

# BIKE TO WORK DAY 2017

## SURVEY OF PARTICIPANTS

### SUMMARY

DRCOG conducted an online survey of 823 randomly selected Bike to Work Day participants who registered on the Bike to Work Day site. Data were collected in early October. The sampling margin of error for a sample of 823 respondents is plus or minus 3 percentage points at the 95 percent confidence level.

### PRIMARY SURVEY OBJECTIVES

1. Define the characteristics of new and repeat participants, comparing them in terms of:
  - How they learned about BTWD
  - Bicycle commuting before Bike to Work Day
  - Motivations for participating
  - Impact of participation on bicycle travel
  - Awareness of Way to Go and DRCOG
2. Estimate the additional vehicle miles reduced by BTWD participants

### NEW PARTICIPANTS AND REPEAT PARTICIPANTS

For 38 percent of participants, 2017 was their first year to participate in Bike to Work Day.

New participants were more likely than repeat participants:

- to learn about BTWD from their employers or from friends and co-workers.
- to say that they never rode to work before Bike to Work Day or rode only occasionally.
- to participate because they wanted to try bicycle commuting.
- to be female.
- to be younger, between the ages of 18 and 34.
- to have household incomes under \$100,000 per year.
- to use a commute option other than driving alone on days when they do not bike to work.
- to be unaware of Way to Go or DRCOG.

New participants commuted by bicycle less frequently than repeat participants both before and after Bike to Work Day. However, new participants showed a larger increase in bicycle commuting. Bicycle commute days increased by 11 percent among new participants and only 3 percent among repeat participants, and 6 percent overall.

New participants took fewer other bicycle trips per month than repeat participants both before and after Bike to Work Day. However, new participants showed a larger increase in other trips by bicycle. Other bicycle trips increased by 16 percent among new participants and only 8 percent among repeat participants, and 10 percent overall. Other bicycle trips include things such as shopping, entertainment, and dining. Bicycle rides that are purely recreational are not included.

New and repeat participants are similar in that they:

- did not differ significantly in terms of how participation influenced their attitudes toward bicycle commuting. Sixty-one percent of all participants said Bike to Work Day motivated them to travel more often by bicycle, either for work commuting, other types of trips, or both.
- travel a little more than nine miles from home to work.
- work in occupations that are professional, managerial or administrative.
- are likely to have college degrees.

When measured by change in bicycle travel, Bike to Work Day achieved its greatest success among new male participants, followed by new and repeat female participants.

Among both new and repeat participants, males bicycled to work more frequently than females, both before and after Bike to Work Day. However, three segments had the largest increases in bicycle commuting frequency after Bike to Work Day:

- New male participants increased their bicycle commuting frequency by 13 percent.
- New female participants increased their bicycle commuting frequency by 8 percent.
- Repeat female participants also increased their bicycle commuting frequency by 8 percent.

Male participants also bicycled more frequently than females for other types of trips before and after Bike to Work Day. The same three segments had the largest increases in bicycling for other types of trips after Bike to Work Day.

- New male participants and new female participants increased bicycling for other types of trips by 16 percent.
- Repeat female participants increased bicycle commuting by 15 percent.

#### THE IMPORTANCE OF POSITIONING

It is important to promote Bike to Work Day as a way to try bicycle commuting and as a healthy way to get to work:

- Although only 5 percent of all participants participated because they wanted to try bicycle commuting, the frequency of bicycle commuting by this group increased by 234 percent after Bike to Work Day.
- Commuters who participated for health and exercise increased their frequency of bicycle commuting by 19 percent after Bike to Work Day.

Competing in the business challenge was also important. Bicycle commuting increased by 20 percent after Bike to Work Day among commuters who participated to compete in the business challenge.

## PROJECTED ADDITIONAL VEHICLE MILES REDUCED BY PARTICIPANTS

The additional vehicle miles reduced (VMR) by participants (registered and unregistered) over a 12-month period are projected to be:

- 833,807 VMR from new participants
- 1,271,929 VMR from repeat participants
- 2,105,736 VMR from all participants

The total number of additional annual vehicle miles reduced by Bike to Work Day participants increased from 2,016,072 in 2016 to 2,105,736 in 2017, a 4 percent increase.

## SURVEY METHODS

DRCOG's survey of 2017 Bike to Work Day participants began with a sample of 3,843 registered participants, randomly drawn from the sampling frame of 19,691 participants. After an initial invitation email and two reminders, the final sample was 823 respondents, representing a response rate of 21 percent. The sampling margin of error for a sample of 823 respondents is plus or minus 3 percentage points at the 95 percent confidence level.

Data were collected in early October using an online questionnaire on the Survey Monkey platform.

## RESPONSE

Sent	3,843
Opened	1,984 (52%)
Click through	870 (23%)
Completes	823 (21%)

## NEW AND REPEAT PARTICIPANTS

For 38 percent of participants, 2017 was their first year to participate in Bike to Work Day.

### HOW THEY ARE DIFFERENT

Most participants learned about BTWD through recommendations from employers and friends/co-workers and emails. ***In the case of new participants, employers had the greatest impact.*** Way to Go targets past participants every year with an intense email campaign, and ***most repeat participants were reached through email.*** Facebook, posters, exhibits and AM/FM radio also had measurable impact, but other media such as Web page ads, digital radio, transit ads, and twitter each reached 5 percent or less of participants.

### HOW DID YOU HEAR ABOUT BIKE TO WORK DAY THIS YEAR? (MULTIPLE RESPONSES PERMITTED)

Media	New Participants	Repeat Participants	All Participants
Employer	45%	41%	50%
Friend/co-worker	31%	20%	24%
Email	25%	65%	50%
Facebook	9%	10%	10%
Poster	7%	9%	8%
Exhibit or table at event	6%	4%	5%
AM/FM radio	5%	7%	6%

***New participants were more likely to say that they never rode to work before Bike to Work Day or rode only occasionally. Repeat participants were more likely to be frequent or occasional bike commuters before Bike to Work Day, especially during the warm months of the year.***

### CHOOSE THE ONE STATEMENT BELOW THAT BEST DESCRIBES YOU BEFORE PARTICIPATING IN BIKE TO WORK DAY

Pre-BTWD Commuting	New Participants	Repeat Participants	All Participants
I never rode to work.	38%	17%	25%
I rode to work occasionally, when it was convenient or the weather was nice.	25%	35%	31%
I rode to work frequently in the spring/summer/early fall months, but less often or not at all in the winter.	20%	26%	24%
I rode to work frequently, year-round.	17%	22%	20%
<b>Totals</b>	100%	100%	100%

***New participants were more likely than others to participate because they wanted to try bicycle commuting. Repeat participants were more likely to be motivated by a desire to raise awareness and support bicycle commuting. Both new and repeat participants were highly motivated by the opportunity to participate in something fun.***

**WHICH ONE OF THE STATEMENTS BELOW BEST DESCRIBES WHY YOU DECIDED TO PARTICIPATE IN BIKE TO WORK DAY THIS YEAR?**

Reason for Participating	New Participants	Repeat Participants	All Participants
<b>Just a fun thing to do</b>	39%	36%	37%
<b>Raise awareness and support bicycle commuting</b>	16%	30%	25%
<b>Health/exercise</b>	10%	12%	11%
<b>Commute more often by bicycle</b>	10%	9%	9%
<b>Try bicycle commuting</b>	11%	2%	5%
<b>Compete in the business challenge</b>	6%	3%	4%
<b>Win prizes</b>	1%	2%	2%
<b>Totals</b>	100%	100%	100%

It is important to promote Bike to Work Day as a way to try bicycle commuting and as a healthy way to get to work:

- Although only 5 percent of all participants participated because they wanted to try bicycle commuting, the frequency of bicycle commuting by this group increased by 234 percent after Bike to Work Day.
- Commuters who participated for health and exercise increased their frequency of bicycle commuting by 19 percent after Bike to Work Day.

Competing in the business challenge was also important. Bicycle commuting increased by 20 percent after Bike to Work Day among commuters who participated to compete in the business challenge.

***New participants commuted by bicycle less frequently than repeat participants both before and after Bike to Work Day. However, new participants showed a larger increase in bicycle commuting. Bicycle commute days increased by 11 percent among new participants and only 3 percent among repeat participants, and 6 percent overall.***

**BICYCLE COMMUTE DAYS PER MONTH**

	New Participants	Repeat Participants	All Participants
<b>Bicycle commute days per month before Bike to Work Day</b>	6.29	8.05	7.39
<b>Bicycle commute days per month after Bike to Work Day</b>	7.01	8.32	7.82
<b>Change in bicycle commute days per month</b>	.72 (+11%)	.27 (+3%)	.43 (+6%)

***New participants took fewer other bicycle trips per month than repeat participants both before and after Bike to Work Day. However, new participants showed a larger increase in other trips by bicycle. Other bicycle trips increased by 16 percent among new participants and only 8 percent among repeat participants, and 10 percent overall. Other bicycle trips include things such as shopping, entertainment, and dining. Bicycle rides that are purely recreational are not included.***

**OTHER BICYCLE TRIPS PER MONTH**

	New Participants	Repeat Participants	All Participants
<b>Other bicycle commute trips per month before Bike to Work Day</b>	4.34	5.74	5.22
<b>Other bicycle commute trips per month after Bike to Work Day</b>	5.02	6.20	5.76
<b>Change in other bicycle trips per month</b>	.68 (+16%)	.46 (+8%)	.54(+10%)

***New participants are more likely than repeat participants to be female.***

**GENDER**

Gender	New Participants	Repeat Participants	All Participants
<b>Male</b>	48%	58%	54%
<b>Female</b>	48%	40%	43%
<b>Refused</b>	4%	2%	3%
<b>Totals</b>	100%	100%	100%

***New participants are younger than repeat participants.***

**AGE**

Age Group	New Participants	Repeat Participants	All Participants
<b>18 - 24</b>	9%	1%	4%
<b>25 - 34</b>	42%	24%	31%
<b>35 - 44</b>	20%	24%	23%
<b>45 - 54</b>	16%	24%	21%
<b>55 - 64</b>	10%	23%	18%
<b>65 or older</b>	1%	4%	3%
<b>Refused</b>	2%	1%	1%
<b>Totals</b>	100%	100%	100%

***New participants have lower household incomes than repeat participants.***

**INCOME**

Income Category	New Participants	Repeat Participants	All Participants
<b>Less than \$25,000</b>	4%	2%	2%
<b>\$25,000-\$49,000</b>	14%	8%	10%
<b>\$50,000-\$99,999</b>	37%	29%	32%
<b>\$100,000-\$149,999</b>	20%	25%	23%
<b>\$150,000 or more</b>	16%	24%	21%
<b>Refused</b>	10%	13%	12%
<b>Totals</b>	100%	100%	100%

***New participants are less likely to drive alone when they do not commute by bicycle, and more likely to carpool, use transit, or walk.***

ON DAYS WHEN YOU DO NOT RIDE A BICYCLE TO WORK, WHICH ONE MODE OF TRANSPORTATION ARE YOU MOST LIKELY TO USE FOR YOUR COMMUTE TO WORK?

Mode	New Participants	Repeat Participants	All Participants
<b>Drive alone</b>	57%	67%	63%
<b>Carpool</b>	9%	6%	7%
<b>Transit</b>	24%	21%	22%
<b>Walk</b>	6%	3%	4%
<b>Work at home</b>	4%	3%	3%
<b>Always commute by bicycle</b>	1%	2%	1%
<b>Totals</b>	100%	100%	100%

***Repeat participants are much more aware of Way to Go, and much more aware of DRCOG.***

BEFORE PARTICIPATING IN THIS SURVEY, WERE YOU AWARE THAT THE WAY TO GO PROGRAM ORGANIZES AND PROMOTES BIKE TO WORK DAY?

Aware of Way to Go?	New Participants	Repeat Participants	All Participants
<b>Yes</b>	26%	45%	38%
<b>No</b>	74%	55%	62%
<b>Totals</b>	100%	100%	100%

BEFORE PARTICIPATING IN THIS SURVEY, WERE YOU AWARE THAT THE WAY TO GO PROGRAM IS PART OF THE DENVER REGIONAL COUNCIL OF GOVERNMENTS (DRCOG)?

Aware of DRCOG?	New Participants	Repeat Participants	All Participants
<b>Yes</b>	15%	35%	27%
<b>No</b>	85%	65%	73%
<b>Totals</b>	100%	100%	100%



## HOW THEY ARE SIMILAR

*New and repeat participants did not differ significantly in terms of how participation influenced their attitudes toward bicycle commuting. Sixty-one percent of all participants said Bike to Work Day motivated them to travel more often by bicycle, either for work commuting, other types of trips, or both.*

WHICH ONE OF THE STATEMENTS BELOW BEST DESCRIBES HOW BIKE TO WORK DAY HAS INFLUENCED YOUR ATTITUDE TOWARD BICYCLE COMMUTING TO WORK OR FOR OTHER TYPES OF TRIPS?

Effect of Participation	New Participants	Repeat Participants	All Participants
<b>Commute more often by bicycle to and from work only</b>	16%	15%	15%
<b>Commute more often by bicycle to and from work AND for other types of trips</b>	37%	39%	38%
<b>Use bicycle for other types of trips only</b>	10%	7%	8%
<b>No influence</b>	37%	39%	38%
<b>Less motivated to travel by bicycle</b>	1%	1%	1%
<b>Totals</b>	100%	100%	100%

*All participants travel a little more than nine miles from home to work.*

HOW MANY MILES DO YOU TRAVEL ONE WAY FROM HOME TO WORK?

Miles	New Participants	Repeat Participants	All Participants
<b>Mean</b>	9.36	9.35	9.33
<b>Lower bound of 95% confidence interval</b>	8.20	8.64	8.73
<b>Upper bound of 95% confidence interval</b>	10.38	10.06	9.93

***All participants are likely to work in occupations that are professional, managerial or administrative.***

**WHICH CATEGORY BEST DESCRIBES YOUR OCCUPATION?**

Occupation	New Participants	Repeat Participants	All Participants
<b>Professional, managerial, administrative</b>	73%	83%	79%
<b>Sales, clerical, service</b>	8%	5%	6%
<b>Labor, craftsman, foreman</b>	2%	4%	3%
<b>Other</b>	12%	6%	8%
<b>Refused</b>	6%	2%	3%
<b>Totals</b>	100%	100%	100%

***All participants are likely to have college degrees.***

**WHAT IS THE HIGHEST LEVEL OF EDUCATION YOU HAVE COMPLETED?**

Education	New Participants	Repeat Participants	All Participants
<b>No HS diploma</b>	0%	0%	0%
<b>HS diploma or GED</b>	2%	2%	2%
<b>Some college</b>	6%	7%	7%
<b>Associate's degree</b>	3%	3%	3%
<b>Bachelor's degree</b>	50%	46%	48%
<b>Graduate degree</b>	36%	41%	39%
<b>Refused</b>	4%	0%	2%
<b>Totals</b>	100%	100%	100%

## CHANGE IN BICYCLE TRAVEL BY GENDER AND PARTICIPATION TENURE

When measured by change in bicycle travel, Bike to Work Day achieved its greatest success among new male participants, followed by new and repeat female participants.

Among both new and repeat participants, males bicycled to work more frequently than females, both before and after Bike to Work Day. However, three segments had the largest increases in bicycle commuting frequency after Bike to Work Day:

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CHANGE IN BICYCLE TRAVEL BY PARTICIPANT SEGMENT

Other Bicycle Commute Trips per

Participant Type	Bicycle Commute Days per Month			Month		
	Before	After	Change	Before	After	Change
New male	7.33	8.30	0.97 (+13%)	5.57	6.48	0.91 (16%)
New female	5.46	5.93	0.46 (+8%)	3.06	3.55	0.49 (16%)
All new	6.40	7.11	0.72 (+11%)	4.34	5.03	0.69 (16%)
Repeat male	9.00	9.10	0.10 (+1%)	6.23	6.49	0.26 (4%)
Repeat female	6.63	7.15	0.52 (+8%)	4.95	5.72	0.76 (15%)
All repeat	8.10	8.37	0.27 (+3%)	5.74	6.20	0.46 (8%)
All male	8.45	8.84	0.39 (+5%)	6.01	6.49	0.48 (8%)
All female	6.15	6.64	0.49 (8%)	4.17	4.82	0.65 (16%)
All participants	7.39	7.82	0.44 (+6%)	5.22	5.76	0.55 (11%)

## VEHICLE MILES REDUCED (VMR)

*The total number of additional annual vehicle miles reduced by Bike to Work Day participants increased from 2,016,072 in 2016 to 2,105,736 in 2017, a 4 percent increase.*

### BIKE TO WORK DAY TRIP AND VEHICLE MILES REDUCED 2017

12 Month Calculation			
	Registered	Unregistered	Total
Number of new riders	7,692	2,110	9,801
Number of repeat riders	12,549	11,956	24,506
Total riders	20,241	14,066	34,307
SOV Trips saved by new participants	126,185	35,207	161,392
SOV Trips saved by repeat participants	129,417	98,944	228,361
SOV Trips saved by all participants	255,602	134,151	389,754
VMR by new participants	649,486	184,321	833,807
VMR by repeat participants	624,118	647,811	1,271,929
VMR by all participants	1,273,604	832,131	2,105,736

### BIKE TO WORK DAY TRIP AND VEHICLE MILES REDUCED 2016

12 Month Calculation			
	Registered	Unregistered	Total
Number of new riders	6,522	1,955	8,476
Number of repeat riders	11,104	11,076	22,180
Total riders	17,626	13,030	30,656
SOV Trips saved by new participants	91,151	32,614	123,765
SOV Trips saved by repeat participants	147,679	91,656	239,335
SOV Trips saved by all participants	238,830	124,271	363,101
VMR by new participants	505,366	170,745	676,111
VMR by repeat participants	749,863	600,098	1,349,961
VMR by all participants	1,255,229	770,843	2,026,072

# APPENDIX A

## CALCULATION OF 2017 VMR

<b>Trip and VMT Reduction Calculations (Registered Participants Only)</b>							
<b>Bike to Work Day Only - First Timers</b>				<b>Bike to Work Day Only - Repeat Riders</b>			
	Riders:	7,692			Riders:	12,549	
	x % pre-SOV'ers	57% <i>2017 Survey</i>			x % pre-SOV'ers	67.0% <i>2017</i>	
	= pre-SOV Riders	4,384			= pre-SOV Riders	8,408	
	x 2 trips per day =	8,768 trips reduced			x 2 trips per day =	16,816 trips reduced	
	x Average Trip Dist (1-way):	9.36 <i>2017 Survey</i>			x Average Trip Dist.:	9.35 <i>2017 Survey</i>	
	= VMT Reduced	82,072 VMT			= VMT Reduced	157,232 VMT	
<b>Post-BTWD Additional "Other" Trips by Bicycle - First Timers</b>				<b>Post-BTWD Additional "Other" Trips by Bicycle - Repeat Riders</b>			
	Riders	7,692			Riders	12,549	
	Additional trips (1-way)/month:	0.7 <i>2017 Survey</i>			Additional trips (1-way)/month:	0.5 <i>2017</i>	
	x 2 ways	2			x 2 ways	2	
	months per year:	7			months per year:	7	
	Additional Other trips =	73,224 trips reduced			Additional Other trips =	80,818 trips reduced	
	x Average Trip Dist.:	2.1 <i>(1997 TBI Survey)</i>			x Average Trip Dist.:	2.1	
	= VMT Reduced	153,770 VMT			= VMT Reduced	169,718 VMT	
<b>3. Post-BTWD New Work Trips by Bicycle</b>							
<b>First Timers:</b>				<b>Past Riders (Post BTWD New Work Trips by Bicycle):</b>			
	Riders:	7,692			Riders:	12,549	
	x % pre-SOV'ers	57.0% <i>2017 Survey</i>			x % pre-SOV'ers	67.0% <i>2017 Survey</i>	
	=	4,384			=	8,408	
	Additional commute days/month:	0.72 <i>2017 Survey</i>			additional days/month:	0.27 <i>2017 Survey</i>	
	x 2 trips per day =	8,768			x 2 trips per day =	16,816	
	months per year:	7			months per year:	7	
	Additional Work trips =	44,193 trips reduced			Additional Work trips =	31,783 trips reduced	
	x Average Trip Dist.:	9.36 <i>2017 Survey</i>			x Average Trip Dist.:	9.35 <i>2017 Survey</i>	
	= VMT Reduced	413,644 VMT			= VMT Reduced	297,168 VMT	

<b>Trip and VMT Reduction Calculations (Unregistered Participants Only)</b>								
<b>1. Bike to Work Day First Timers</b>					<b>4. Repeat Riders</b>			
	Riders:	2,110			Riders:	11,956		
	x % pre-SOV'ers	46.0%	2011 Survey		x % pre-SOV'ers	46.0%	2011 Survey	
	= pre-SOV Riders	971			= pre-SOV Riders	5,500		
	x 2 trips per day =	1,941	trips reduced		x 2 trips per day =	11,000	trips reduced	
	x Average Trip Dist (1-way):	9.4	2011 Survey		x Average Trip Dist.:	9.4	2011 Survey	
	= VMT Reduced	18,246	VMT		= VMT Reduced	103,396	VMT	
<b>2. Post-BTWD Other New Trips by Bicycle</b>					<b>3. Post-BTWD New Work Trips by Bicycle</b>			
<b>First Timers:</b>					<b>Past Riders (Post-BTWD Other New Trips by Bicycle):</b>			
	Riders:	2,110			Riders:	11,956		
	% Who make more trips	40.0%	2011 Survey		% Who make more trips	33.0%	2011 Survey	
	= Riders who made more bicycling trips:	844			= Riders who made more bicycling trips:	3,946		
	Additional trips (1-way)/month:	1.7	2011 Survey		Additional trips (1-way)/month:	0.7	2011 Survey	
	x 2 ways	2			x 2 ways	2		
	months per year:	7			months per year:	7		
	Additional Other trips =	20,086	trips reduced		Additional Other trips =	38,666	trips reduced	
	x Average Trip Dist.:	2.1	(1997 TBI Survey)		x Average Trip Dist.:	2.1		
	= VMT Reduced	42,181	VMT		= VMT Reduced	81,199	VMT	
<b>First Timers:</b>					<b>Past Riders (Post BTWD New Work Trips by Bicycle):</b>			
	Riders:	2,110			Riders:	11,956		
	x % pre-SOV'ers	46.0%	2011 Survey		x % pre-SOV'ers	46.0%	2011 Survey	
	=	971			=	5,500		
	Additional commute days/month:	0.97	2011 Survey		additional days/month:	0.64	2011 Survey	
	x 2 trips per day =	1,941			x 2 trips per day =	11,000		
	months per year:	7			months per year:	7		
	Additional Work trips =	13,180	trips reduced		Additional Work trips =	49,278	trips reduced	
	x Average Trip Dist.:	9.4	2011 Survey		x Average Trip Dist.:	9.4	2011 Survey	
	= VMT Reduced	123,893	VMT		= VMT Reduced	463,216	VMT	