ITEM #4

COMMUTER CONNECTIONS
A SMARTER WAY TO WORK

National Capital Region
Transportation Planning Board
COMMUTER CONNECTIONS PROGRAM

2019 BIKE TO WORK DAY
SURVEY RESULTS
DRAFT

Prepared for:

Metropolitan Washington Council of Governments
777 North Capitol St NE, Suite 300
Washington, DC 20002
mwcog.org

Prepared by:

LDA Consulting

In association with:

CIC Research, Inc.

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SECTION 1 INTRODUCTION

Purpose of the Survey

This brief report presents results of a survey of commuters who participated in the 2019 regional Bike to Work Day event, held in May 2019. This survey was conducted by the Commuter Connections program of the National Capital Region Transportation Planning Board at the Metropolitan Washington Council of Governments (COG) to identify the experience of the participants with the Bike to Work Day event and to assess participants' use of bike for commute travel before and after the event. Data from the survey will be used in the July 2017 – June 2020 Transportation Demand Management (TDM) evaluation of the Mass Marketing TDM program element.

Survey Methodology

The survey was conducted by COG in November 2019, with assistance from LDA Consulting and CIC Research, Inc. The questionnaire was based on that used in the 2016 BTWD survey, with a few minor modifications to update the survey for 2019 and several new questions added to examine riders' use of electric bikes and the incidence of bike-transit travel combinations in the event.

COG e-mailed a survey invitation to 16,762 commuters who registered for the 2019 event.[1] All event participants registered through the Washington Area Bicyclist Association's web site. The questionnaire was programmed for on-line administration and the email invitation included an Internet website link directly to the survey. A copy of the questionnaire is provided in Appendix A. Of the original mailing, 16,063 emails were delivered (16,456 minus 393 undeliverable email addresses). COG received 2,285 completed interviews, for a response rate of 14.2%.

Survey Data Collected

The survey collected information about the following:

- Respondent demographics
- Participation in past Bike to Work Day (BTWD) events and source of information on BTWD
- Use of bike for commuting before and after BTWD
- Commute patterns on non-bike days
- Bike commute assistance offered by employers
- Bike use for non-commute trips

Section 2 summarizes results of these survey topics. Each table and figure shows both the percentage responses for the question and the raw number of respondents (e.g., n=__) who answered the question.

[1] Note that the registrations for the 2019 BTWD event totaled more than 17,000. The count for the BTWD survey invitations was less that the total because Commuter Connections also was conducting a survey for the 2019 Car Free Day (CFD) event at the same time as the BTWD survey. To avoid confusing commuters who had participated in both events, BTWD registrants who also registered for BTWD received only the CFD survey; their names were removed from the BTWD registrant file before the surveys were initiated.

Highlights of 2019 Survey Findings

Event Participation

- 2019 was the first BTWD event for 23% of participants.
- 94% of respondents said they were very likely to participate in another BTWD event in the future and 88% of respondents said they were very likely to recommend BTWD events to others.
- The most common BTW Day information sources were internet (30%) and referrals (20%). Sixteen percent heard about the event through a social media source, such as a Facebook post or Twitter.
- More than one-third (35%) of respondents said their favorite part of the event was sharing the ride with other cyclists. One-quarter (23%) noted pitstop activities as their favorite part.
- Nearly all (93%) riders said they rode a personal bike on BTWD. Six percent rode a Capital Bikeshare bike. And 97% of participants rode a traditional pedal-powered bike. Only 3% of riders used an electric/electric-assist bike.
- Almost nine in ten (88%) of BTWD participants rode their bikes the entire way from home to work on BTWD. The remaining respondents rode part of the way, using another mode of transportation for the remaining part of the trip; 5% drove to a Park & Ride lot and biked from the lot to work, 5% biked from home to a transit stop or stations, then rode a bus or train for the remaining part of the trip.

Bicycle Commuting Before and After BTWD

- 87% of participants rode to work at least occasionally before BTWD; 91% rode to work in the summer after BTWD, 86% were still riding during the late fall (November 2019).
- Seven percent of participants started riding to work after their first BTWD event – these were new riders. An additional 16% of participants rode before BTWD, but increased how often they rode to work.
- Respondents who rode to work before BTWD rode an average of 2.6 days per week. The average frequency increased during the summer after BTWD to 2.8 days/week. In late fall, the average frequency dropped back to 2.6 days per week.
- Participants who were riding less than three days per week in the fall after BTWD reported several barriers to bicycle commuting; 47% said they did not want to ride in inclement or cold/winter weather, 24% said they did not feel safe riding or did not have a safe route, and 22% said their commute was too far to ride on a regular basis.
- Respondents who biked after BTWD, even if only occasionally, were asked how they traveled to work on days they did not bike to work. About four in ten rode in a personal vehicle; 38% drove alone to work and 4% rode in a carpool or vanpool. Nearly half (45%) rode a train or bus.
- BTWD participants traveled an average of 8.4 miles one-way to work.

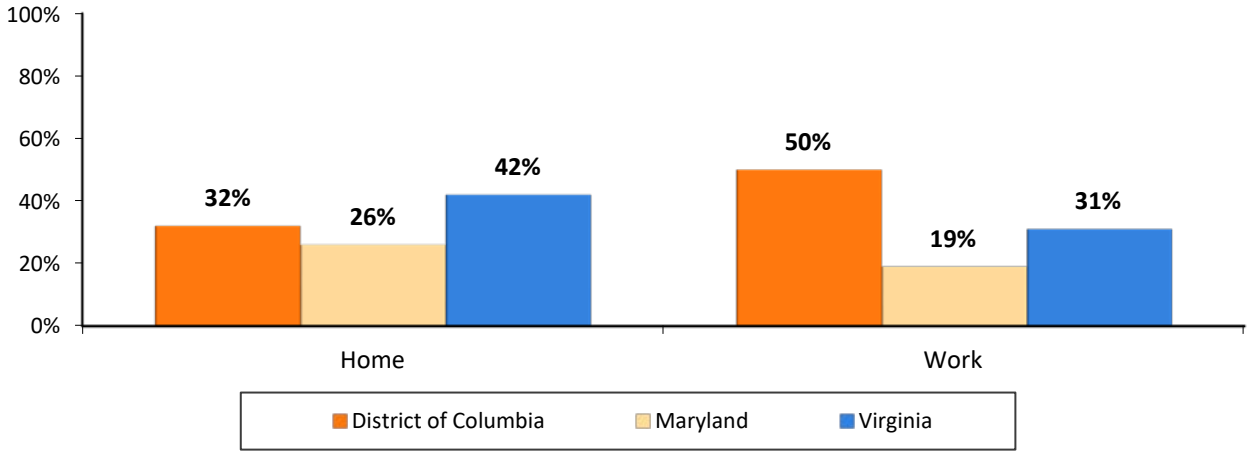
Section 2 Summary of Results

Characteristics and Demographics of the Sample

Home and Work Location

About four in ten (42%) 2019 BTWD survey respondents lived in Virginia (Figure 1). About one-third (32%) lived in the District of Columbia and 26% lived in Maryland. The distribution by work state was considerably different. Half (50%) of respondents worked in the District of Columbia and three in ten (31%) worked in Virginia. The remaining 19% worked in Maryland.

Figure 1
Home and Work Jurisdictions
(Home n = 2,170, Work n = 2,129)



The top home Maryland and Virginia locations for 2019 BTWD participants included:

Virginia Home Counties	Percentage	Maryland Home Counties	Percentage
Fairfax County	18%	Montgomery County	19%
Arlington County	12%	Prince George's County	5%
Alexandria City	7%	Frederick County	1%
Loudoun County	4%		
Prince William County	2%		

Top Home and Work Zip Codes – Participant home and work locations were widely distributed across the region; respondents reported more than 280 home zip codes and over 200 work zip codes. But eight zip codes each accounted for 2% or more of the total participants' home locations. Six of the top residential zip codes were in the District of Columbia: 20001 (3.3% of total participants), 20002 (5.1%), 20003 (2.5%), 20009 (4.4%), 20010 (3.2%), and 20011 (2.9%). The two other notable home zip codes included 22204 in Arlington, VA (2.5%) and 22314 in Alexandria, VA (3.0%).

Eleven zip codes each accounted for 2% or more of the total participants' work locations. Six of the top work zip codes also were in the District of Columbia: 20001 (4.2% of total participants), 20002 (3.4%), 20004 (2.6%), 20005 (4.9%), 20006 (3.4%), and 20036 (5.1%). Other notable work zip codes included two zip codes in Bethesda, MD (20814 – 2.0% and 20892 – 2.4%), two Arlington, VA zip codes (22201 – 2.4% and 22202 – 3.0%), and one zip code in Alexandria, VA, 22314 (3.0%).

Demographics

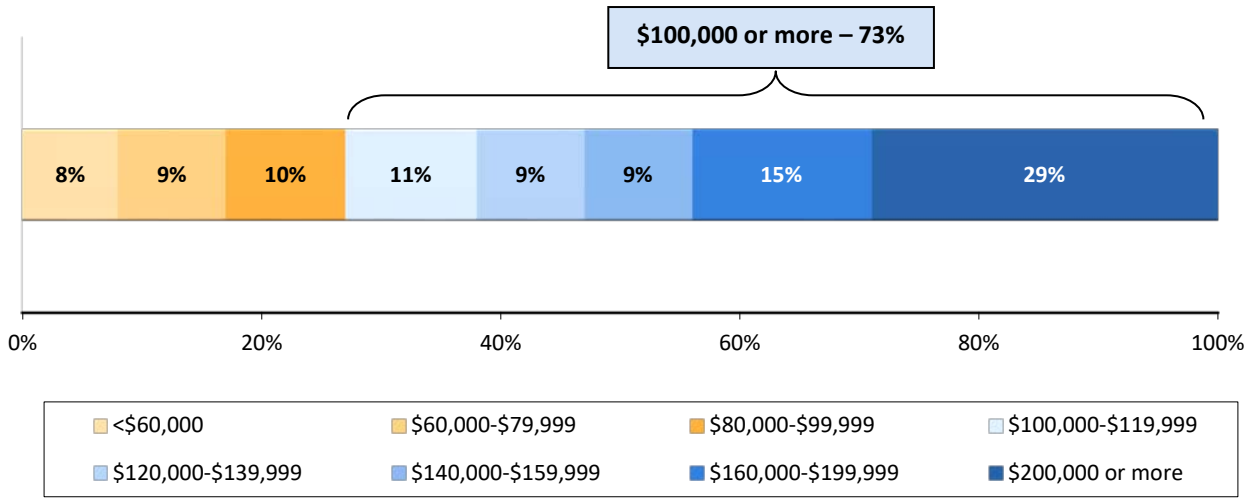
The survey asked respondents four demographic questions: sex, income, age, and race/ethnicity. Details of these characteristics are presented below for BTWD participants.

Sex – Among BTWD participants, men substantially outnumbered women; 67% of BTWD survey respondents were male and 33% were female. This distribution was not statistically different from that noted in the 2016 BTWD survey; in that survey, 64% of respondents were male and 36% female.

The 2019 BTWD survey population differed substantially from the regional commute population. The 2019 State of Commute (SOC) survey found a distribution for the metropolitan Washington region of 52% female and 48% male.

Income – More than eight in ten (83%) respondents had household incomes of $80,000 or more and 73% had incomes of $100,000 or more (Figure 2). BTWD participants had slightly higher incomes than did the regional population overall; as noted in the 2019 SOC survey; 73% of regional workers reported household incomes of $80,000 or more and 61% noted an income of $100,000 or more.

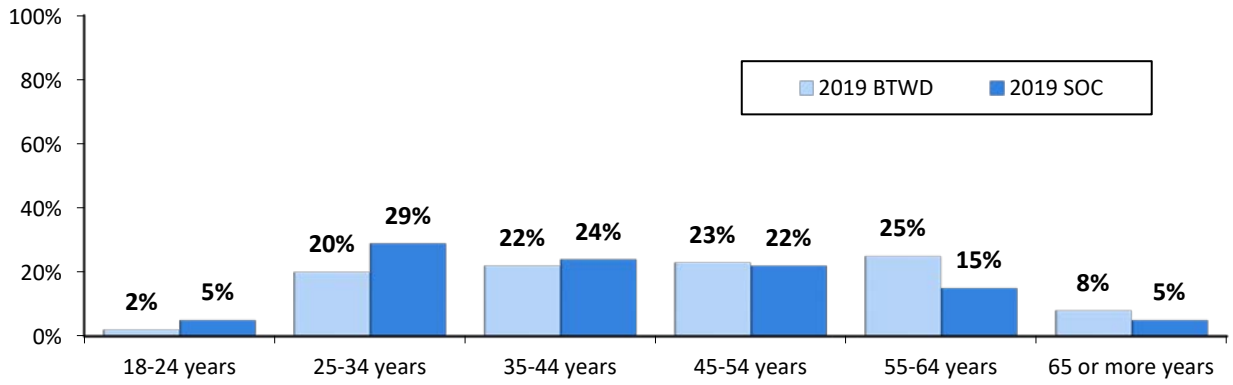
Figure 2
Annual Household Income
(n = 1,781)



Age – BTWD participants were distributed across all age brackets (Figure 3). About two in ten (22%) were younger than 35 years old, 22% were between the ages of 35 and 44 years, and 23% were between 45 and 54 years old. One-third (33%) of respondents were 55 years or older.

Figure 3 also shows the age distribution for all workers in the Washington region. As shown, BTWD participants were older than workers regionally; 56% of BTWD participants were 45 years of age or older, compared with 42% of all regional workers.

Figure 3
Respondent Age Distribution – BTWD Participants vs Regional Workers
(BTWD 2019 n = 2,174, SOC 2019 n = 8,149)



Race/Ethnicity – The overwhelming majority (82%) of 2019 BTWD survey respondents were of White/Caucasian racial/ethnic background (Table 1). The remaining respondents were divided among four other groups: Hispanic (7%), Asian (5%), African-American (4%), and multi-racial/other (2%). The race/ethnicity distribution in 2019 was similar to that from the distribution in 2016. In 2016, 85% of participants were White/Caucasian and the percentages of all other race/ethnic groups were within 2% of their 2016 shares of the BTWD registrant population.

BTWD participants were disproportionately white, when compared to the overall population of workers in the region, as defined by the 2019 State of Commute Survey. That survey estimated that 43% of regional workers were White. Black/African-Americans were particularly under-represented in the BTWD event; while 24% of all regional workers were Black/African-American, only 4% of BTWD survey respondents were of this race/ethnicity.

Table 1
Race/Ethnicity – BTWD Participants 2016 and 2019 and 2019 Regional Workers

Ethnic Group	BTWD 2016 (n = 3,172)	BTWD 2019 (n = 2,021)	Region-SOC 2019 (n = 7,839)
White/Caucasian	85%	82%	43%
Hispanic	5%	7%	14%
Asian	4%	5%	15%
Black/African-American	4%	4%	24%
Multi-racial/other	2%	2%	4%

Employment Characteristics

Size and Type of Employer

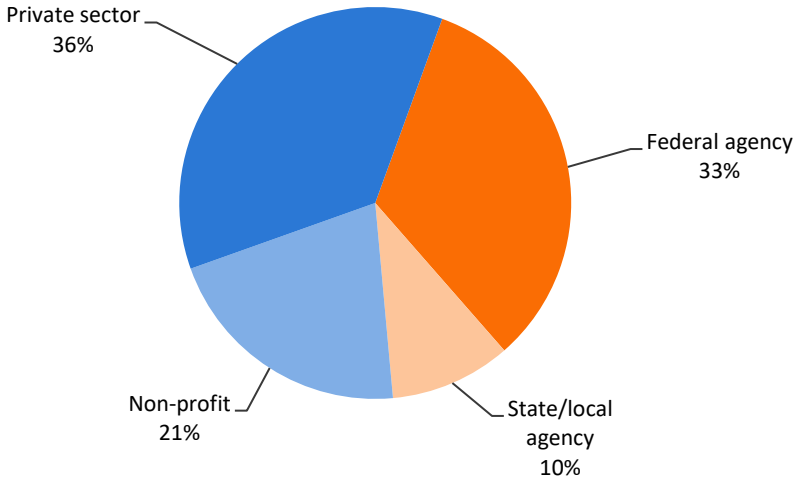
Size – Respondents also were asked for what type of employer they worked and the number of employees at their worksites. A large share of respondents worked for large employers (Table 2). Two-thirds (67%) worked for firms with more than 100 employees; 34% worked for employers that employed 1,000 or more employees.

Table 2
Employer Size
(n = 2,138)

Number of Employees	Percentage	Number of Employees	Percentage
1-25	15%	101-250	13%
26-50	9%	251-999	20%
51-100	9%	1,000+	34%

Type – One-third (33%) of respondents worked for a Federal government agency and 36% were employed by a private sector employer (Figure 4). Two in ten (21%) respondents worked for non-profit organizations and 10% worked for state or local government agencies.

Figure 4
Employer Type
(n = 2,216)



2019 Bike to Work Day Participation

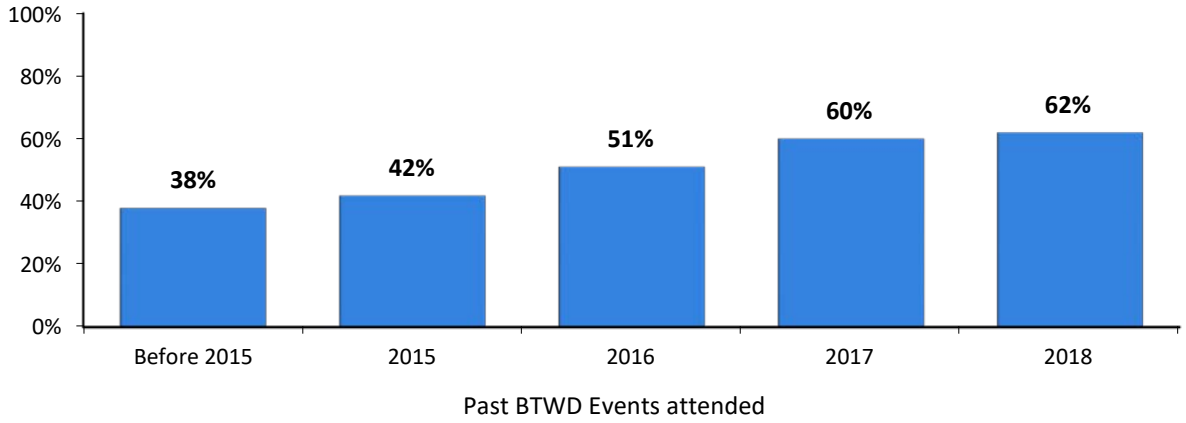
Past Participation in BTWD Events

Twenty-three percent of respondents said the 2019 BTWD event was the first they attended. The remaining 77% said they had participated in a BTWD event before 2019. The 23% 2019 first-time percentage was the same as was noted in the 2016 BTWD survey.

Six in ten respondents had also participated in the 2018 (62%) and 2017 (60%) BTWD events (Figure 5). About half (51%) participated in 2016. More than four in ten (42%) participated in 2015 and 38% participated in an event prior to 2015.

Figure 5
Past BTWD Events Attended in Addition to 2019 Event

(n = 2,285, Multiple responses permitted)



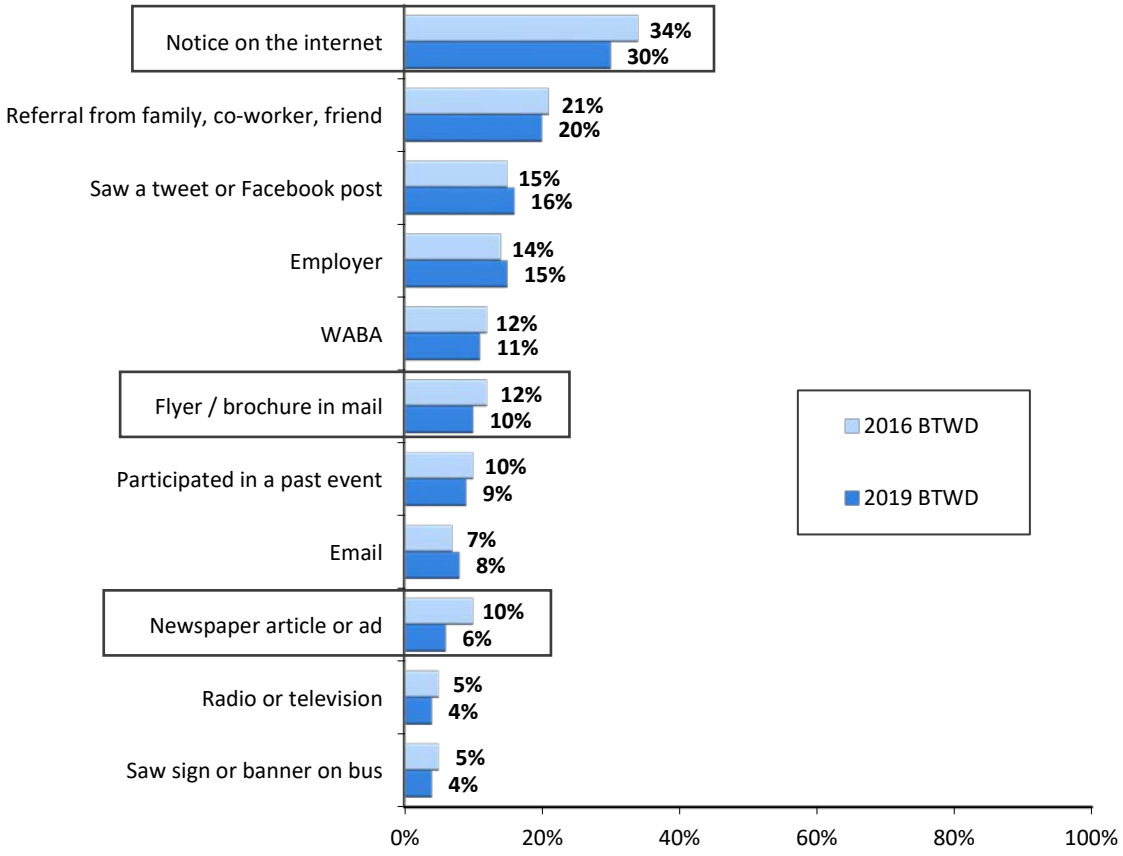
Source of Information on 2019 BTWD event

The most common source of information about the 2019 BTWD was a notice on the Internet, noted by 30% of respondents (Figure 6). This was a slightly lower percentage than the 34% who cited this source in the 2016 survey. Two in ten (20%) respondents said they learned of 2019 BTWD through a personal referral from a family member, co-worker, or friend, essentially the same percentage as gave this response in 2016 (21%).

Other common sources noted by at least one in ten respondents included: social media outreach such as a tweet or Facebook post (16%), information from an employer (15%), outreach by the Washington Area Bicyclist Association (WABA, 11%), or a flyer or brochure they received in the mail (10%). Nine percent said they had participated in a previous BTWD event, so sought registration information themselves. Smaller percentages of respondents heard about BTWD from an email (8%) from a source other than WABA, a newspaper article or advertisement (6%), radio or television (4%), or a sign/banner on a bus (4%).

Three sources, including notice on the Internet, flyer/brochure in the mail, and newspaper article or advertisement exhibited slight declines from 2016 to 2019. Although the declines were small, just two to four percentage points, they were statistically different than in 2016. Other sources had similar percentages as were noted in 2016.

Figure 6
Sources of Information About Bike to Work Day Event
(2016 BTWD n = 3,537; 2019 BTWD n = 2,273)
Responses with statistical changes between 2016 and 2019 are indicated



Respondents cited similar sources of BTWD information regardless of how far they traveled to work and how they traveled on non-bike days. But respondents in some other sub-groups reported different BTWD sources:

- ***Employer Size*** – Respondents who worked for large employers were more likely to note hearing about the event from their employer than were respondents who worked for small employers. Two in ten (19%) respondents who worked for employers with 1,000 or more employees and 18% who worked for employers with between 101 and 999 employees mentioned this source, compared with 11% who worked for employers with fewer than 100 employees.
- ***First BTWD vs Previous Participant*** – Respondents who participated in a previous BTWD were more likely than were new participants to report learning about BTWD from three sources: Internet (33% of past participants versus 19% of new participants), WABA (13% of past participants versus 6% of new participants), and email from an organization other than WABA (9% of past participants versus 2% of new participants),. Conversely, new participants were more likely to cite a personal referral than were respondents who participated before (31% of new participants versus 17% of previous participants). A higher share of new participants also noted hearing about the event from their employer (25%) than did past participants (13%).

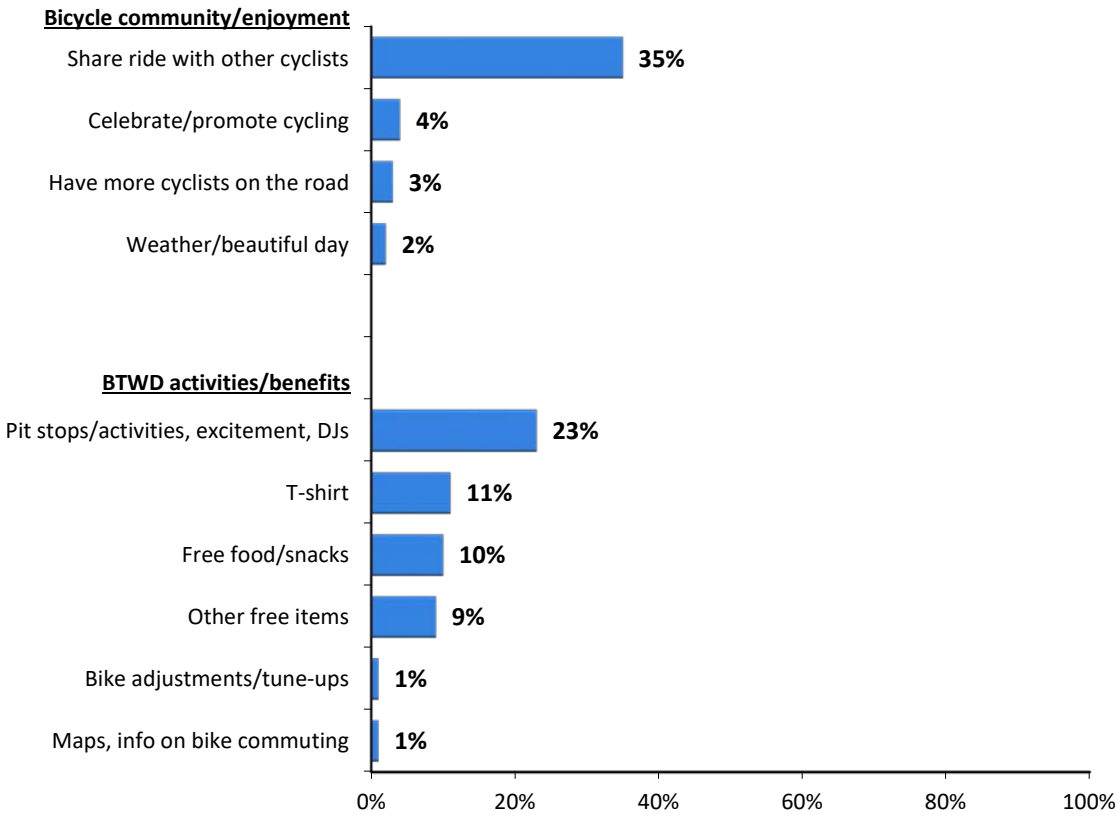
- ***Sex*** – Women cited two sources more often than did men: referral (24% of women versus 18% of men) and information from an employer (19% of women versus 14% of men). Men named one source, messages/ posts on the Internet, more than did women (35% of men versus 20% of women).
- ***Age*** – Differences also were notable by age group. Three sources were more common among respondents who were younger than 35 years: referrals (29% of under 35 years versus 17% of 35 or older), social media sources (22% of under 35 years versus 15% of 35 or older), and information from an employer (21% of under 35 years versus 14% of 35 years or older). Conversely, WABA was a more common source among older respondents; 12% of respondents who were 35 or older cited WABA as their source, compared with 8% of respondents who were under 35 years). Older respondents also were more likely to mention having participated in a previous event; 10% of respondents who were 35 years or older cited this source, compared with 4% of respondents who were younger than 35 years.

Respondents' BTWD Event Experience

The survey included several questions to explore riders' BTWD experience. These questions asked about respondents' favorite part of the 2019 BTWD event experience, how likely they would be to register for a future event, and how likely they were to recommend BTWD to a friend.

Favorite Part of BTWD Event – The survey question on respondents' favorite part of the BTWD experience was an open-ended question. More than eight in ten respondents provided a response (Figure 7).

Figure 7
Favorite Part of 2019 Bike to Work Day Event Experience
(n = 2,285, Multiple responses permitted)



Many respondents mentioned a connection to the bicycling community or enjoyment of bicycling as their favorite part of the event. More than one-third (35%) said they most enjoyed sharing the ride to work with other cyclists. Four percent said they enjoyed celebrating or promoting bicycling and 3% mentioned having more cyclists on the road. Two percent mentioned that the weather was beautiful so they enjoyed that particular ride. A sample of quotes related to these experiences includes:

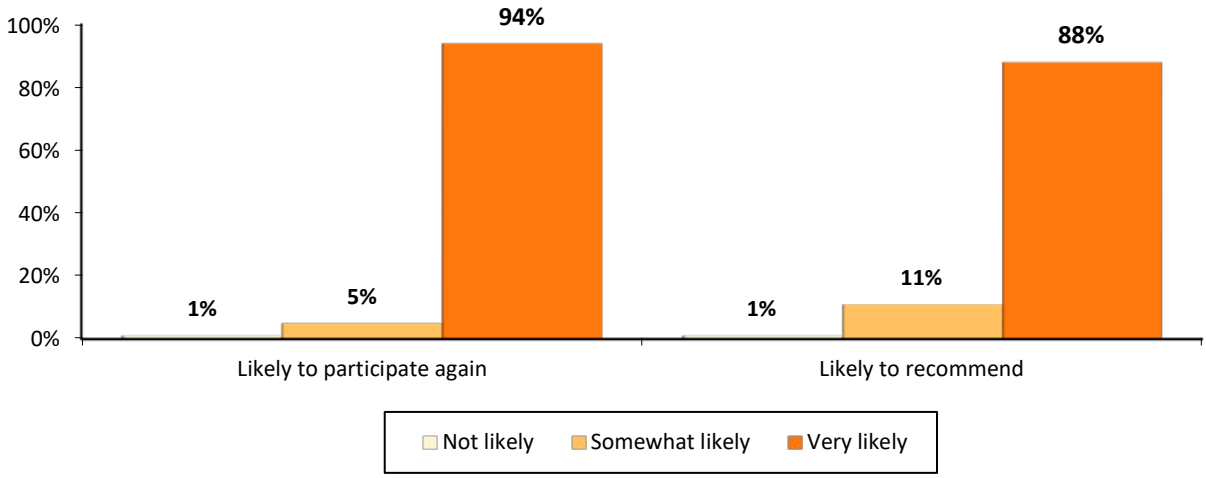
- "Seeing many cheerful bikers commuting to work, feeling more visible as a biker, not depending on a car."
- "Meeting with fellow cyclists … and developing support for bicycle initiatives."
- "I bike commute almost daily. Normally encounter fewer than 6 other riders on my 10.5-mile ride. It was great to see many more that day."
- "The surprise of volunteers cheering on riders."
- "The ride itself, plus getting together with co-workers for photo shoot."
- "The energy of the other cyclists, the staff who welcomed us at the pit stop."
- "Camaraderie of a city full of bikers! It's so much fun to see so many more people out and about, enjoying two wheels."
- "Talking with colleagues about strategies/tips for where to store bikes, changing/showering, most direct commute to work, etc."
- "Showing support for bicycle commuting and encouraging others to give it a try."
- "Seeing more riders out on the trails and roads. More riders makes more motorists aware that bikes are present."
- "Checking out various approaches to lighting, carrying gear, etc. Gawking at vintage bikes. (too few)."
- "Having such a visible bike day with so many folks on the road to test out my route (one of the first times riding to work was this day!)"
- "Seeing so many people participating (riding) and thinking of the potential if biking was made even easier."
- "People happy and excited to be biking. You really feel like part of a community."

A large share of respondents also mentioned particular activities or tangible benefits they received. Twenty-three percent of respondents cited the excitement and activities at pit stops as their favorite part of the event. One in ten mentioned receiving a T-shirt (11%), getting free food/snacks (10%), or receiving other (unspecified) free items (9%). One percent mentioned receiving a bike tune-up and 1% said getting a bike map or information on bike commuting as their favorite part. A sample of quotes related to these experiences includes:

- "Festival like atmosphere at the stop. Good weather was also welcome!"
- "Visiting the pit stop, talking to vendors, entering raffles, getting T-shirt."
- "Trying out the bus bike rack in a low-pressure area."
- "The bike experts who looked at your bike, the police who ride bikes and were there to talk to you about equipment etc..."
- "The tee shirt that gets worn regularly. I have editions dating back to 2002."
- "It was helpful to receive info about other biking opportunities in the area and to speak with the vendors."
- "The little spin the wheel type game. I love winning things even if it's something small…"
- "Maps! The bike lane map is very helpful, as is connecting with other organizations looking to improve my ride."
- "I was tremendously grateful to the volunteer repair staff, who gave my bike a look over, replaced some brake cables and my chain for free."
- "It's the best day of the year! you get presents for riding your bike to work!"
- "Swag! Free blinky lights!"
- "Free coffee, snacks tee shirts, and bike lights! Discount on WABA membership."
- "Snacks. It is the only day of the year that I get snacks on my daily commute for the pure fact that I biked."

Likely to Participate in a Future BTWD Event and Likely to Recommend BTWD – The overwhelming majority of respondents said they were likely to participate in another Bike to Work Day event in the future; 94% said they were very likely and 5% were somewhat likely to participate again (Figure 8). And nearly all respondents said they were likely to recommend BTWD to a friend; 88% were very likely and 11% were somewhat likely.

Figure 8
Likelihood to Participate in a Future BTWD Event and Likelihood to Recommend BTWD
(Likely to participate again n = 2,272; Likely to recommend n = 2,266)



Characteristics of Bicycles Used on Bike to Work Day

The 2019 BTWD survey added several new questions related to the type of bicycle used for the ride and what portion of the commute trip the participant had made by bicycle.

Type of Bicycle Used

Personal or Borrowed/Rented Bicycle – The overwhelming majority (93%) of respondents said they rode a personal bike that they owned on the 2019 BTWD event. Six percent rode a Capital Bikeshare (CaBi) bike. The remaining one percent rode either a bike they borrowed from a friend, family member, co-worker, or neighbor or a dockless bike from one of the companies such as Spin, Lime, Mobike, and Jump, which offer these bikes in the region.

Electric Bicycle – Nearly all (97%) of respondents said their bike was a traditional rider-powered bike. Electric bikes or e-bikes were used by only 3% of respondents.

Portion of Commute Bikes

Most (88%) BTWD participants rode their bikes the entire way from home to work on BTWD (Table 3). But 12% rode part of the way and used another mode of transportation for the remaining portion of the trip. For example, 5% said they drove to a Park & Ride lot, parked their vehicle, and biked the remaining portion of the commute trip. Another 5% rode their bikes from home to a transit stop or stations, where they boarded a bus or train for the remaining part of the trip. One percent of participants biked from home to a location where they met carpool partners and 1% took a bus or train for the beginning of the trip and biked from the transit stop to work.

Table 3
Portion of Commute Ridden by Bike on BTWD

Portion of Commute	Percentage (n = 2,209)
Rode entire trip from home to work	88%
Rode part of trip	12%
- Drove to Park & Ride lot then biked rest of the way to work	5%
- Biked from home to bus stop/train station	5%
- Biked from home to carpool meeting point	1%
- Took bus/transit, then biked rest of the way to work	1%

Bike in Conjunction with Transit – Metrorail, Metrobus, and some other transit agencies in the Washington metropolitan region permit transit riders to bring a bicycle on the transit trip, either on a bike rack attached to the bus or inside the train car. Some transit stations/stops also offer bike racks or bike lockers that riders can use to store their bikes at the stations/stop. The 6% of riders who said they used transit for part of their commute were asked if they left their bikes or took them on the vehicle. Half (50%) of these riders parked their bikes at the bus stop or train station. The remaining riders took the bike with them on the transit vehicle; 32% took the bike on a train and 18% took the bike on a bus.

Bike Commuting Before and After Bike to Work Day

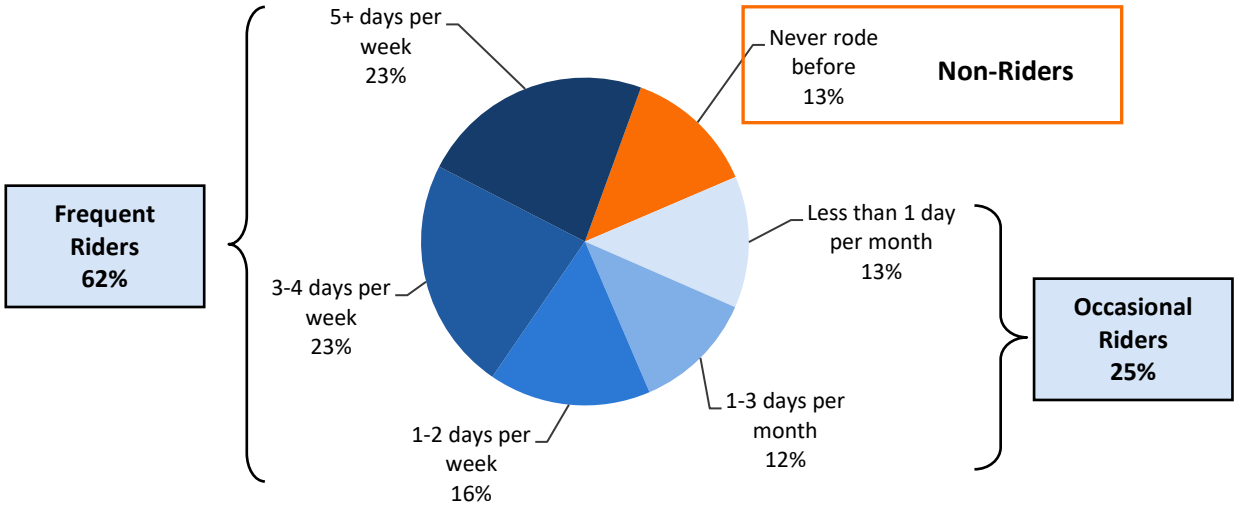
A primary objective of the BTWD survey was to determine the change in biking after the BTWD event. To determine a baseline against which to measure change, respondents were asked how often they rode to work before their first BTWD event. To gauge both the immediate impact of BTWD and the longer-term benefit, respondents were next asked about bicycle commuting during two time periods; May through September 2019, immediately after BTWD, and at the time the survey was conducted, in November 2019.

Frequency of Bike Commuting Before Participating in BTWD

Eighty-seven percent of respondents rode to work at least occasionally before they participated in their first BTWD event (Figure 9). More than six in ten (62%) were frequent riders, riding at least one day per week, 12% rode one to three days per month, and 13% rode occasionally, but less than one day per month. The remaining 13% of respondents said they did not commute by bike before they participated in a BTWD event.

First-time BTWD participants were less likely to be riders before the event than were past participants; only 81% of first-time participants rode to work before BTWD, compared with 90% of past participants.

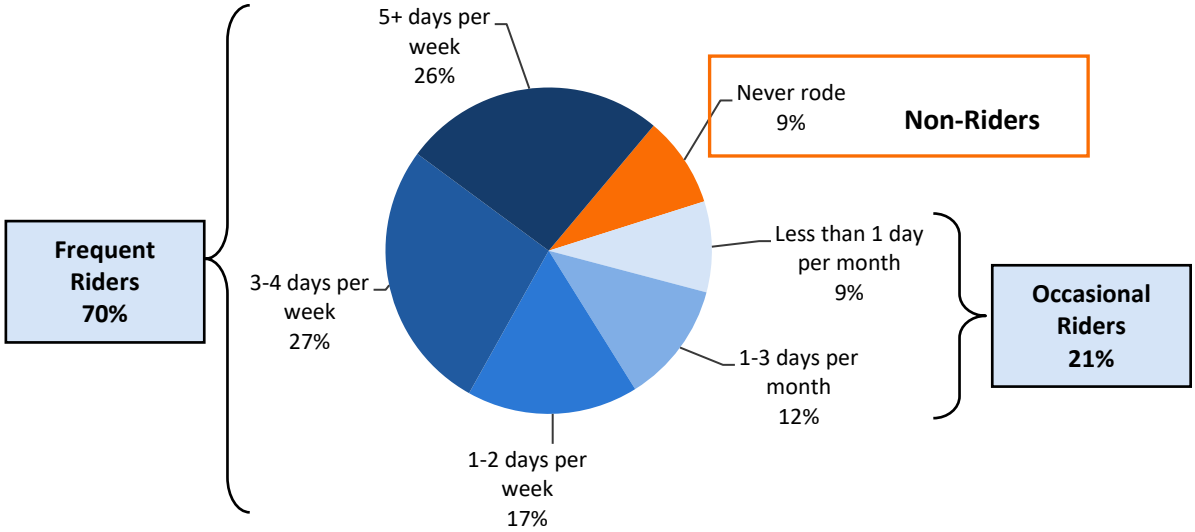
Figure 9
Frequency of Bike Commuting Before BTWD
(n = 2,250)



Frequency of Biking During Summer 2019 After BTWD

Between May and September 2019, after the 2019 BTWD event, 91% of respondents biked to work at least occasionally, an increase of 4% compared to the 87% who were biking before BTWD. As shown in Figure 10, the share of respondents who rode frequently also increased; 70% rode at least one day per week in the summer months, eight percentage points above the 62% who rode to work frequently before BTWD. Slightly more than two in ten (21%) respondents said they rode occasionally, but less than one day per week. The remaining 9% of respondents said they did not ride at all during the summer.

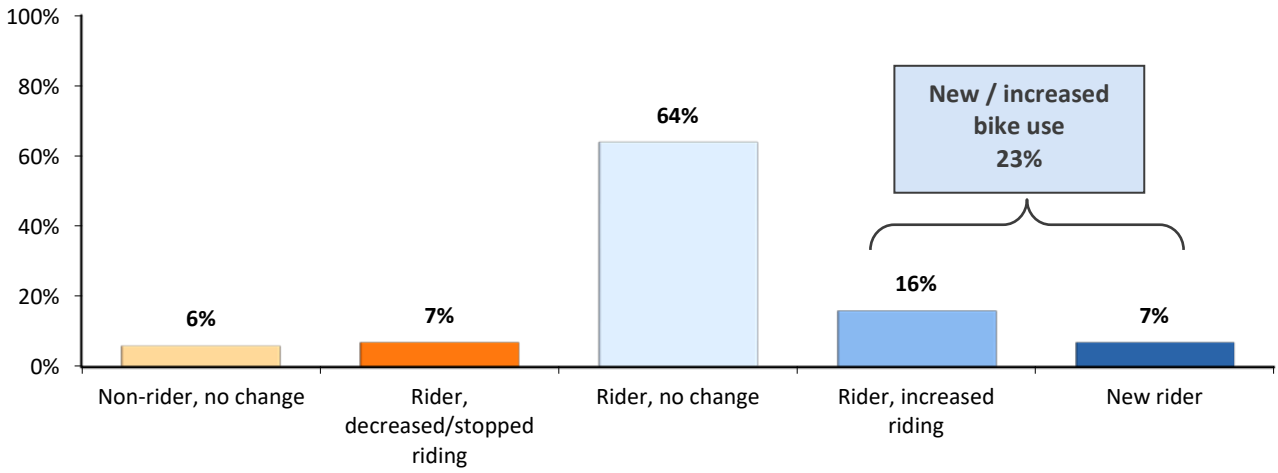
Figure 10
Frequency of Bike Commuting Summer 2019 (After BTWD)
(n = 2,257)



New and Increased Biking During Summer 2019 After BTWD

Analysis of each respondent's biking frequency before BTWD and during summer 2019 concluded that nearly one-quarter of respondents either started biking or increased biking (Figure 11) after BTWD. Seven percent of respondents were new riders; they did not commute by bike before their first BTWD event but did ride in the summer after BTWD. Sixteen percent had been biking to work before the event, but started biking more often after BTWD.

Figure 11
Changes in Bike Commuting from Before First BTWD to Summer 2019
(n = 2,237)



Sixty-four percent of respondents said they biked to work before BTWD and continued to bike the same number of days per week after the 2019 event; these were "no change" riders. Seven percent of respondents previously rode to work but decreased or stopped their riding during the summer of 2019. The remaining 6% said they did not bike to work before BTWD and still were not biking in the summer after BTWD ("no change" non-riders).

Average Bike Commute Frequency Before BTWD and During Summer 2019

Respondents who biked to work before the BTWD event biked an average of 2.6 days per week (Table 4). Respondents who biked during summer 2019 biked an average of 2.8 days per week, an increase of 0.2 days per week. The analysis also calculated Pre-BTWD and summer 2019 biking frequency for four groups of respondents: new riders, previous riders who increased their riding frequency, previous riders who decreased riding frequency, and previous riders who made no change in how often they rode. Table 3 also presents these results.

New Riders – Respondents who were new riders rode less frequently after BTWD (1.6 days per week) than did all riders (2.8 days per week). But their summer frequency represented an increase of 1.6 days per week from not riding at all.

Increased Riding – Respondents who rode before BTWD and increased their riding rode an average of 2.9 days per week in the summer, an increase of 1.8 days per week over their riding frequency of 1.1 days before BTWD.

Decreased/Stopped Riding – Some respondents who were biking to work before BTWD decreased or stopped riding during summer 2019. Their average frequency declined from 2.3 biking days per week to 1.1 days, a drop of 1.2 days per week.

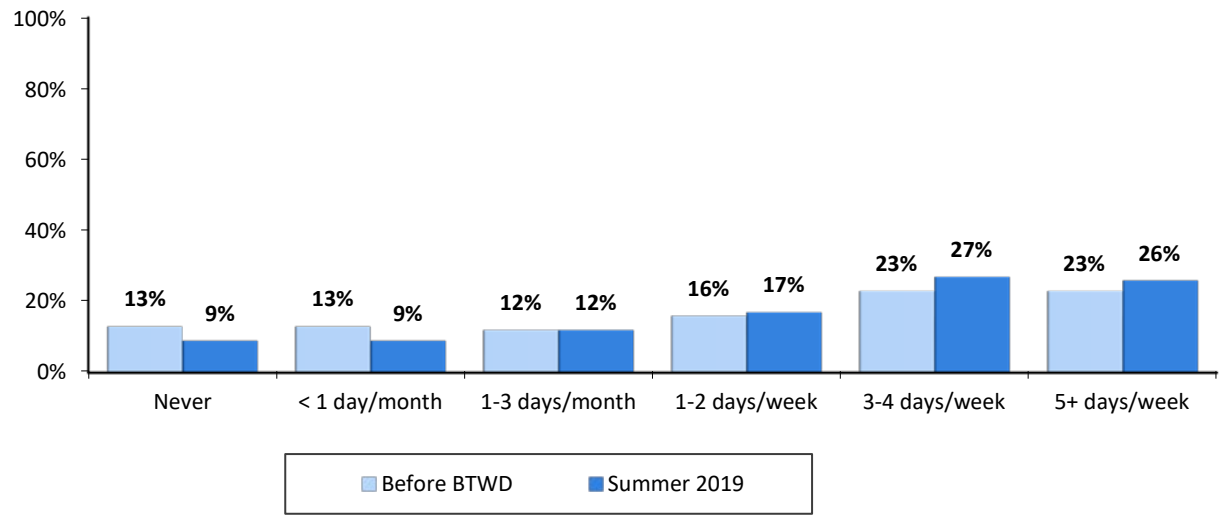
Previous Riders, No Frequency Change –Finally, a large share of respondents who rode to work before BTWD continued riding during the summer at the same frequency. These respondents had the highest riding frequency during both the before BTWD period (3.0 days) and during the summer after BTWD (3.0 days).

Table 4
Average Riding Frequency – Before BTWD and Summer 2019 After BTWD

Riding Status	Average Days/Week Riding to Work		
	Before BTWD	Summer After BTWD	Change
- All riders (Before BTWD n = 2,250, summer n = 2,257)	2.6	2.8	+0.2
- New riders after BTWD (n = 149)	0.0	1.6	+1.6
- Previous riders increased frequency (n = 367)	1.1	2.9	+1.8
- Previous riders decreased frequency (n = 167)	2.3	1.1	-1.2
- Previous riders no frequency change (n = 1,421)	3.0	3.0	0.0

The increase in average frequency between the before BTWD period and the summer of 2019 was generated by a combination of frequency changes across the four rider groups. The share of respondents who "never rode" dropped in summer 2019 from 13% to 9%, indicating that some new riders had started biking (Figure 12). But the percentages of riders who biked less than one day per month also fell, while the percentages in the most frequent categories (3 to 4 days per week and 5 or more days per week) both grew. This showed that some of the frequency growth likely was due to previous riders who increased their biking frequency and that the biking of new riders and existing riders who increased riding more than offset the frequency loss by the small share of riders who reduced or stopped riding.

Figure 12
Frequency of Bike Commuting Before BTWD Events and During Summer 2019
(Before BTWD n = 2,250, Summer 2019 n = 2,257)

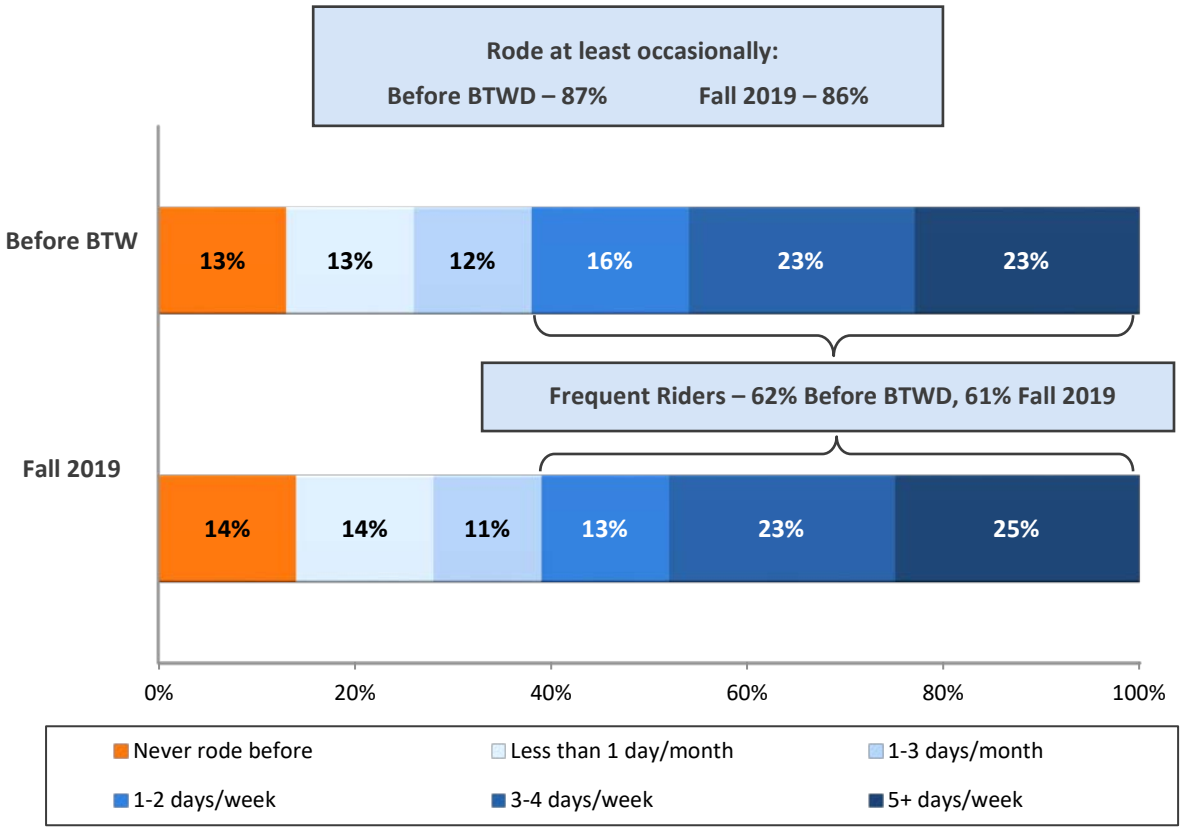


Bike Commuting During Fall 2019

Eighty-six percent of respondents were still biking to work at least occasionally during the late fall (early to mid-November), six months after the 2019 BTWD event (Figure 13). This was a drop-off from summertime riding, when 91% of respondents were riding, but was essentially equal to the percentage (87%) who biked to work before BTWD.

More than six in ten (61%) were regular riders in fall 2019, biking to work at least one day per week. About one in ten (11%) rode one to three days per month and 14% rode less than once per month. The remaining 14% said they did not ride to work at all in the fall.

Figure 13
Frequency of Bike Commuting Before BTWD Events and During Fall 2019
(Before BTWD n = 2,250, Fall 2019 n = 2,201)



The average biking frequency fell slightly from the summertime frequency of 2.8 days per week to 2.6 days per week during the late fall, the same riding frequency as was calculated for the before BTWD period (Table 5). Respondents who were new riders after BTWD rode less often during the late fall (1.4 days per week) than did respondents who had been riding before BTWD (2.8 days per week). Both new riders and respondents who had been riding before BTWD slightly decreased their riding from summer to fall. New riders decreased from 1.6 days per week in the summer to 1.4 days per week in the fall. Previous riders decreased their frequency from 2.8 days per week in the summer to 2.5 days per week in the fall.

Table 5
Average Riding Frequency – Summer and Fall After BTWD

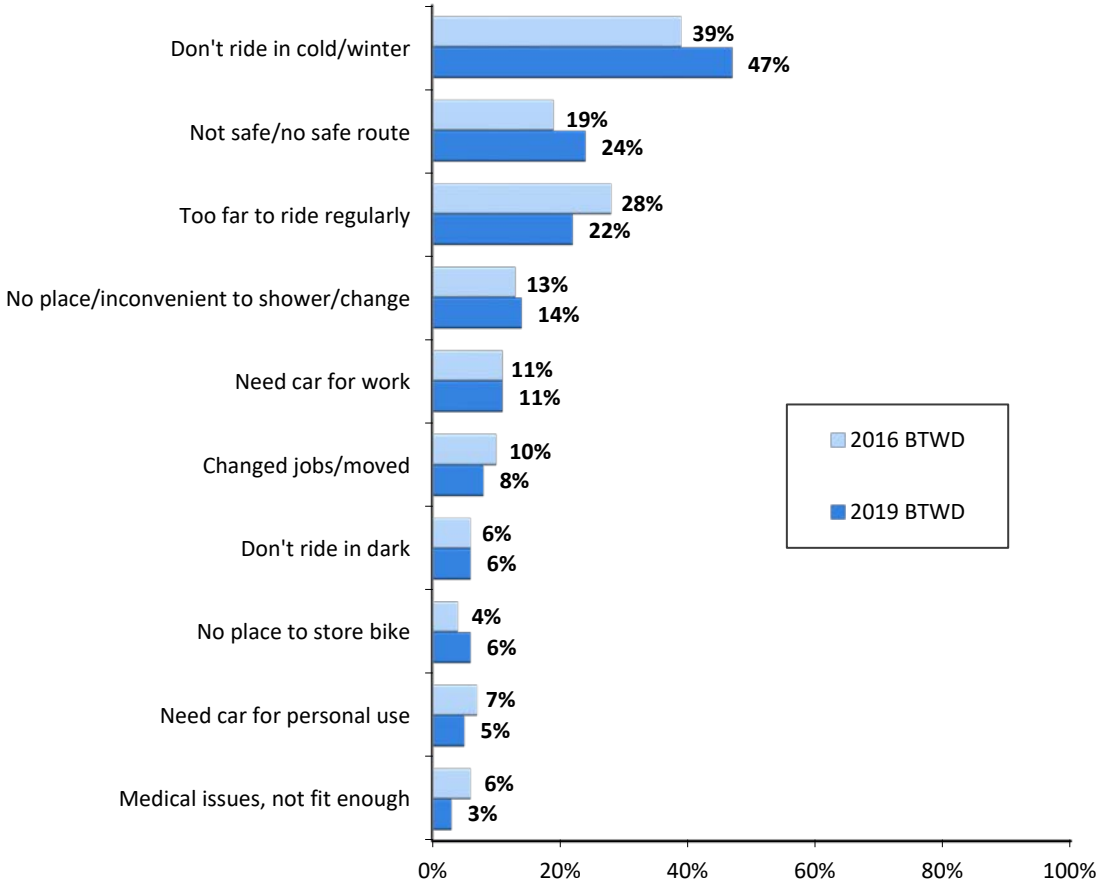
Riding Status	Average Days/Week Riding to Work		
	Summer	Fall	Change
- All riders (summer n = 2,257, fall n = 2,201)	2.8	2.6	-0.2
- New riders after BTWD (n = 149)	1.6	1.4	-0.2
- Previous riders (n = 1,955)	2.8	2.5	-0.3

Barriers to Increased Bike Commuting

Respondents who were riding to work less than three days per week at the time of the survey (November 2019) were asked why they did not ride or did not ride more often. Results for this question are shown in Figure 14.

Figure 14
Barriers to Riding to Work or More Frequent Riding – 2016 and 2019

(2016 BTW n = 1,807, 2019 BTW n = 1,222, Multiple responses permitted)



The top issues were weather, riding safety, and travel distance. Nearly half (47%) said they did not want to ride in inclement or cold/winter weather. Twenty-four percent of respondents said they did not feel safe riding or did not have a safe route and 22% said their commute was too far to ride on a regular basis. These also were the top three reasons noted by 2016 BTWD survey respondents.

Other common reasons cited in 2019 were that the respondents did not have a place to shower or change after riding (14%), needed a car for work (11%) or for personal use (5%), had moved or changed jobs (8%), didn't want to ride in the dark (6%), or did not have a place to store the bike during the day (6%). Three percent said they had a medical issue or were not fit enough to ride frequently.

Summertime riders who decreased their riding in the fall were more likely to note cold weather as a barrier. Six in ten (60%) of summer riders who decreased riding in the fall mentioned cold weather as a barrier, compared with 41% of summer riders who maintained their summer riding frequency into the fall months.

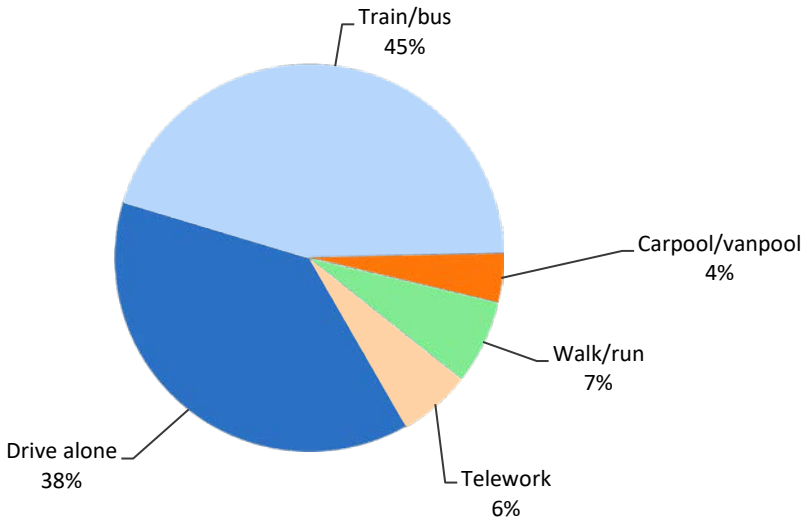
Commute Patterns on Non-Bike Days

Commute Mode on Non-Bike Days

Respondents who biked after BTWD, even if only occasionally, were asked how they traveled to work on days they did not bike to work. Just under four in ten (38%) drove alone to work on days they didn't bike (Figure 15). This was a slightly lower percentage than the 40% of respondents who used this mode on non-bike days in 2016.

The remaining six in ten respondents used another commute alternative on non-bike days; 45% rode a bus or train, 7% walked or ran, 4% carpooled or vanpooled, and 6% primarily teleworked.

Figure 15
Non-Bike Days Commute Modes – Respondents who Biked After BTWD
(n = 2,180)



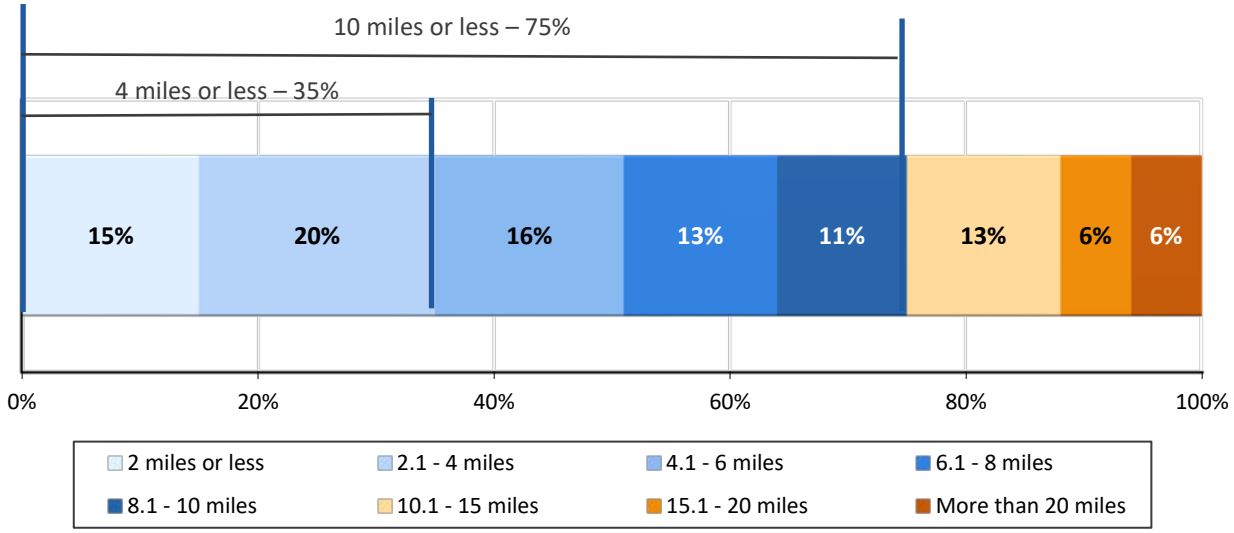
Capital Bikeshare as a Commute Mode

Two in ten (20%) respondents said they had used Capital Bikeshare during the past year to commute to or from work. This was the same percentage (21%) as reported using bikeshare to commute in 2016.

Travel Distance

BTWD survey respondents traveled an average of 8.4 miles one-way to work, a considerably shorter distance than the 17.1-mile average one-way distance of all commuters in the Washington metropolitan region (2019 SOC survey). One-third (35%) of respondents lived within four miles of their work location and 75% lived within ten miles of their work site (Figure 16). Twenty-five percent of respondents commuted more than 10 miles to work.

Figure 16
Commute Distance
(n = 2.126)



Bike Commute Assistance Offered by Employers

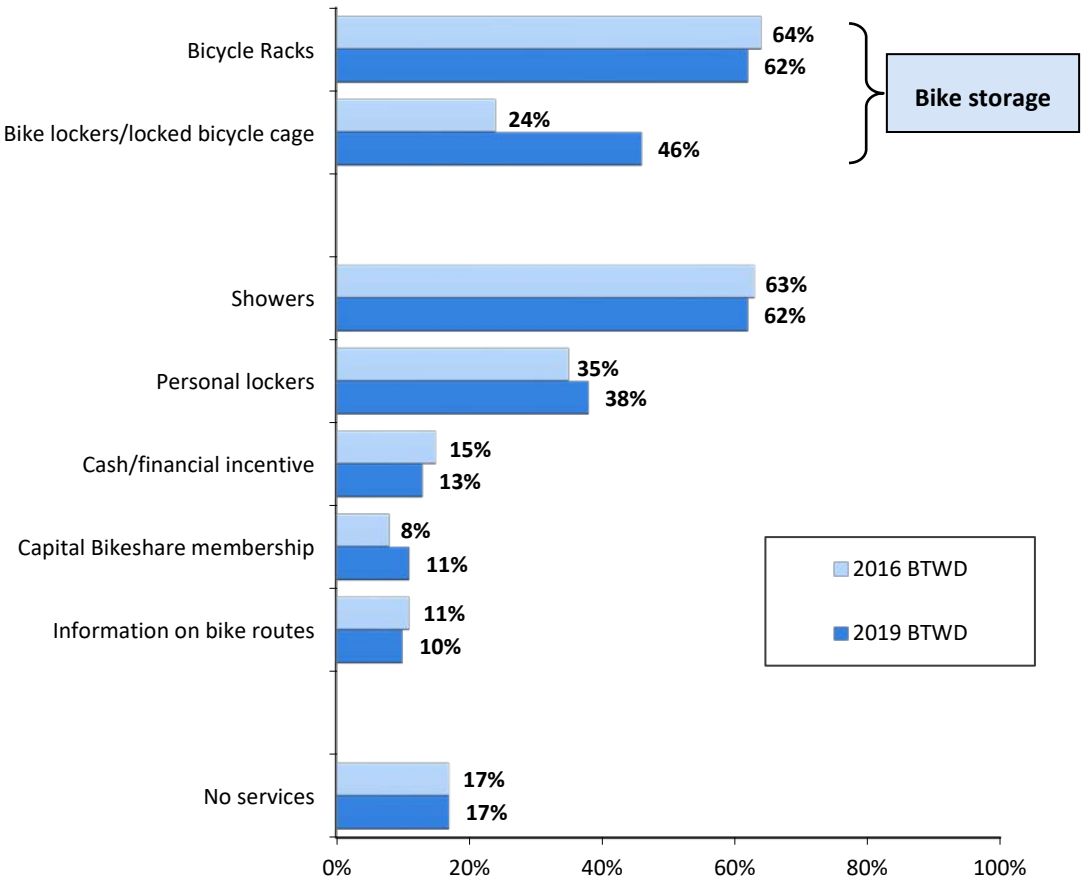
Commute Assistance Services

More than eight in ten (83%) respondents said their employers offered some type of commute assistance information, services, or facilities for employees who biked to work. The most common service was bike racks, offered by 62% of employers (Figure 17). Nearly half (46%) said the employer offered a secure form of bicycle storage such as lockers or a locked bicycle cage or permitted employees to store their bicycles in their offices or workstations. The 2019 availability of secure bike storage was dramatically higher than was noted in 2016; in 2016, only 24% of respondents said secure bike storage was offered.

A large share of respondents also noted that their employers offered personal convenience services including showers (62%) and personal lockers or a locker room (38%). Thirteen percent of respondents said their employers offered a cash or financial incentive for bicyclists, 11% reported access to a Capital Bikeshare membership at work, and 10% said their employers offered bike route information.

With the exception of much greater access to secure bike storage, as noted above, the percentages of respondents who said each service was available were essentially the same in 2019 as observed in the 2016 BTWD survey.

Figure 17
Bicycle Commute Assistance Services Offered at Work – 2016 and 2019
(2016 n = 3,537, 2019 n = 2,213; multiple responses permitted 0



Respondents who did not ride after BTWD or who rode infrequently (less than one time per month) were less likely to report having bicycle support services at work. Only 75% of infrequent riders had bicycle services at work, compared with 86% of regular riders (rode at least one day per week). Non-riders/infrequent riders also were less likely to mention access to several individual services:

- **Bicycle Racks** – 56% of non-riders/infrequent riders versus 65% of regular riders
- **Bicycle Lockers/Locked Bike Cage** – 33% of non-riders/infrequent riders versus 53% of regular riders
- **Personal Lockers/Locker Room** – 31% of non-riders/infrequent riders versus 42% of regular riders
- **Showers On-site** – 54% of non-riders/infrequent riders versus 67% of regular riders
- **Cash/Financial Benefits for Bicyclists** – 8% of non-riders/infrequent riders versus 14% of regular riders

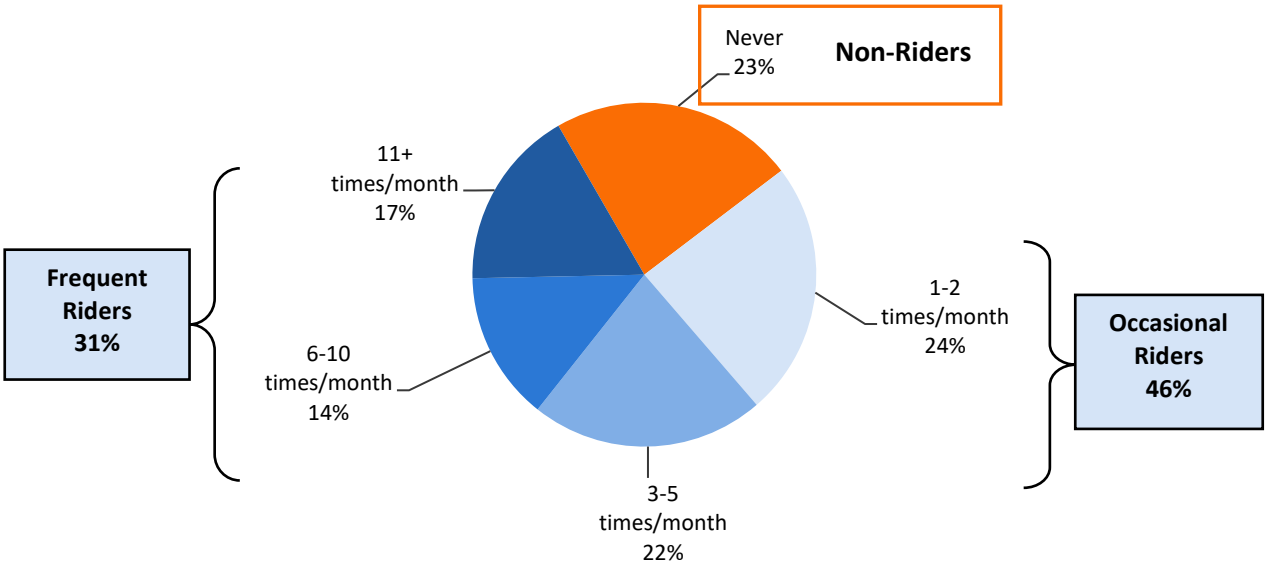
Requested "Biking to Work in the Washington Area Guide"

Eight percent of respondents said they had requested a copy of the bicycling guide produced by Commuter Connections, "Biking to Work in the Washington Area Guide." The remaining 92% said they had not requested the guide. This was the same result as found in the 2016 BTWD survey.

Use of Bike for Non-commute Trips After Participating in BTWD

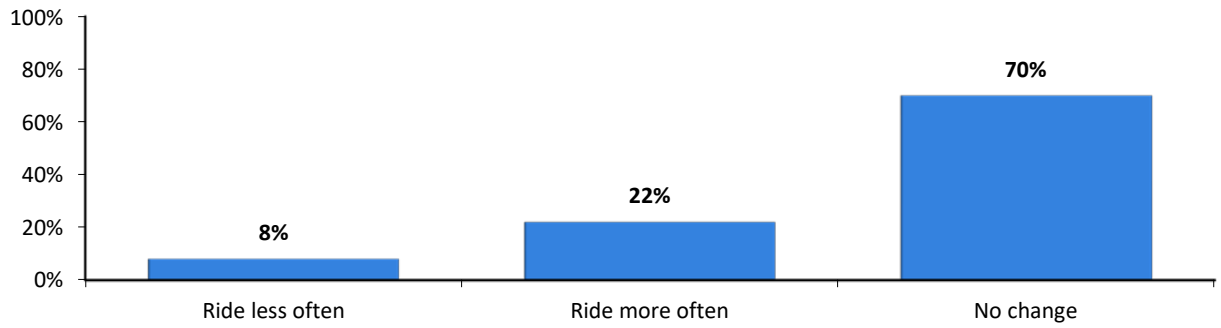
Although the primary focus of the survey was on commuting patterns, all respondents also were asked about their use of bike for non-commute trips, such as for errands, shopping, social visits, meetings, or personal appointments. About three-quarters made at least one non-commute trip by bicycle in the past month (Figure 18). Forty-six percent rode a bicycle for a non-commute trip between one and five times in the past month and 31% made at least six non-commute bicycle trips. Twenty-three percent did not ride a bike for a non-commute trip at all during the past month.

Figure 18
Frequency of Bike Use for Non-Commute Trips
(n = 2,220)



Twenty-two percent of respondents said they increased how often they biked for non-work trips after BTWD (Figure 19). Eight percent rode less often for non-commute trips after BTWD. Most (70%) respondents did not make any changes in their use of biking for non-commute trips.

Figure 19
Changes in Use of Bike for Non-Work Trips After BTWD
(n = 2,174)



Suggestions to Improve Bike to Work Day

Finally, respondents were given an opportunity to offer suggestions for how Bike to Work Day could be improved. About one-quarter of respondents (564 respondents) offered open-ended suggestions. About two in ten of those who wrote comments gave compliments to the organizers. Others common suggestions are grouped below in four broad categories: pit stops, incentives, ride assistance/general bicycling advocacy, and BTWD event/promotion. Note that the numbers of responses reflect the count of respondents who made each suggestion, rather than the percentage of respondents.

Pit stops	Response Count
• Pit stops earlier/later hours, off-peak hours	42
• More pit stops, stops at specific locations	15
• Afternoon/evening pit stops	15
• Other pit stop suggestions	26

Incentives	
• Improve/replace t-shirts with other items	56
• More food, healthy food, equal food at all stops	39
• Larger/smaller t-shirts/more t-shirts, send t-shirts before rides	26
• More prizes, bigger prizes, more frequent raffles	19
• Bike tune-ups/repairs, bike gear	15
• Other prize/give-away suggestions	13

Ride Assistance/General Bicycling Advocacy	
• Better bike infrastructure, enforcement of traffic laws, bike etiquette	62
• Provide safe riding tips, routes, safety suggestions, safety swag	26
• Signage for riders and drivers, close streets to cars	31
• Organize/publicize group rides/bike buddies/meeting locations	12

BTWD Event/Promotion	
• Hold events more often, bike week, bike month	52
• More involvement of employers, public agencies/officials, vendors	23
• Advertise more, marketing suggestions	21
• Outreach to non-riders, kids, retirees, non-traditional riders	19

Pit Stops

Pit stops were a common item for suggestions. Numerous riders made suggestions for earlier or later hours, for pit stops in the afternoon or evening hours, and for pit stops at off-peak/midday hours. Many of these respondents noted that their work hours did not conform to typical rush hour commuting so the pit stops either were not yet open when they rode past or that they arrived as pit stops were closing down. Some respondents who arrived later noted that the food, t-shirts, and other free items often were no longer available.

Another common pit stop suggestion was for more pit stops or pit stops in specific locations, but other respondents recommended the opposite – consolidating smaller pit stops into a single larger pit stop to make the pit stop activities more substantial.

Respondents also mentioned that they had difficulty finding the pit stops, didn't know what activities would be offered at various pit stops, and wanted more "festivities," such as music. Some respondents who visited more than one pit stop commented on inconsistencies in what was offered or provided at various pit stops. These concerns seemed most common among respondents who said they visited suburban stops.

Incentives

Respondents made suggestions about the incentives, services, and free items given away at the event. Suggestions about food focused on offering more food, healthy food, similar food at all pit stops, and other ideas. Respondents particularly mentioned the need to have food available throughout the entire pit stop activity hours. Late arriving riders commented that they missed getting food. Other food-related suggestions included bringing food trucks to pit stops and partnering with local restaurants for afternoon/evening happy hour activities.

Ideas related to T-shirts also were common. Many respondents noted that there were no small or medium shirts, or no shirts at all, when they arrived at the pit stop. Others recommended that shirts be sent to pre-registered riders before the event so they could be sure of receiving one and could wear them to the event. A large number of respondents made comments about the type of shirt (cotton, tech /sport fabric, brighter color) or about items they would prefer to receive in lieu of a shirt. One interesting idea was to print a message on the back of the shirt that would be visible to drivers, saying some version of "I rode my bike to work." Other suggestions related to incentives included having more prizes, bigger-value or "higher-quality" prizes, more frequent raffles, offering bike maintenance and bike gear, safety gear, and other preferences. Some respondents also highlighted a preference for environmentally-friendly incentives and packaging with low environmental impact.

Ride Assistance/General Bicycling Advocacy

A large share of respondents made suggestions related to the riding experience. These included riders who wanted more information on bike safety, safe routes, and other safety-related information. Many riders noted that promoting safety could raise the visibility of biking on local roadways, biking etiquette, and driver-bicyclist interaction, not only on the BTWD event but for the future as well.

Some riders also made suggestions for improvements to bike infrastructure, such as development of more bike paths/trails and lighting and maintenance of bike trails, and for advocacy for local governments to develop bike infrastructure. Included in this category also were suggestions for road closures and/or use of temporary barriers to protect bike lanes on the day of the event to enhance biking safety and encourage new and inexperienced riders. Another suggestion to help new riders was to organize and publicize opportunities for group rides from pit stop locations for riders who were traveling in the same direction. Experienced riders also noted this suggestion because they simply enjoyed riding with others.

General Event/Promotion

A popular comment in the general event/promotion category was to hold BTWD more than once per year and/or to extend the event to a full week or month. Many wanted a fall event in addition to the spring event. Some respondents also noted that they would like to see more advertising of the event, both to potential riders and to drivers to help them understand and be watchful of bicyclists during the event. Respondents made suggestions also to engage employers and public officials more in the event and in bicycling generally. Finally, some respondents made suggestions to conduct outreach to non-riders, retirees, children, and to commuters who were not in the traditional mold of a bicycle commuter, such as those who teleworked.

Appendix A – Survey Questionnaire

Bike to Work Day Survey – 2019
Questionnaire programmed for internet administration

The Metropolitan Washington Council of Governments and the Washington Area Bicyclist Association are conducting this survey to learn about the commute travel of participants in recent Bike to Work Day events held in the Washington DC metropolitan region. Please take a few minutes to answer and submit this brief questionnaire. If you have questions, call us at (800) 745-RIDE. Thanks for your help.

To advance to the next page in the survey, click the forward arrow box. On subsequent pages, if you want to return to a previous page, use the back arrow at the bottom of the page. Do not use the forward or back buttons on your browser.

1 How did you hear about the 2019 Bike to Work Day? (Check all that apply)

1 Received a flyer/brochure
2 Saw a newspaper article or advertisement
3 My employer/boss told me
4 Family member, co-worker, or friend told me
5 Heard it on the radio or television
6 Saw sign or banner on bus
7 Saw notice on the internet
8 Saw a Tweet or a Facebook post/saw on other social media
99 Other _____

1a What was your favorite part of the 2019 Bike to Work Day event experience?

_____

1b Bike to Work Day is an annual event. How likely are you to register for a future Bike to Work Day event?

1 Not likely
2 Somewhat likely
3 Very likely
9 Not sure

1c How likely are you to recommend Bike to Work Day to a friend?

1 Not likely
2 Somewhat likely
3 Very likely
9 Not sure

2 Was 2019 the first year you participated in the Bike to Work Day event?

1 Yes
2 No, I also participated in (check all that apply):
2018
2017
2016
2015
Event before 2015

2a What bike did you use for your ride on the 2019 Bike to Work Day? Please select only one option.

1 Personal bike that I own
2 Bike I borrowed from a friend, family member, neighbor, or co-worker
3 Capital Bikeshare (CaBi) bike
4 Dockless bike (e.g., Spin, Lime, Mobike, Jump)
5 Bike I rented from a bike shop or other bike rental service

2b Was the bike you used an electric bicycle or e-bike?

1 Yes
2 No
9 Not sure

2c Did you bike the entire trip from home to work or did you bike part of the trip? Please select only one option.

1 Biked the entire trip from home to work **(SKIP TO Q3)**
2 Biked from home to a bus stop or train station **(ASK Q2d)**
3 Biked from home to a location where I met carpool or vanpool partners **(SKIP TO Q3)**
4 Drove to a Park & Ride lot/other parking location, then biked the rest of the way to work **(SKIP TO Q3)**
5 Other (please specify) _____ **(SKIP TO Q3)**
9 Not sure **(SKIP TO Q3)**

2d Did you leave your bike at the transit stop/station or take it on the transit vehicle?

1 Parked my bike in a locker or rack at the bus stop/train station
2 Took my bike with me on a bus
3 Took my bike with me on a train
9 Not sure

3 Next, please answer some questions about biking to work before and after Bike to Work Day. On average, how often did you ride your bicycle to work <u>before</u> your <u>first</u> Bike to Work Day event?

1 Never rode my bike to work before my first BTWD
2 Less than 1 day per month
3 1-3 days per month
4 1-2 days per week
5 3-4 days per week
6 5 days per week
7 Other _____

4 On average, how often did you ride your bicycle to work during May – September 2019, <u>after</u> the 2019 Bike to Work Day event?

1 Never rode my bike to work during May-September 2019
2 Less than 1 day per month
3 1-3 days per month
4 1-2 days per week
5 3-4 days per week
6 5 days per week
7 Other _____

5 How often do you bicycle to work <u>now</u>?

1 Never ride my bike to work now
2 Less than 1 day per month
3 1-3 days per month
4 1-2 days per week
5 3-4 days per week **(SKIP TO Q7)**
6 5 days per week **(SKIP TO Q7)**
7 Other _____

6 Why do you not ride your bicycle to work or not ride more often now? (check all that apply)

1 Don't feel safe/no safe route
2 Don't like to ride in winter/cold weather
3 Need my car for work
4 Too far to ride on a regular basis
5 Changed jobs/moved
6 No place to shower or change after riding
7 No place to store my bicycle
8 Other _____

7 On days you do not ride your bicycle, how do you <u>usually</u> commute to work? (If you use more than one method, check the one you use MOST OFTEN)

1 Drive alone
2 Carpool
3 Vanpool
4 Walk
5 Ride Metrorail
6 Ride a bus
7 Telecommute/telework
8 Ride a commuter train (MARC, VRE, AMTRAK)
9 Ride Uber/Lyft/Via
10 e-Scooter
19 Other _____

8 How many miles do you travel from home to work (one-way)? _____ miles

9 In the past month, how many times did you ride your bicycle for a trip other than getting to or from work, such as trips for errands, shopping, social visits, meetings, or personal appointments? (Please also exclude trips you made SOLELY for exercise/recreation)

1 Never
2 1 – 2 times
3 3 – 5 times
4 6 – 10 times
5 More than 10 times
9 Don't know

10 Do you ride your bicycle for non-commute trips more often, less often, or about the same as before you first participated in a Bike to Work Day event? (Please check ONLY ONE)

1 Ride more often for non-commute trips
2 Ride less often for non-commute trips
3 Ride about the same - did not change how often I ride for non-commute trips
9 Don't know

11 Have you used Capital Bikeshare to commute to or from work within the past 12 months?

1 Yes
2 No

12 Does your employer offer any of the following commute assistance information or services to employees who bike to work? (Check all that apply)

1 No, my employer does not offer any of these services
2 Information on bicycle routes
3 Bicycle racks
4 Secure bike storage (ex. bike rack near security, bicycle lockers, locked bike cage)
5 Personal lockers, locker room
6 Showers on-site
7 Cash or other financial benefits for employees who bicycle to work
8 Capital Bikeshare Membership/discount
9 Other, please describe _____

13 Have you ever requested a copy of the Commuter Connections pamphlet "Biking to Work in the Washington Area Guide" from the Metropolitan Washington Council of Governments?

1 Yes
2 No

DEMOGRAPHICS

Finally, the following questions are for classification purposes only. They will not be used to identify you in any way and this information will not be disclosed for any individual who responds to the survey.

14 About how many employees work at your worksite?

1 1 – 25
2 26 – 50
3 51 – 100
4 101 – 250
5 251 – 999
6 1,000 or more
9 Prefer not to answer

15 What type of employer do you work for?

1 Federal agency
2 State, or local government agency
3 Non-profit organization/association
4 Private sector employer
5 Other (SPECIFY) _____
9 Prefer not to answer

16 In what zip code is your workplace? _____

17 In what zip code is your home? _____

18 Which of the following groups includes your age?

1 under 18
2 18 – 24
3 25 – 34
4 35 – 44
5 45 – 54
6 55 – 64
7 65 or older
9 Prefer not to answer

19 Do you consider yourself to be Latino, Hispanic, or Spanish?

1 Yes
2 No
9 Prefer not to answer

20 Which one of the following best describes your racial background (Please select ONLY ONE response)

1 White
2 Black or African-American
3 American Indian or Alaska Native
4 Asian
5 Native Hawaiian or Other Pacific Islander
6 Other (SPECIFY) _____
9 Prefer not to answer

21 Please indicate the category that best represents your household's total annual income.

1 less than $20,000
2 $20,000 - $29,999
3 $30,000 - $39,999
4 $40,000 - $59,999
5 $60,000 - $79,999
6 $80,000 - $99,999
7 $100,000 - $119,999
8 $120,000 - $139,999
9 $140,000 - $159,999
10 $160,000 - $179,999
11 $180,000 - $199,999
12 $200,000 or more
19 Prefer not to answer

22 Are you …?

1 Female
2 Male
3 Other
4 Prefer not to answer

23 If you have any suggestions for how we could improve Bike to Work Day, please provide them below.

_____
_____

Thank you for completing this questionnaire. Your responses will be confidential. Please click on the "Submit" button below.

Bike to Work Day in 2020 will be held on May 15, 2020. Please visit the event website at www.biketowork-metrodc.org.

_____