



**RESEARCH & DEVELOPMENT**

# **NCDOT Statewide Customer Service Survey 2018-19**

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16. Abstract <p>Across North Carolina, the North Carolina Department of Transportation (NCDOT) provides transportation services for a variety of functions and uses. Customer satisfaction is identified as an NCDOT priority as part of the department's Strategic Plan. Since 2015, NCDOT has measured customer service through a statewide survey focused on asking customers about key elements of interest to the department. This survey continues to provide useful insights that can be used to improve customer satisfaction and track progress over time, with a focus on NCDOT's mission and goals.</p> <p>This summary outlines the results of the 2018-19 survey, which was taken by more than 1,900 North Carolinians through both convenience and oversampling methods and overseen by the North Carolina State University Institute for Transportation Research and Education. The 2018-19 version of the survey was updated to improve the quality of responses and better capture the opinions and experiences of North Carolinians, as well as be representative of the demographics of North Carolina. This customer survey was conducted during the period of 2018-19 using methods similar to surveys conducted in previous years, with changes made to improve the survey and reach a more representative audience.</p>			
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# Executive Summary: 2018-19 Statewide Customer Service Survey

Across North Carolina, the North Carolina Department of Transportation (NCDOT) provides transportation services for a variety of functions and uses. Customer satisfaction is identified as an NCDOT priority as part of the department's Strategic Plan. Since 2015, NCDOT has measured customer service through a statewide survey focused on asking customers about key elements of interest to the department. This survey continues to provide useful insights that can be used to improve customer satisfaction and track progress over time, with a focus on NCDOT's mission and goals.

This summary outlines the results of the 2018-19 survey, which was taken by more than 1,900 North Carolinians through both convenience and oversampling methods and overseen by the North Carolina State University Institute for Transportation Research and Education. The 2018-19 version of the survey was updated to improve the quality of responses and better capture the opinions and experiences of North Carolinians, as well as be representative of the demographics of North Carolina. This customer survey was conducted during the period of 2018-19 using methods similar to surveys conducted in previous years, with changes made to improve the survey and reach a more representative audience.

## Demographics

Below is a summary of the direct participant demographics for both online convenience surveys and the oversampling survey effort conducted to reach select demographic groups. These results are not weighted. In some cases, the demographic makeup of those surveyed differs from the actual demographic composition of North Carolina adults, although the oversampling effort helped make the participant distribution align more closely with the actual composition. The numbers below represent the percentage of each group (such as gender) that a given subgroup (such as female) comprises in the random survey sample respondents compared to the North Carolina population as a whole. The state-level data utilized to measure representation is based on the results of the 2018 United States Census American Community Survey and 2019 NC State Demographer data.<sup>1</sup>

### *Gender*

- Adult Males: 47.8% of North Carolina, 57.5% of survey respondents
- Adult Females: 52.2% of North Carolina, 42.5% of survey respondents

### *Age*

- 18-24 Years: 12.7% in North Carolina, 7.4% of survey respondents
- 25-34 Years: 16.6% in North Carolina, 16.3% of survey respondents
- 35-44 Years: 16.3% in North Carolina, 18.0% of survey respondents
- 45-54 Years: 16.8% in North Carolina, 19.6% of survey respondents
- 55-64 Years: 16.4% in North Carolina, 21.0% of survey respondents
- 65 or Older: 21.2% in North Carolina, 17.7% of survey respondents

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<sup>1</sup> Note: Respondents who did not answer or input "NA," "other," or "prefer not to answer" were not included in this analysis.

*Race*

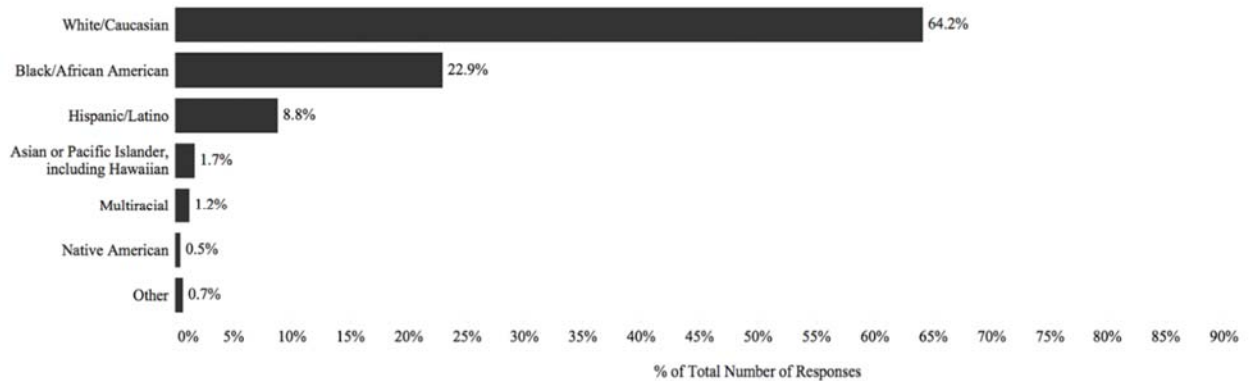
- White/Caucasian: 72.2% of North Carolina, 64.2% of survey respondents
- Asian or Pacific Islander: 2.8% of North Carolina, 1.7% of survey respondents
- Native American including Alaskan Native: 1.7% of North Carolina, .5% of survey respondents
- Black/African American: 21.5% of North Carolina, 22.9% of survey respondents
- Hispanic/Latino: 10.84% of North Carolina, 8.8% of survey respondents
- Multiracial: 2.2% of North Carolina, 1.2% of survey respondents

**Oversampling**

As survey results were not sufficiently representative of the population of North Carolina in previous years, an additional oversampling effort was conducted. This oversampling effort was designed to reach specific demographics and to provide a more representative survey sample. A total of four demographic groups were targeted: ages 18 to 24, ages 25 to 34, Black/African American, and Hispanic. Oversampling of these four demographic groups resulted in more accurate representation, displayed in Figures 1 and 2.

*Figure 1: Race of Participants*

Convenience with oversampling



Convenience only

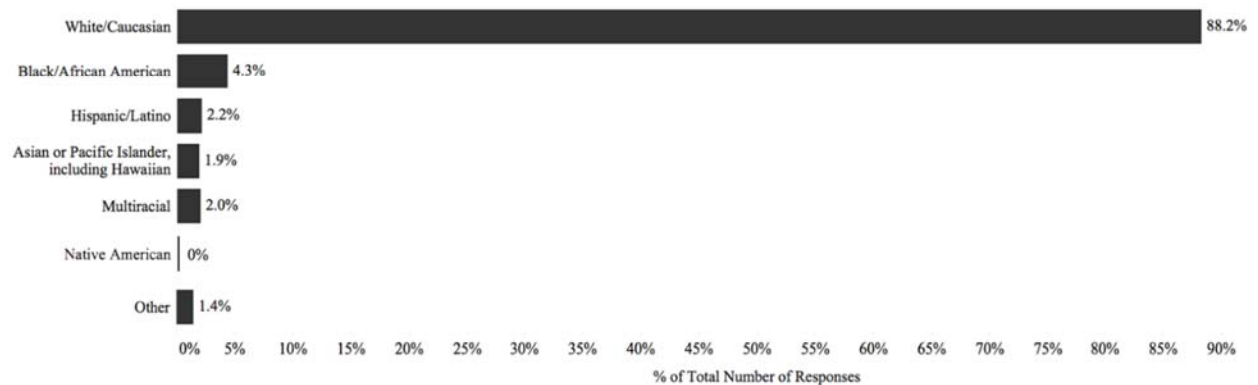
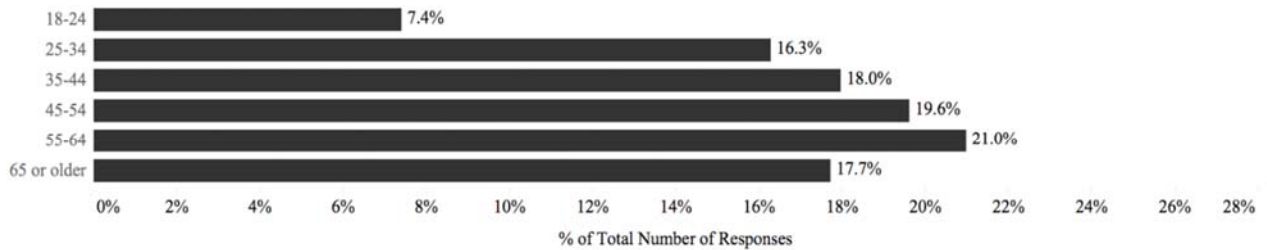
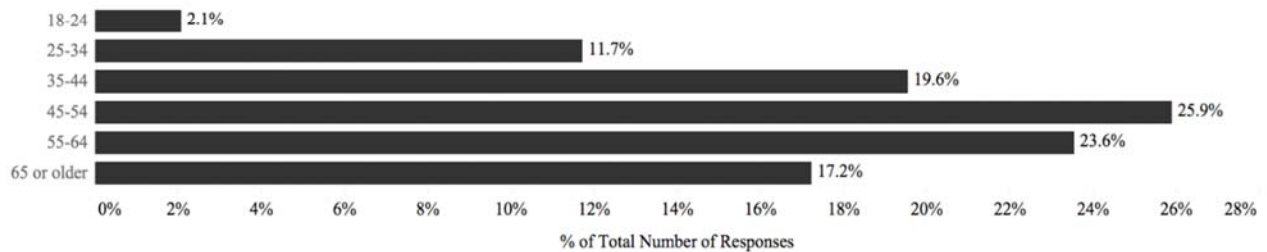


Figure 2: Age of Participants

Convenience with oversampling



Convenience only



## Weighting

Valid survey responses from both the convenience sample and oversampling effort were weighted to be more representative of income level, education, age, gender, race, Hispanic origin, and county in measuring overall satisfaction. Individuals who did not respond to the question regarding their satisfaction with NCDOT services were not included in weighted analysis. Because of this, the selected sample demographics weighted differ slightly from the overall demographics of all survey respondents.

Weights were determined by comparing the proportion of a specific demographic within the survey sample to that within the adult population of North Carolina. For example, if the proportion of males within the survey is 55.3% and the actual proportion of the adult population is 47.8%, a weight of 0.864 is applied to scale down the number of responses. An individual weight was applied for each demographic observed and then multiplied together to find the total weight. The specific formula to determine a weight for an individual respondent is as follows:

**Untrimmed weight** =

$$\frac{\text{Gender (Population)}}{\text{Gender (Survey)}} \times \frac{\text{Age (P)}}{\text{Age (S)}} \times \frac{\text{Ethnicity (P)}}{\text{Ethnicity (S)}} \times \frac{\text{Hispanic Origin (P)}}{\text{Hispanic Origin (S)}} \times \frac{\text{Income (P)}}{\text{Income (S)}} \times \frac{\text{Education (P)}}{\text{Education (S)}} \times \frac{\text{County (P)}}{\text{County (S)}}$$

For example, the weight for an African American (not of Hispanic origin) female respondent within the 25-34 age bracket whose income is between \$50,000 and \$99,999 per year has an associate degree, and is a resident of Mecklenburg county would be calculated as follows:

$$\frac{.5216}{.4469} \times \frac{.1657}{.1313} \times \frac{.2151}{.1830} \times \frac{.8916}{.9126} \times \frac{.3040}{.3562} \times \frac{.1170}{.2619} \times \frac{.1034}{.0670} = .995$$

Additionally, artificially high individual weights were trimmed within four standard deviations plus the average weight, creating a more normal distribution and preventing any one individual from substantially skewing results. The above example weight would not be trimmed because it is within four standard deviations plus the average weight.

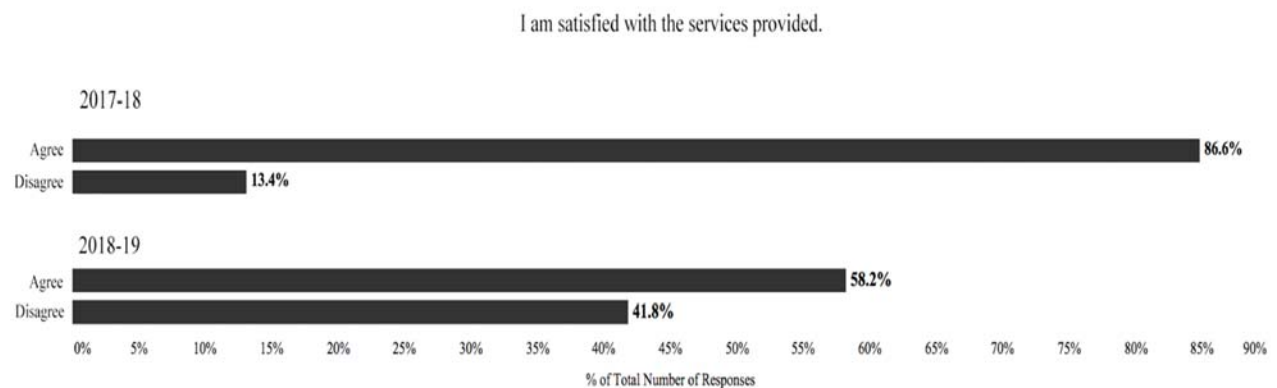
### Survey Changes

Several changes were made to the 2018-19 survey to improve response quality, to reduce the amount of time to complete the survey, to better understand the transportation patterns of respondents, and to streamline the survey in general. The length of the survey was reduced from a median response time of 17.5 to 14.8 minutes. Most questions involving aspects of transportation that NCDOT does not have direct control over, such as the availability of Wi-Fi at airports, were removed. A new type of question was added to better capture why North Carolina residents do not use particular modes. Respondents who used any given mode infrequently were asked why they did not use it more frequently in the past year.

New questions regarding emerging modes of transportation, such as pay-as-you-go bikes and scooters, were added to the survey as well. Questions regarding satisfaction with specific services in North Carolina were changed from a 3-point Likert scale answer set to a 5-point Likert scale answer set. The 2017-18 survey allowed respondents to choose between “agree,” “neutral,” and “disagree,” whereas the 2018-19 survey allowed respondents to choose between “strongly agree,” “agree,” “neutral,” “disagree,” and “strongly disagree.” This adjustment was made because in previous years a sizeable portion of respondents answered “neutral” as to whether they were satisfied, which provided limited information about true sentiments and limited analysis capabilities. The use of a more specific scale improved the detail of information gained from the response to these questions. Using this new approach, those who responded “strongly agree,” “agree,” and “neutral” to the statement “I am satisfied with the services provided” was 58.2%

This satisfaction rate is compared to that from the 2017-18 survey in Figure 3. However, caution should be used in comparing satisfaction to previous years; while the addition of the new options “strongly agree” and “strongly disagree” provides a nuanced understanding of public perceptions, it may have also resulted in fewer respondents opting to select the “neutral” category. Respondents who may have reported their satisfaction as “neutral” in previous years may have selected response options in the new, broader scale because they felt that it better represented their opinion, therefore reducing overall satisfaction compared to past years. The scale in the figure has been collapsed for continuity with previous reports.

Figure 3: Level of Satisfaction



Additionally, it is important to note external factors that may have affected the responses of participants. Efforts by NCDOT to publicize other large-scale survey efforts simultaneously may have reduced the number of responses and contributed to survey fatigue. The same volume of surveys of different types was not conducted in past years. Furthermore, information about NCDOT budget challenges was also reported in the news around the same time as the survey, which may have influenced respondent perceptions.

Below are the results of the convenience survey and oversampling effort conducted through this study. The percentages reported for each question type indicates the percentage of participants who responded to a given question that answered the question in that way. Note that not all participants responded to all questions. Surveys distributed between the two samples differed slightly, and some questions were omitted from the oversampling effort.

### **Overall Responses**

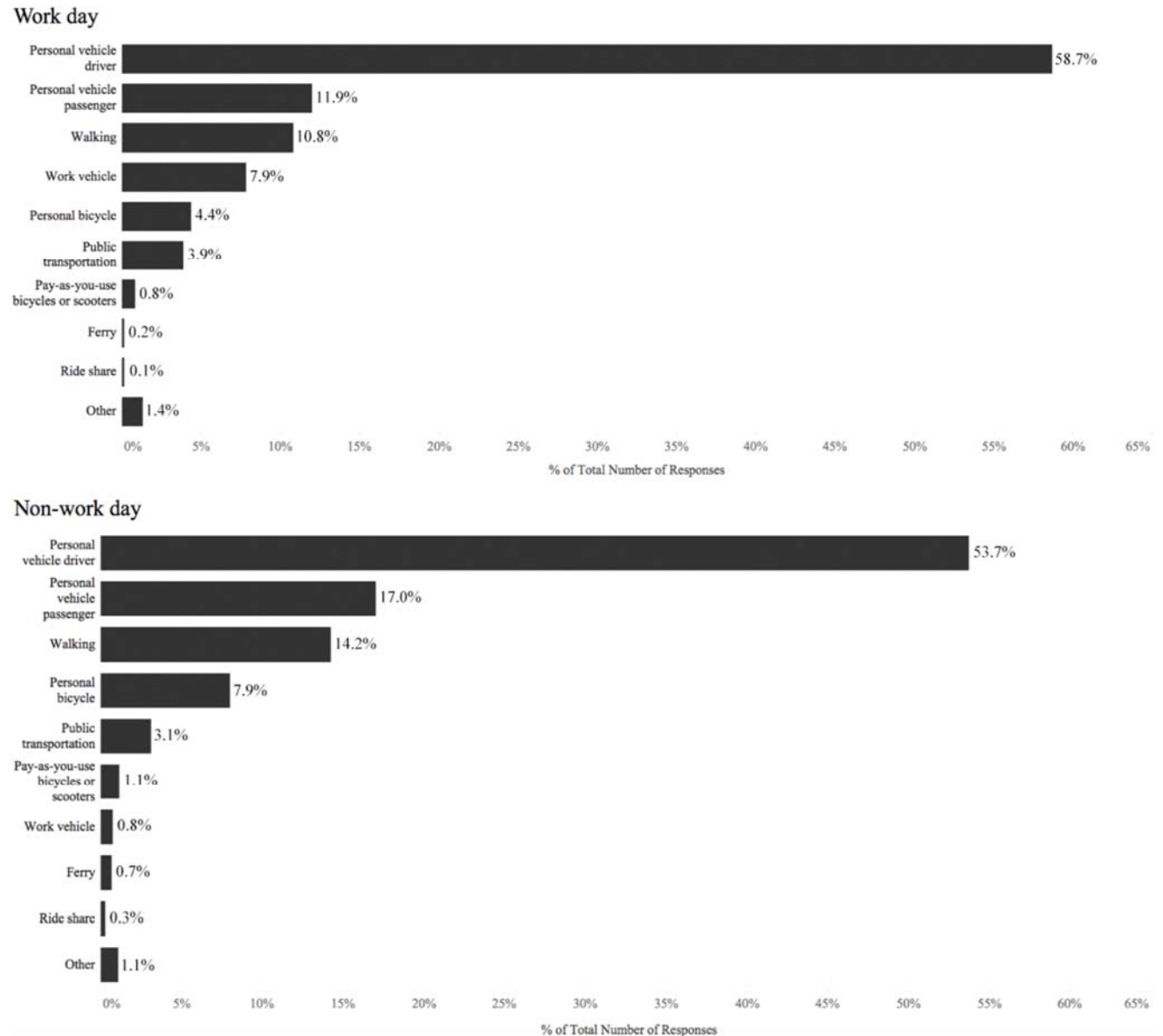
- 58% of respondents said they were satisfied with transportation services in North Carolina.
- 92% of respondents use a personal vehicle as their primary means of transportation (79% as a driver and 13% as a passenger).
  - 3% use a personal bicycle
  - 2% of respondents use a work vehicle
  - 2% use public transportation
  - 1% walk
  - <1% use another mode as a primary means of transportation
- 49% of survey respondents have lived in North Carolina more than 30 years (86% have lived in North Carolina more than 10 years).
- For respondents who have lived in North Carolina less than 5 years, approximately 50% said that NCDOT services are the same or better than their previous state of residence.
- Respondents rated the following services as the three that should receive the most emphasis over the next two years:
  - Maintenance of roadways (26%)
  - Safety of roadways (20%)
  - New construction of roadways (18%)
  - Pedestrian transportation (10%)
  - Local/public/city buses (9%)
  - Trains (7%)
  - Bicycle transportation (7%)
  - Airports (3%)
  - Ferries (<1%)
- When asked if they have made different commute choices in response to congestion:
  - 33% of respondents said that they changed the time they left for work or home
  - 30% changed the route they travel
  - 23% have not made any changes

## Key Findings

In addition to the overall results described in previous sections, the research team identified survey findings of interest related to trends and patterns in the data. These results are described in the following section.

Travel mode usage patterns vary between work days and non-work days, as shown in Figure 4. In general, respondents are more likely to walk or use a bicycle on days that they do not work (and less likely to drive a personal vehicle).

Figure 4: Work Day Versus Non-Work day Usage

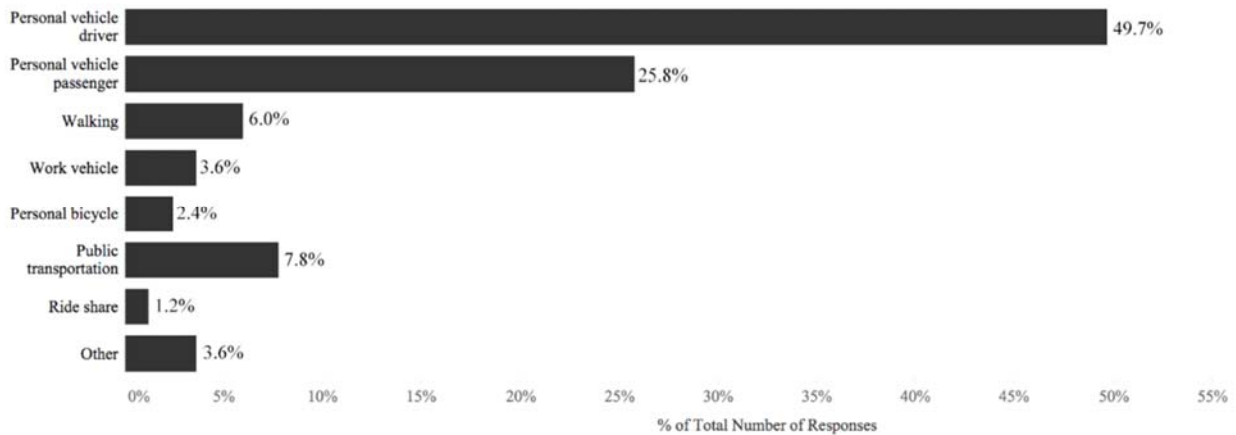




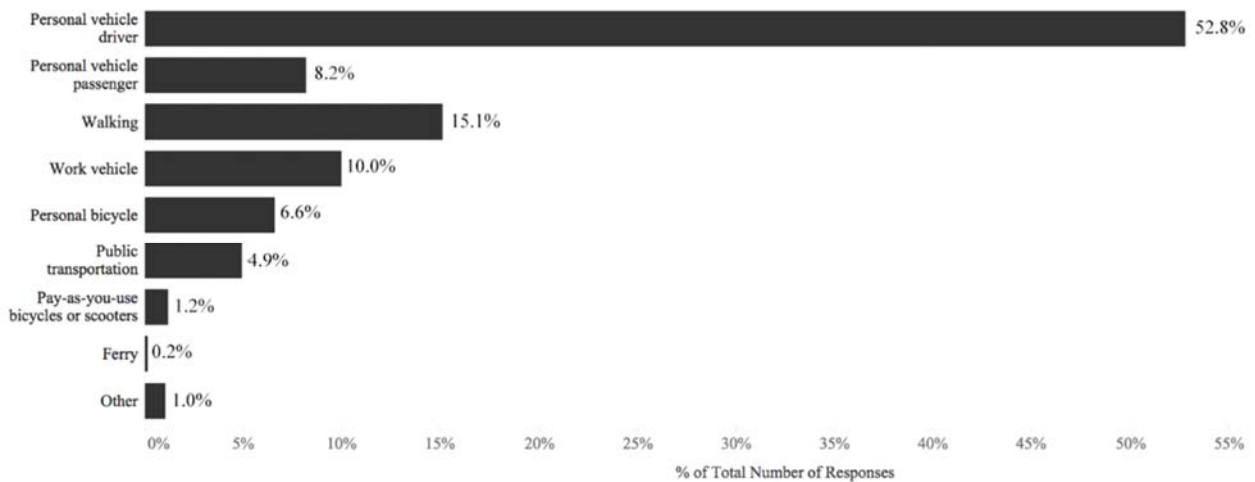
Mode choice varies by income brackets, as shown in Figure 5. Respondents in lower income groups are more likely to be a personal vehicle passenger and use public transportation on days that they work than respondents in higher income groups (who are more likely to walk, bike, or drive a work vehicle).

Figure 5: Modal Choice Variance by Income

Work day, income less than \$25,000

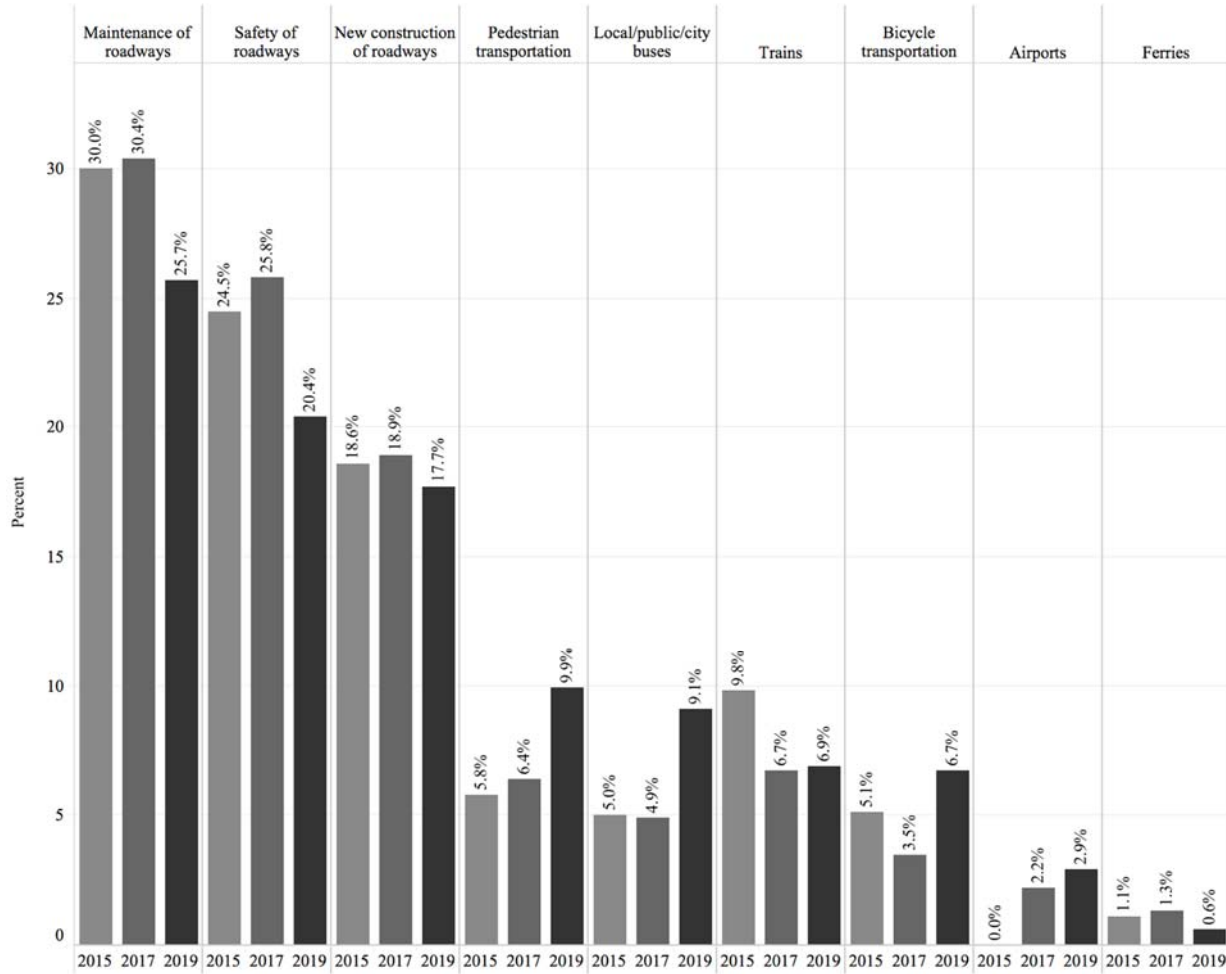


Work day, income \$100,000 or more



The priorities of respondents have changed compared to previous survey years, as shown in Figure 6. Fewer respondents reported that NCDOT should prioritize roadways and respondents place more importance on pedestrian transportation, bicycle transportation, and public transportation.

Figure 6: Prioritization by Mode



While only 6% of respondents reported utilizing emerging transportation options such as pay-as-you-go scooters and bicycles more than a couple of times a year, they were most commonly used for recreation, exercise, and general errands. Most non-users cited that they were not interested in using these mode types. These results are shown in Figures 7 and 8.

Figure 7: Purpose of Trips Using Emerging Transportation

For what purpose do you typically use pay-as-you-use scooters or pay-as-you-use bicycles?

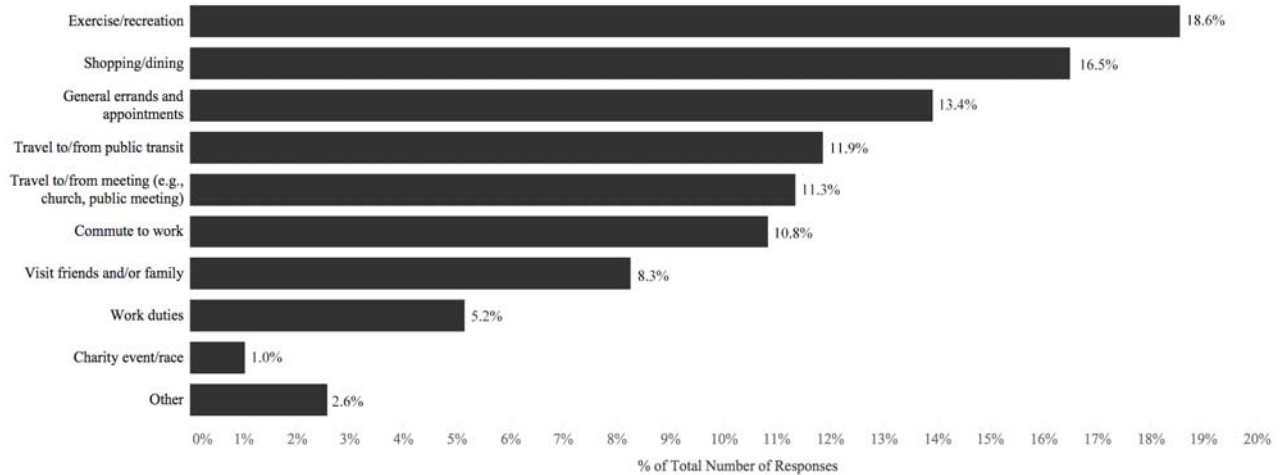
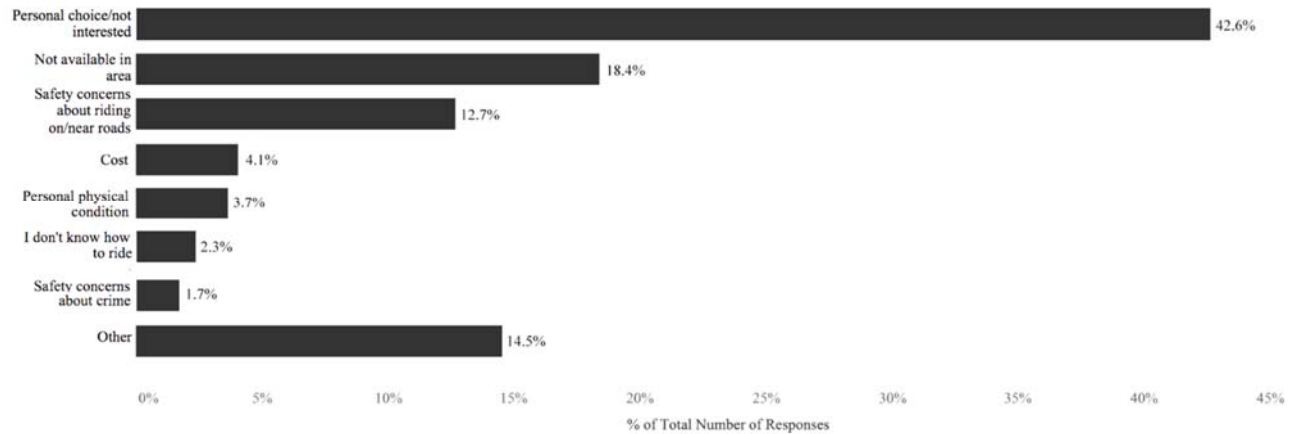


Figure 8: Reasons for Not Using Emerging Transportation

Why have you not traveled by pay-as-you-go bicycle or scooter more often in the past year?



Nearly 39% of respondents reported that they would be more likely to use a train if they had access to service within a 30-mile radius of their location. Respondents reported that they would also be more likely to use train services if there were more routes where they need to travel. These results are shown in Figures 9 and 10.

Figure 9: Likelihood of Utilizing A Train Station within A 30-Mile Radius

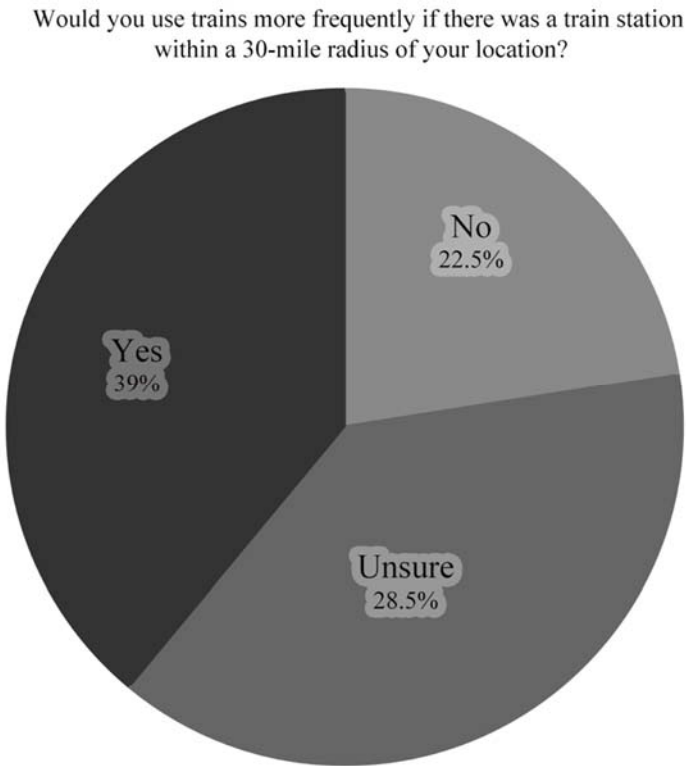
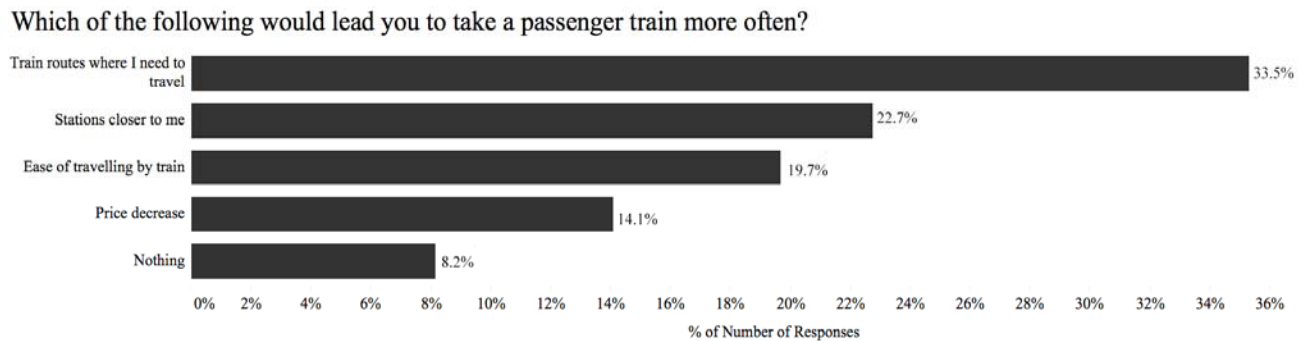


Figure 10: Factors Influencing Passenger Train Usage



While overall satisfaction is lower than in previous years, the expectations of most respondents in individual mode-specific categories are generally being met or exceeded. These results are shown in Figure 11.

*Figure 11: Expectation Achievement by Mode*

<b><i>Travel Mode</i></b>	<b><i>Satisfaction (Meets or Exceeds Expectations)</i></b>
<b>Pedestrian</b>	66.9%
<b>Motor Vehicles</b>	81.7%
<b>Bicycle</b>	40.5%
<b>Public/Local/City Buses</b>	66.5%
<b>Rail</b>	77.1%
<b>Ferry</b>	84.9%
<b>DMV</b>	82.7%

### ***Results by Mode***

The survey also included both mode-specific and non-specific questions, the results of which are described in the following section.

#### *NCDOT Communications*

- 18% of respondents reported that the most effective way for NCDOT to provide them with information is electronic message boards. An additional 16% reported signs on roadways as an effective method; 13% reported social media as an effective method.
- When asked if they had heard about the following campaigns and outreach efforts:
  - NC by Train (23%)
  - NCDOT Now (16%)
  - Safe Routes to School (15%)
  - Watch for Me NC (14%)
  - NC Vision Zero (13%)
  - Let's Go NC (11%)
  - Active Routes to School (5%)
  - Go Reconnect (3%)

#### *Division of Motor Vehicles*

- 42% of respondents said they visited a Driver License DMV (Division of Motor Vehicles) Office in North Carolina in the past year. The following results include responses from survey participants who reported that they visited a North Carolina DMV at least a couple of times in the past year.
- Factors that influenced which DMV office a respondent chose to visit:
  - Location (51%)
  - Shorter waits times (18%)
  - Previous experience (10%)

- Attitude of employees/customer service (8%)
- Hours of operation (8%)
- All services met or exceeded the expectations of at least 71% of respondents.
- Service with the most respondents reporting *not meeting* expectations: Length of wait time at DMV office (29% rated as does not meet expectations).
- Respondents rated the following services as the three that should receive the most emphasis over the next two years:
  - Length of wait time at DMV office (33%)
  - Overall quality of customer service at DMV office (19%)
  - Convenience of hours of operation at DMV office (18%)

### *Personal Vehicle Drivers and Passengers*

- 71% of respondents said they drive or ride in a personal vehicle every day (an additional 15% responded that they drive or ride in a personal vehicle more than once per week).
- Median time spent in a vehicle was reported as approximately 45 minutes. The following results include responses from survey participants who reported that they drove or rode in a motor vehicle in North Carolina at least a couple of times in the past year.
  - Average time on:
    - Tuesday: 60 minutes
    - Thursday: 60 minutes
    - Saturday: 45 minutes
    - Sunday: 30 minutes
- 32% of respondents use apps like Waze or Google Maps to help them make decisions about their morning commute. An additional 32% rely on their past experience with roadways.
- Service with the most respondents reporting *exceeding* expectations: Smoothness of highway and interstate surfaces (28% rated as exceeding expectations). Note: In the 2017-2018 survey, this was the service with most respondents reporting *not meeting* expectations.
- Service with the most respondents reporting *not meeting* expectations: Overall flow of traffic (28% rated as does not meet expectations).
- Respondents rated the following services as the three that should receive the most emphasis over the next two years:
  - Overall flow of traffic on highways and interstates (17%)
  - Smoothness of highway and interstates (14%)
  - Safety of highway and interstates (13%)

### *Bicyclists*

- 12% of respondents said they ride a bicycle every day or more than once a week (an additional 10% responded that they ride a bicycle a couple of times each month). The following results include responses from survey participants who reported that they rode a bicycle in North Carolina at least a couple of times in the past year.
- Respondents who did not travel by bicycle in the past year reported reasons including:
  - Personal preference/not interested (30%)
  - Do not own a bicycle (26%)
  - Safety concerns about drivers (18%)
  - Lack of infrastructure/safe places to bike (13%)
- Median daily time traveled was reported as approximately 30 minutes.
- Respondents most frequently cited the following purposes for using a bicycle:
  - Exercise/recreation (36%)
  - Shopping/dining (11%)

- Commute to/from work (11%)
- Service with the most respondents reporting *exceeding* expectations: Width of bike lanes (20% rated as exceeding expectations).
- Service with the most respondents reporting *not meeting* expectations: Access to bike lanes, wide shoulders, and bicycle-friendly shared lanes (67% rated as does not meet expectations).
- Respondents rated the following services as the three that should receive the most emphasis over the next two years:
  - Access to bike lanes, wide shoulders, and bicycle-friendly shared lanes (19%).
  - Connectivity of bicycling facilities, such as paved shoulders, bike lanes, bicycling routes, or bicycle-friendly shared-lanes (16%).
  - Consideration of bicyclist needs in transportation decision making (14%).

### *Pedestrians*

- 37% of respondents said they walk, jog, or run on a sidewalk, greenway, or walkway every day or more than once a week (an additional 22% responded that they walk, jog, or run a couple of times each month). The following results include responses from survey participants who reported that they walked, jogged, or ran on a sidewalk, greenway, or in North Carolina at least a couple of times in the past year.
- Respondents who did not walk, jog, or run in the past year reported reasons including:
  - Personal preference/not interested (38%)
  - Lack of infrastructure/safe places to walk, jog, or run (30%)
  - Personal physical condition (13%)
- Median time traveled on a typical trip was reported as approximately 30 minutes
- Respondents most commonly cited the following purposes for walking, jogging, or running:
  - Exercise/recreation (40%)
  - Shopping/dining (12%)
  - Walk pet (11%)
  - General errands (8%)
- Service with the most respondents reporting *exceeding* expectations: Education for pedestrians on how to walk, jog, or run safely (25% rated as exceeding expectations).
- Service with the most respondents reporting *not meeting* expectations: Consideration of pedestrians in transportation decision making (41% rated as does not meet expectations).
- Respondents rated the following services as the three that should receive the most emphasis over the next two years:
  - Safety of pedestrian walkways, sidewalks, or crossing locations (27%)
  - Access to pedestrian walkways and/or sidewalks (26%)
  - Visibility of lighting along greenways and paths (17%)

### *Public Transportation*

- 4% of respondents said they ride a public/local/city bus in North Carolina every day or more than once a week (an additional 4% responded that they ride a public/local/city bus a couple of times each month). The following results include responses from survey participants who reported that they used public/local/city buses in North Carolina at least a couple of times in the past year.
- Average time traveled on a typical trip was reported as approximately 43 minutes.
- 28% of respondents reported riding a bus to/from work (an additional 15% of respondents reported riding a bus for recreation, and 10% reported riding a bus for shopping and dining).

- 24% of respondents reported that they would be more likely to ride the bus more frequently if there were routes that met their needs; 19% reported that stops closer to their intended destination would make them more likely to use the bus.
- Service with the most respondents reporting *exceeding* expectations: Availability of seats on bus (33% rated as exceeding expectations).
- Service with the most respondents reporting *not meeting* expectations: Weather protection at bus stops (shelters, etc.) (69% rated as does not meet expectations).
- Respondents rated the following services as the three that should receive the most emphasis over the next two years:
  - Access to public/local/city buses (23%)
  - How fast the bus takes you where you want to go (16%)
  - Reliability/timeless of buses (14%)

### *Passenger Train*

- 3% of respondents said they ride a passenger train in North Carolina every day, more than once a week, or a couple of times each month (an additional 12% responded that they ride a passenger train a couple of times per year).
- 26% of respondents reported not travelling by train more often because of a lack of routes nearby.
- 35% of respondents would travel by train more frequently if there were train routes where they needed to go; 22% of respondents would travel by train more frequently if there were stations closer; 17% of respondents would travel by train more frequently if it were easier.
- 39% of respondents would ride a train more frequently if stations were located within a 30 mile radius of their location.
- 31% of respondents reported riding a passenger train for recreation. An additional 24% of respondents reported riding a passenger train to visit friends and/or family.
- Services with the most respondents reporting *exceeding* expectations: Staffing at train stations and cleanliness of train stations (both rated 48% as exceeding expectations).
- Service with the most respondents reporting *not meeting* expectations: Frequency of trains servicing desired route (62% rated as does not meet expectations).
- Respondents rated the following services as the three that should receive the most emphasis over the next two years (Note small sample size of 6):
  - Access to passenger train stations and routes (22%)
  - Safety and security at train stations (22%)
  - Ease of connection with other modes of transportation (17%)

### *Ferries*

- 20% of respondents said they rode a ferry in North Carolina in the past year. The following results include responses from survey participants who reported that they rode on a ferry in North Carolina at least a couple of times in the past year.
- 80% of respondents did not ride a ferry more frequently because they didn't need to cross water to get to their destination.
- Service with the most respondents reporting *exceeding* expectations: Courtesy and helpfulness of staff (40%)
- Service with the most respondents reporting *not meeting* expectations: Availability of Wi-Fi onboard ferry (59% rated as does not meet expectations).
- Respondents rated the following services as the three that should receive the most emphasis over the next two years:
  - Availability and quality of food and drink onboard ferries (12%)
  - Availability of Wi-Fi onboard ferries (12%)
  - Frequency of ferry service on desired route (11%)



### *Aviation*

- 56% of respondents said they have flown to or from a North Carolina airport in the past year. The following results include responses from survey participants who reported that they took at least one ride on a plane in North Carolina in the past year.
- 53% of respondents did not fly more frequently because they had no need to. An additional 24% did not fly more frequently because it was cost-prohibitive.
- 35% of respondents reported flying for recreational purposes such as vacation/tourism. An additional 26% reported flying for work.

### *Emerging Transportation*

- 7% of respondents reported using a pay-to-use bicycle in the past year.
  - 1% of respondents reported using these services regularly
- 8% of respondents reported using a pay-to-use scooter in the past year.
  - 1% of respondents reported using these services regularly
- 44% of respondents reported using ride share or taxi services in the past year.
  - 1.1% of respondents reported using these services every day
  - 4.5% of respondents reported using these services regularly
- 43% of respondents reported that they did not use pay-to-use bicycles or scooters more frequently because they are not interested. An additional 18% reported not using them because they are not available in their immediate area. 13% of respondents cited concerns about riding on/near roads.
- 19% of respondents use pay-to-use bicycles or scooters for exercise or recreation. 17% reported using them for shopping or dining. 14% of respondents used them for general errands and appointments.