesafe.org/pedsafe/countermeasures_detail.cfm?CM_NUM=53)

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			data can be compared for those living in types of communities.
C.	LED Embedded Sign	New question exploring LED embedded sign use. These devices can reduce the number of vehicles not fully stopping or slowing and reduce vehicle approach speeds, especially at night. <sup>4</sup>	Questions about LED embedded signs can be used to assess pedestrians' use of and feelings toward these devices. These data can be compared for those living in types of communities.
C15	Have you ever used this type of crossing?	New question assessing the use of different crossing devices that have been shown to reduce pedestrian crashes and vehicle approach speeds.	This question will allow researchers to assess exposure to these different crossing devices and differences in exposure across demographic or community characteristics.
C16	Did you feel it increased your safety while crossing the street?	New question assessing how people feel about different crossing devices that have been shown to reduce pedestrian crashes and vehicle approach speeds. Feeling safer crossing the street can increase walking behavior.	This question assesses whether these devices are effective in making pedestrians feel safer, which is not possible to assess in other types of studies.
C17	Regardless of whether or not you've used this type of crossing, would you ever go out of your way or change your route to use it if it was available?	New question assessing whether pedestrians prefer to use different crossing devices that have been	This question allows researchers to understand the extent to which pedestrians want to use these different

<sup>3</sup> [http://www.pedbikesafe.org/pedsafe/countermeasures\\_detail.cfm?CM\\_NUM=54](http://www.pedbikesafe.org/pedsafe/countermeasures_detail.cfm?CM_NUM=54)

<sup>4</sup> <https://rosap.ntl.bts.gov/view/dot/49231>

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		shown to reduce pedestrian crashes and vehicle approach speeds.	crossing devices and whether they would be willing to go out of their way to use them.
C18	When you are walking, jogging, or running on a roadway without a sidewalk, do you usually position yourself...?	Adaptation of Q63 from 2012. This question relates to behaviors pedestrians can use to keep themselves safe when walking in the roadway.	Pedestrians may not know whether it is safer to walk facing traffic or with traffic. This question will allow researchers to assess pedestrian knowledge of safety topics to target interventions.
Walking At Night & Illumination			
C19	During the past year, how much of your walking was done when it was dark or nearly dark outside?	Adaptation of Q68 from 2012. Motorists have great difficulty seeing pedestrians at night unless the pedestrians take steps to increase their visibility.	This is a gate item for the following question. If at least some of their walking outside occurs after dark, they are then asked the next question.
C20	When you walk, jog, or run after dark, how often do you do any of the following to make yourself more visible?	Adaptation of Q70 from 2012 with the addition of a frequency scale. This question relates to behaviors pedestrians can use to keep themselves safe when walking at night.	The responses to this question will indicate the frequency with which pedestrians are taking adequate precautions when walking at night.
Technology			
C21	Do you use a pedometer, or other activity tracking	New question about the use of	This question allows researchers

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	device (e.g., FitBit, Cell phone app) to track your physical activity?	new technologies to track activity. Activity tracking can have a positive impact on walking behaviors.	to understand the prevalence of activity tracking devices.
C22	How often do you do any of the following with your cell phone or other electronic device while walking, jogging, or running outside?	New question about pedestrian distractions from electronic devices. Distraction through use of electronic devices has been a major safety issue to emerge in the traffic safety field.	This is a new question that will provide information on distracted walking that has not previously been collected. It will allow researchers to understand the extent of the problem of distracted walking.
Accidents			
C23	In the past 12 months, were you ever injured while you were walking, running, or jogging outside?	Adaptation of Q78 from 2012; modified to one-year timeframe; modified to also include minor injuries. Addresses pedestrian injuries.	This is a gate item for the rest of the section on injuries. This will provide a national measure of injury occurring while walking.
C24	What kind of medical attention did you need for your most recent injury?	This question relates to the severity of pedestrian injuries.	This question provides researchers with information on the severity of pedestrian injuries in order to estimate the extent of the problem.
C25	What was the cause of this injury?	Adaptation of Q79-80 from 2012 to add response categories. This question relates to safety issues that	This question asks how the injury occurred. This will help researchers identify potential points of



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		can cause pedestrian injuries.	intervention.
C26	Was the incident with the motorist reported to the police?	New question addressing the prevalence of underreporting of pedestrian crashes.	This question can supplement police reports of pedestrian/motorist crashes to help researchers understand the extent of underreporting and develop more accurate estimates of pedestrian/motorist crashes.
C27	Was distraction from a cell phone a factor in the cause of the injury?	New question related to distractions from technology. This question asks which parties were distracted.	This can help researchers understand the extent to which distraction from cell phones (both from pedestrians and motorists) is related to pedestrian crashes.
Threats			
C28	Below is a list of situations that can make walkers, joggers, and runners feel threatened for their personal safety. Have you ever felt threatened for your personal safety when you are walking, jogging, or running outside because of any of the following?	Adaptation of Q66-67 from 2012. This question poses different scenarios that may make pedestrians feel unsafe.	This question asks about the presence of threats to personal safety when walking. This will provide information on the extent to which pedestrians experience threats to personal safety and identify potential targets

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			for safety intervention.
Crosswalks and Sidewalks			
C29	Do drivers in your community usually yield to pedestrians in crosswalks?	Equivalent of Q85 from 2012. This question addresses driver practices at crosswalks as they relate to pedestrians.	Researchers can use this question to compare driver behavior in different communities or compare walking behavior based on whether drivers tend to yield to pedestrians.
C30	Are there sidewalks in your neighborhood...	Equivalent of Q74 from 2012. Safe walking is highly dependent on the presence of sidewalks that separate pedestrians from other types of traffic while providing a surface that pedestrians normally can easily traverse.	This is a gate question for further questions about the availability and use of sidewalks.
C31	In what condition are these sidewalks? Are they in excellent, good, fair, or poor condition?	Equivalent of Q75 from 2012. The ability of pedestrians to use sidewalks, which increase safety, depends on the condition of the sidewalks in their community.	This question allows researchers to assess public perceptions of the adequacy of sidewalks in their communities.
C32	How satisfied are you with how your local community is designed for making walking safe?	Equivalent of Q81 from 2012. This question will obtain information on the	Researchers can use this data to understand pedestrian

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	Are you . . . ?	public's overall assessment of their community facilities for pedestrians.	satisfaction with their community's safety initiatives and understand where changes need to be made.
C33	What changes, if any, would you like to see your local government make in your community for pedestrians? Select all that apply.	Adaptation of Q82 from 2012; added one option based on 2012 open-ended responses. This question relates to safety improvements pedestrians want in their communities.	This question will allow policymakers to understand what pedestrians want to change in their communities to make walking safer.
Impairment			
C34	Have you ever walked along a public street while impaired due to drinking alcohol or using substances?	New question related to substance use and walking. Walking while impaired can be a major safety issue that many pedestrians may not recognize.	Allows researchers to understand the extent to which pedestrians walk while impaired.
C35	Why have you walked along a public street while impaired due to drinking alcohol or using substances? Select all that apply.	New question related to reasons for walking while impaired.	This question will allow researchers to understand the behavior of pedestrians who walk while impaired and target interventions to prevent this behavior.
C36	If you were too impaired to drive due to drinking or using substances, couldn't use public	New question related to transportation behaviors while	This question asks what respondents would do if they were too impaired

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	transit, and had to travel several miles, how likely would you be to choose the following options?	impaired.	to drive. This information can be used by researchers to understand common transportation behaviors among people who are impaired due to alcohol or drugs.
Section D: Bicycle Activity			
Bicycle Riding Behavior			
D1	When was the last time you rode a bicycle on a road, street, sidewalk, or trail? Do not include stationary bikes.	Key question, modified from 2012 version, asking about general biking activity	This question asks how long it has been since the respondent last rode a bicycle, and is used as a screener for later bicycle use questions.
D2	How much do you agree or disagree with the following statement? <i>I would like to travel by bike more than I do now.</i>	Adaptation of Q86 from 2012, modified to adapt to Dr. Jennifer Dill's Bicyclist Typology Scale. <sup>5</sup>	The results of this question will allow researchers to align bicycling behavior to an established Bicycle Typology Scale to better understand bicycling behavior and potential.
D3	Below are some common reasons people don't ride a bicycle or may have stopped. Which of these reasons apply to you? Select all that apply.	Adaptation of Q2 and Q3 from 2012 covering reasons a respondent has not recently ridden a bicycle. It will identify deterrents to biking.	This question asks about the most important reason they do not bicycle as much as they would like. This will identify potential factors to address in encouraging walking and bicycling in support

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			of a healthy lifestyle.
D4	On average, how often do you ride?	Adaptation of Q4 and Q27 from 2012. This question has been modified to a frequency scale instead of the number of days in the previous 30 days. For those who biked in the past year, it will establish the frequency of their biking.	The biking frequency serves both as a screener to enter the rest of the module and to establish a baseline for the respondent's biking behavior, which will be used to extrapolate participation statistics.
D5	Do you typically ride more on the weekdays or the weekend?	Adaptation of Q5 from 2012 to ask generally about a respondent's preferred biking times.	This question will ask whether the respondent's most recent bicycling activity occurred during a weekday or the weekend. The amount and type of bicycling is expected to differ between these segments of the week.
D6	During what time of day do you ride the most?	New question about a respondent's preferred biking times, with sunlight factored in. This is an important measure as motorists may have difficulty seeing cyclists in the evening hours unless they take steps to increase their visibility.	The amount and type of biking is expected to differ between different times of day and based on the presence of sunlight. This may inform countermeasures based on time of day, especially given the fact that many collisions occur in the evening/night-time hours.
D7	How often do you ride a	New question	This question asks

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	bike outdoors in the following seasons?	exploring the seasonality of biking activity. The 2012 survey only covered activities in the summer months and researchers are interested to know how these activities change throughout the year.	how often the respondent bikes during each season, which may inform programming and countermeasures based on time of year or geography.
D8	On a typical day that you ride a bicycle, about how long do you ride? Don't count any stops – just the average amount of time you travel on your bike.	Adaptation combining Q28-29 from 2012. This question asks the average amount of time the respondent spends biking on a typical day when they bike.	This question provides a measure of usual exposure as a cyclist experienced by the respondent.
D9	Compared to about a year ago, would you say you are now riding a bike more often, less often or about the same amount?	Equivalent of Q30 from 2012. This question asks respondents to compare their current biking frequency to their frequency of biking a year ago.	This question will allow direct comparison to 2012 measures to look at change at the individual level.
D10	What are the main reasons you ride a bike? Select all that apply.	Adaptation of Q7 from 2012, changed to a more general question as opposed to a specific trip loop. Addresses primary motivations for engaging in biking activity.	Main question addressing individual motivations and reasons for engaging in biking behavior.
D11	How often do you ride with others compared to riding alone?	Equivalent of Q16 from 2012, asking whether respondents tend to bike alone or	There may be safety and health benefits to biking in groups. This question will allow

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		with others.	researchers to determine how often cyclists chose to bike alone versus with others.
<b>Bicycle facility usage and level of comfort</b>			
D12	Are bike lanes, that is, marked lanes on a public road reserved for bikes to travel, available within a quarter mile, or about 3 blocks, from where you live?	Equivalent of Q34 from 2012. Bike lanes increase the safety of cyclists.	Assesses the availability of bike lanes and allows for comparisons of other questions based on whether or not bike lanes are available.
D13	How comfortable or uncomfortable would you feel biking in the following places?	New questions based on Dr. Jennifer Dill's Bicyclist Typology Scale. <sup>6</sup>	The results of this question will allow researchers to align survey results with an established Bicycle Typology Scale to better understand bicycling behavior and potential.
D14	When you bike, how often do you use the following ...?	Adaptation of Q14 from 2012 with modified response options and an added frequency scale.	Assesses how often cyclists use different types of biking facilities. Allows researchers to understand bike facility use and preferences.
D15	Regardless of whether or not you've used any of these facilities, would you ever go out of your way or change your route to bike on them if they were available?	New question on preferences for different types of biking facilities.	This question allows researchers to understand the desirability of certain types of biking facilities.
<b>Accidents and injuries</b>			
D16	In the past 12 months, were you ever injured while you were riding a bike	Adaptation of Q38 from 2012; modified to one-year timeframe;	This is a gate item for the rest of the section on injuries. This will provide a

<sup>6</sup> Dill, Jennifer, "Four Types of Cyclists? Examining a Typology to Better Understand Bicycling Behavior and Potential." Submitted for Presentation and Publication at the 92<sup>nd</sup> Annual Meeting of the Transportation, 11/15/2012.  
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		modified to also include minor injuries. Addresses cyclist injuries.	national measure of injury occurring while biking.
D17	What kind of medical attention did you need for your most recent injury?	This new question relates to the severity of biking injuries.	This question provides researchers with information on the severity of biking injuries in order to estimate the extent of the problem.
D18	What was the cause of this injury?	Adaptation of Q39-40 from 2012 to add response categories. This question relates to safety issues that can cause biking injuries.	This question asks how the injury occurred. This will help researchers identify potential points of intervention.
D19	Was the incident with the motorist reported to the police?	New question addressing the prevalence of underreporting of bicycle crashes.	This question can supplement police reports of cyclist/motorist crashes to help researchers understand the extent of underreporting and develop more accurate estimates of cyclist/motorist crashes.
D20	Was distraction from a cell phone a factor in the cause of the injury?	New question related to distractions from technology. This question asks which parties were distracted.	This can help researchers understand the extent to which distraction from cell phones (both from cyclists and motorists) is related to bicycle crashes.
Riding at night & illumination			
D21	During the past year, how much of your biking was done when it was dark or nearly dark outside?	Adaptation of Q23 from 2012. Motorists have great difficulty	This is a gate item for the following question. If at least some of their



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		seeing cyclists at night unless the cyclist takes steps to increase their visibility.	biking outside occurs after dark, they are then asked the next question.
D22	When you ride after dark, how often do you do any of the following to make yourself more visible?	Adaptation of Q25 from 2012 with the addition of a frequency scale. This question relates to behaviors cyclists can use to keep themselves safe when biking at night.	The responses to this question will indicate the frequency with which cyclists are taking adequate precautions when biking at night.
Technology			
D23	How often do you do any of the following with your cell phone or other electronic device while on the bike?	New question about cyclist distractions from electronic devices. Distraction through use of electronic devices has been a major safety issue to emerge in the traffic safety field.	This is a new question that will provide information on distracted biking that has not previously been collected. It will allow researchers to understand the extent of the problem of distracted biking.
D24	When you're doing these things, do you usually hold the electronic device in your hand?	New question asking about technology use behaviors while biking. Holding a device in one's hand while biking is more dangerous than using a device in other ways, such as a mounted GPS, or listening to music with	This is a new question that will provide information on distracted biking that has not previously been collected. It will allow researchers to understand the extent of the problem of distracted biking.

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		headphones.	
Threats			
D25	How confident do you feel navigating a bicycle in the following types of situations?	New question asking about cyclist confidence in potentially dangerous situations.	This question can be used to classify cyclists by their confidence levels.
D26	When riding your bike in the road, do you mostly ride. . .?	Adaptation of Q15 from 2012. This question relates to behaviors cyclists can use to keep themselves safe when biking in the roadway.	Cyclists may not know whether it is safer to bike facing traffic or with traffic. This question will allow researchers to assess cyclist knowledge of safety topics to target interventions.
D27	When you are bicycling, how often do you have to change your route because of obstacles, road environment or condition, or other problems?	Adaptation of Q37 from 2012. This question relates to hazards encountered when biking.	Researchers can use this data to understand major issues facing cyclists in regard to safety hazards.
D28	What types of obstacles would cause you to change your route? Select all that apply.	Expansion of Q37 from 2012; modified to remove frequency scale. This question relates to potential hazards that would cause cyclists to have to change their route.	Researchers can use this data to understand major issues facing cyclists in regard to safety hazards.
D29	Below is a list of some situations that can make bicyclists feel threatened for their personal safety. Have you felt threatened for your personal safety when you are riding your bike because of any of the following?	Adaptation combining Q18-19 from 2012. This question relates to other threats that cyclists may encounter.	This question allows researchers to analyze the extent to which cyclists face certain threats.

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Community			
D30	How satisfied are you with how your local community is designed for making bike riding safe?	Equivalent of Q45 from 2012. This question will obtain information on the public's overall assessment of their community facilities for cyclists.	Researchers can use this data to understand cyclist satisfaction with their community's bike safety initiatives and understand where changes need to be made.
D31	What changes, if any, would you like to see your local government make in your community for bicyclists?	Adaptation of Q46 from 2012; modified response options based on 2012 open-ended responses. This question relates to safety improvements cyclists want in their communities.	This question will allow policymakers to understand what cyclists want to change in their communities to make biking safer.
Helmets and Laws			
D32	When riding a bike, how often do you wear a helmet?	Equivalent of Q41 from 2012. A helmet is the single most effective way to prevent head injury resulting from a bicycle crash. Yet despite the fact that a majority of all fatal bicycle crashes involve head injuries, only a minority of bicyclists wears bicycle helmets according to the last figures available.	This question and the follow-up questions will obtain information to help NHTSA and other safety organizations address the non-use problem by asking respondents about their use of bicycle helmets.
D33	Below are some reasons people don't wear bike helmets every time they ride. Are any of these true for you?	Adaptation of Q42 from 2012 with the list of response options shortened to include top	This question will help researchers identify key reasons for non-use of helmets in order

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		options from 2012. Relates to reasons for not using helmets.	to target safety interventions.
D34	Is there a law or ordinance in your state, city, or county that requires adults and/or children to wear a helmet when riding a bike?	Equivalent of Q47 from 2012. Legislation and enforcement often are key components of traffic safety programs. But the public must have some knowledge about the laws for them to have any effect.	This question and the follow-up questions will examine respondents' awareness of bicycle helmet laws in their localities, and towards whom they believe the laws apply.
D35	Does this law require all bicyclists, or only children, to wear helmets?	Equivalent of Q49 from 2012. Legislation and enforcement often are key components of traffic safety programs. But the public must have some knowledge about the laws for them to have any effect.	Allows researchers to understand public understanding of helmet laws.
D36	Do you favor or oppose laws that require children to wear helmets whenever they ride a bike	Equivalent of Q50 from 2012. Relates to bike safety in regard to helmet laws.	This question will be used to determine the level of public support for laws that require children to wear bicycle helmets.
D37	Do you favor or oppose laws that require adults to wear helmets whenever they ride a bike?	Equivalent of Q50 from 2012. Relates to bike safety in regard to helmet laws.	This question will be used to determine the level of public support for laws that require adults to wear bicycle helmets.

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D38	How do helmet laws influence your decision to wear a helmet?	New questions about the efficacy of helmet laws. Helmet laws are not consistently enforced and as such, may not be effective if they are not inducing behavior change.	Researchers can use this question to understand how effective helmet laws are in changing cyclist behaviors.
D39	In your community, are bicyclists supposed to stop at traffic lights and stop signs, like motor vehicles, or are they supposed to use their own judgment on whether they need to stop at red lights and stop signs?	Adaptation of Q83 from 2012, related to public knowledge of bike safety laws. This question asks if bicyclists are supposed to follow the same rules as motor vehicle drivers when at traffic lights and stop signs.	This question will allow researchers to understand public knowledge of the laws that bicyclists are supposed to follow.
Safety Training			
D40	The following few questions are about how people learn about bicycling safety. In the past five years, have you received any training in bicycling safety?	Equivalent of Q20 from 2012. Relates to bicycle safety training that cyclists may have received. Efforts to enhance bicycling safety include training and education.	This question and the follow-up questions explore the extent to which bicyclists have received training in bicycling safety.
D41	In the past five years, in which of the following formats have you received bicycle safety training? Select all that apply.	New question on formats in which bicycle safety training is typically received. Cyclists may receive training in a variety of formats.	This question aims to examine the prevalence of bicycle safety training in different formats.
D42	Who provided the training to you? Select all that apply.	Equivalent of Q21 from 2012. Relates to the source of training as cyclists	Researchers can use this question to understand the prevalence of

## Question-by-Question Justification

Questionnaire Items	Question Text	Relevance	Application
		may receive training in a variety of settings.	bicycle safety training in different settings.
D43	Where did you learn how to properly fit a helmet?	New question about helmet fitting. Learning to fit a bike helmet can improve bicycling safety.	Researchers can use this question to understand the extent to which adults have learned how to properly fit a bike helmet, and where they learned to fit one.
D44	If you wanted to learn about bicycling safety, where would you go or look for information?	Adaptation of Q22 from 2012 with the list of response options shortened to include top 2012 selections. Relates to where bicyclists would typically go to find information on bicycle safety.	This question can be used to understand where cyclists look for information on bicycle safety and target interventions to those sources.
Impairment			
D45	Have you ever biked along a public street while impaired due to drinking alcohol or using substances?	New question related to substance use and biking. Biking while impaired can be a major safety issue that many bicyclists may not recognize.	Allows researchers to understand the extent to which bicyclists bike while impaired.
D46	Why have you biked along a public street while impaired due to drinking alcohol or using substances?	New question related to reasons for biking while impaired.	This question will allow researchers to understand the behavior of bicyclists who bike while impaired and target interventions to prevent this behavior.
E-Bikes			
D47	Electric bikes or e-bikes are bicycles with a battery-powered “assist” that makes pedaling	New question on e-bike usage. E-bikes are an emerging topic of interest in	This question will provide new data on e-bike usage and will allow

## Question-by-Question Justification

Questionnaire Items	Question Text	Relevance	Application
	easier and gives the rider a boost. Have you ever used an e-bike (such as pictured above)? This could be one that you've rented or one that you own.	the transportation field.	researchers to understand who is using e-bikes.
D48	Why have you never used an e-bike? Select all that apply.	New question on reasons for not using an e-bike. This is a question of interest for researchers.	This question will provide new data on why people may not be using e-bikes. This can allow researchers to understand and address common issues with e-bike usage.
Empathy			
D49	Do you have friends or family members who ride bicycles?	New question about whether the respondent has friends or family who ride bikes. This question is related to empathy for bike riders.	This question can be used in analysis to understand whether having family or friends who ride bikes increases safe motorist behaviors around bicyclists.
D50	How often do you drive a motor vehicle? Almost every day, a few days a week, a few days a month, a few days a year, or do you never drive?	Equivalent of Q109 from 2012. This question is related to driving behavior, which can impact walking/biking behaviors.	This question can be used to assess motor vehicle access and how it relates to the walking and bicycling issues investigated in the survey and will be used as a gate item to the driver empathy questions.
D51	How many licensed motor vehicles are owned, leased, or available for regular use by members of your household?	Equivalent of Q110 from 2012. This question is related to driving behavior, which can impact walking/biking behaviors.	This question can be used to assess motor vehicle access and how it relates to the walking and bicycling issues investigated in the survey.

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Questionnaire Items	Question Text	Relevance	Application
D52	People don't always pay close attention to bicyclists on the road, for many reasons. When you're driving a motor vehicle, how often do you do any of the following?	New question assessing motorist behaviors that may impact the safety of cyclists and pedestrians.	Researchers can use this question to understand the behavior of motorists and estimate the prevalence of positive safety behaviors.
D53	Do you agree, disagree, or neither agree nor disagree with the following statements?	Adaptation of Q86 from 2012 to be answered by all. This question is related to motorist opinions of cyclists sharing the road with motorists, as well as other opinions about biking and walking while impaired.	This item will be used to assess the public's level of acceptance of bicyclists sharing the road with motorists.
Section E: E-Scooters			
E1	Electric scooters or E-scooters are scooters that you stand or sit on and are powered by an electric motor. Do you think e-scooters are a safe mode of transportation...?	New question on e-scooters. E-scooters are an emerging topic of interest for transportation researchers. They impact sidewalk and road safety.	This question will allow researchers to assess public perception of the safety of e-scooters for adults and children.
E2	Have you ever used an e-scooter? This could be one that you rented (e.g. Lime, Bird, etc.) or one that you've purchased.	New question on e-scooter usage. As an emerging mode of transportation, there is little data on the use of e-scooters.	This question will provide researchers with new data on e-scooter usage.
E3	Why haven't you used an e-scooter?	New question on reasons for not using e-scooters.	This question will provide new data on why people may not be using e-scooters. This can allow researchers to understand and address common issues with e-scooter usage.



## Question-by-Question Justification

Questionnaire Items	Question Text	Relevance	Application
E4	In which of the following places do you commonly ride an e-scooter? Select all that apply.	New question on where e-scooters are used. Riding e-scooters on the sidewalk can be dangerous for public safety, but many people who are riding them do not have experience or feel comfortable riding in the road.	This question will provide new data on where people commonly ride e-scooters. There is not currently much data available on this topic, so this will allow researchers to understand the behaviors of e-scooter riders.
E5	When riding an e-scooter, how often do you wear a helmet?	New question on helmet use among e-scooter riders. E-scooters can be dangerous but most casual riders do not have a helmet available.	This question will provide new data on the helmet-wearing habits of e-scooter riders. There is not currently much data available on this topic, so this will allow researchers to understand the behaviors of e-scooter riders.
E6	In the past two years, were you ever injured while you were riding an e-scooter?	New question on injuries related to e-scooter use.	This question will provide new data on the prevalence of e-scooter injuries. There is not currently much data available on this topic, so this will allow researchers to understand the behaviors of e-scooter riders.
Attitudes & Opinions			
Section F: Children Walking/Biking			
F1	How many children, less than 16 years of age, currently reside in your	Equivalent of Q93 from 2012. This question relates to	This question will ask the number of children in the

## Question-by-Question Justification

Questionnaire Items	Question Text	Relevance	Application
	household? Please do not count students living away from home or boarders.	children's walking and biking habits.	household. It will be used both as a variable for demographic comparisons of data collected by other survey items as well as a screener for ensuing questions in this module.
F2	How old is [the/the oldest] child residing in your household?	Equivalent of Q95 from 2012. This question will obtain the age of the oldest child in the household.	The oldest child in the household will be the referent for the following child bicycling questions, allowing those data to be analyzed by children's ages.
F3	On average, how often does this child ride a bicycle?	Adaptation of Q96 from 2012; adapted to mirror adult question at the beginning of the bicycling behavior section.	This question will ask how often the child rides a bicycle, providing a frequency measure of child bicycling behavior.
F4	When riding a bicycle, does this child wear a helmet for . . .	Equivalent of Q97 from 2012. This question will obtain the frequency that the respondent's oldest child wears a helmet when riding a bicycle	This question allows researchers to assess the prevalence of child helmet-wearing behavior.
F5_INT. F5	The following few questions are about how this child learned about bicycling safety. F5. In the past five years, has this child received any training in bicycling safety from someone outside the household?	New question about child bicycle safety training. Efforts to enhance bicycling safety include training and education.	This question and the follow-up questions explore the extent to which children have received training in bicycling safety.
F6	In the past five years, in	New question on	This question aims

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Questionnaire Items	Question Text	Relevance	Application
	which of the following formats did the child receive this bicycle safety training? Select all that apply.	formats in which child bicycle safety training is typically received. Children may receive training in a variety of formats.	to examine the prevalence of child bicycle safety training in different formats.
F7	Who provided the training to the child? Select all that apply.	New question on the source of child bicycle safety training as children may receive training in a variety of settings.	Researchers can use this question to understand the prevalence of child bicycle safety training in different settings.
Section G: Neighborhood Characteristics			
G1_INT.	Now, we want to ask a few questions about the area where you live. These next few questions are about your general travel habits. We are interested in all the ways you get around, including commuting for work, visiting friends, going to the grocery store, etc.		The first of these questions will ask how easy or difficult it is for respondents to travel to the places in their community that they want to go. If the respondents say it is difficult or depends on where they are departing from, they will be asked what places they find it more difficult to travel from. If responses to either of those two questions indicate some difficulty traveling, then respondents

## Question-by-Question Justification

Questionnaire Items	Question Text	Relevance	Application
			will be asked the reasons why it is difficult to travel to where they want to go. A particular interest of this question series is to combine it with responses to the disability section to assess difficulties in transportation access among people with disabilities.
G1	In general, how easy or difficult is it for you to travel to the places in your COMMUNITY where you want to go? Do not include out of town travel. Would you say it is...	Equivalent of Q113 from 2012, related to the difficulty of getting around within the respondent's own community.	This question will help assess disparities in accessibility, such as among different types of communities, different demographics, and people with disabilities.
G2	Where in your community do you find it more difficult to travel to? Select all that apply.	Adaptation of Q114 from 2012 to multiple choice; top answer option from 2012 open-ended added. Relates to accessibility of key places in the community.	This question will help assess disparities in ease of transportation, such as among different types of communities, different demographics, and people with disabilities. It allows researchers to understand the different places that are inaccessible.
G3	What are the reasons it is difficult for you to travel to the places in your community where you want to go? Select all that apply.	Adaptation of Q115 from 2012 to multiple choice; top answer options from 2012 open-ended added.	This question will help assess disparities in ease of transportation, such as among different types of

## Question-by-Question Justification

Questionnaire Items	Question Text	Relevance	Application
		Relates to reasons why places in the community may be inaccessible.	communities, different demographics, and people with disabilities. It allows researchers to understand why certain places in the community may have barriers to accessibility.
G4	These next questions ask about the area that is within a quarter mile, or about 3 blocks, around where you live. Are there any of the following within $\frac{1}{4}$ mile of where you live?	Equivalent of Q99 from 2012. Relates to urbanicity.	This question can be used to compare key measures from the survey across different urbanities.
Section H: Demographics			
	These final questions ask for information about you and your household. These questions are for classification purposes only. It is important that we collect this information so that we can report information about specific groups of people.		
H1	Do you currently own or rent your home?	New question on type of residence.	This question will ask the type of residence in which the respondent resides in order to assess how this relates to walking and bicycling behavior.
H2	Including yourself, how many persons age 16 and older live in your household?	Equivalent of Q118 from 2012, related to household size.	This question can be used to compare key measures from the

## Question-by-Question Justification

Questionnaire Items	Question Text	Relevance	Application
			survey across different household sizes.
H3	What is your age?	Adaptation of Q100-101 from 2012 to ask open-ended age.	This question can be used to compare key measures from the survey across different age groups.
H4	What is your gender?	Adaptation of QSA3 2012 to directly ask the respondent their gender.	This question can be used to compare key measures from the survey across different genders.
H5	What is your current employment status? Select all that apply.	Equivalent of Q102 from 2012, related to employment status.	This question can be used to compare key measures from the survey by employment status.
H6	Do you work from home?	New question on working from home; working from home may affect walking or biking behavior because of the lack of commute.	This question can be used to compare key measures from the survey by work-from-home status.
H7	Some employers and schools offer incentives to encourage walking, biking, or other physical activity, such as reducing insurance premiums or offering prizes for participants that log a given number of weekly steps or minutes of activity. Does your employer or school offer this type of incentive program?	New question on employee incentive programs offered by employers or schools.	Provides new data on the prevalence of employer/school incentive programs.
H8	Did you participate in this	New question on	Assesses the

## Question-by-Question Justification

Questionnaire Items	Question Text	Relevance	Application
	program?	participation in employee incentive programs offered by employers or schools.	extent to which individuals participate in offered employer/school incentive programs.
H9	If such a program was offered, would you participate?	New question on participation in employee incentive programs offered by employers or schools.	Assesses willingness to participate in employer/school incentive programs.
H10	What impact did the program have on you?	New question on the impact of employee incentive programs offered by employers or schools.	Assesses perceived efficacy of employer/school incentive programs.
H11	What is the highest grade or year of school you have completed?	Adaptation of Q103 from 2012 to multiple choice; more granular <High School options removed.	This question can be used to compare key measures from the survey across different education levels.
H12	Are you of Hispanic, Latino, or Spanish origin?	Equivalent of Q104 from 2012, related to ethnicity.	This question can be used to compare key measures from the survey across different ethnicities.
H13	Which of the following racial categories describes you? Select all that apply.	Equivalent of Q105 from 2012, related to race.	This question can be used to compare key measures from the survey across different racial groups.
H14	Which of the following categories best describes your total household income before taxes in 2021? Your best estimate is fine. Would it be...?	Adaptation of Q107 from 2012; adjusted income categories to map to 150% of the Federal Poverty Line.	This question can be used to compare key measures from the survey across different income levels and by poverty status.

## Question-by-Question Justification

Questionnaire Items	Question Text	Relevance	Application
Section I: Disability			
	These last few questions ask about different types of physical and mental impairments or disabilities that you may have. We ask about these to better understand how people with disabilities and mobility limitations get around and how public roads and sidewalks can be safer for everyone.		
I1	Are you deaf or do you have serious difficulty hearing	Adaptation of Q111 from 2012; new disability series pulled from the American Community Survey.	This question can be used to compare key measures from the survey for those with a hearing disability.
I2	Are you blind or do you have serious difficulty seeing even when wearing glasses?	Adaptation of Q111 from 2012; new disability series pulled from the American Community Survey.	This question can be used to compare key measures from the survey for those with a vision disability.
I3	Do you have serious difficulty walking or climbing stairs?	Adaptation of Q111 from 2012; new disability series pulled from the American Community Survey.	This question can be used to compare key measures from the survey for those with a physical disability that limits mobility.
I4	Because of a physical, mental, or emotional condition, do you have difficulty doing errands alone such as visiting a doctor's office or shopping?	Adaptation of Q111 from 2012; new disability series pulled from the American Community Survey.	This question can be used to compare key measures from the survey for those with a disability that limits independent activities.
	Do you use special	Adaptation of Q112	This information



## Question-by-Question Justification

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Questionnaire Items	Question Text	Relevance	Application
15	equipment or an assistive device to help you get around?	from 2012 with expanded answer options; related to assistive device use.	will help with the interpretation of other responses to the survey regarding mobility issues.
16	Are there additional accommodations that you wish you had, or you wish were available in the places you go, to increase your safety and comfort?	New question that provides respondents with a disability the option to provide open-ended feedback on accessibility in their community.	This question provides open-ended data on potential improvements to the safety and comfort of individuals with disabilities.