CONSUMER SURVEY REPORT

Conducted by Maryland Office of Tourism, Department of Business and Economic Development
in collaboration with State Highway Administration, Department of Transportation,
Cycle Maryland, Bike Maryland, and other community partners

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Executive Summary

From May to October 2011, the Maryland Office of Tourism hosted an online survey targeted at cyclists in order to: gain knowledge about the cycling community in Maryland, gain feedback on current mapping resources and preferences, and collect cycling contacts for future outreach. Coinciding with this survey, Governor Martin O'Malley hosted seven cycling events tied to a pilot project campaign called Cycle Maryland, which promoted and increased the awareness of cycling activities and opportunities across the State of Maryland. Cycle Maryland events included the following seven events in locations throughout the state. The graphic below illustrates the event locations:

Event	County	Date
Cross Island Trail ride kick-off event	Queen Anne's	Saturday, June 18
2011 Garrett County Gran Fondo	Garrett	Saturday, June 25
Greatest Bicycle Tour of the Historic C&O Canal	Montgomery	Saturday, July 9
Ride to See – A Tour of Kent County	Kent	Saturday, August 13
St. Mary's Century	St. Mary's	Saturday, September 17
Tour du Port	Baltimore City	Sunday, October 9
Anacostia River Trail Opening	Prince George's	Friday, November 4

Based on more than 2,000 surveys, results include the following:

- A total of 93 percent of respondents use Maryland roads while cycling.
- The top motivating factors for cycling are health benefits and for pleasure – 95 percent of respondents recognize these as leading factors – followed by environmental reasons.
- The top two activities for all respondents include enjoying outdoors and nature and going to restaurants for food and beverages, followed by shopping and visiting friends.
- 75 percent of cyclists sometimes or always use paper maps to plan cycling trips.
- Almost 800 respondents reported having seen the Maryland Bicycle Map. Of them, more than 65 percent reported that the Maryland Bicycle Map was very useful or useful.
- More than seven in 10 respondents obtained the Maryland Bicycle Map in-person from a shop, travel information center, event, or office. The most common places to obtain the Maryland Bicycle Map are at a store or bike shop (26 percent), travel information center (20 percent), and community event (15 percent).

- The overwhelming majority of survey respondents reported using online maps to plan bicycle trips – 85 percent use them currently. A little over half of respondents reported at least sometimes using navigational devices while on their trip. Google Maps is the most popular web service for planning and navigating a trip.
- Respondents across the board showed the most support for a map in a mobile application format. Additionally, they would be most interested in having a map that shows connections to local bike routes, parks and off-road trails, followed by type of riding surface and bike shops.
- More than half of respondents reported that the amount of traffic, surface type and smoothness of the road and speed of traffic was most to them. Additionally, almost half listed continuous, safe routes and shoulder width as important.
- For amenities, more than half of respondents reported that scenic views, parks, points of interest, and restrooms were most important to them – followed closely by food services.

Methodology

An online SurveyMonkey questionnaire was designed with input from all partners and included questions regarding type of cyclist, weekly cycling habits, activities while cycling, map resource use, map resource preferences, Maryland Bike Map ratings, and demographic information. Survey awareness was promoted to as many targeted potential respondents as possible – the survey link was distributed via web sites, word-of-mouth at Cycle Maryland events, and using email distribution lists and mailings to known bicycling groups and enthusiasts.

A total of 2,779 people logged on to survey. 479 respondents did not continue past the first question; these respondents were deleted from the final data set. A total of 2,300 survey respondents were deemed valid.

Limitations

Survey-based studies are limited to the accuracy of respondents' recollections. The survey group also was limited to those contacts made via outreach. This sample is not intended to represent the entire population and range of cyclists throughout the State of Maryland. Rather, this survey was designed to guide the development of cycling map improvements.

Cycle Maryland Survey Findings

Type of cyclist

The majority of all respondents reported that they are primarily on-road cyclists (57 percent), while an additional 32 percent reported they are both on-road and off-road cyclists. This report also includes analysis for cyclists who reported participating in commuter and recreational activities at least once per week when those breakdowns provided interesting contrasts between the groups. These groups are not mutually exclusive – respondents were able to provide answers to any of the applicable categories and there is overlap in these data sets, but comparing these two sets could be useful for planning or marketing purposes.

- Commuters – cycle to work/school or run errands or shop at least once a week
- Recreational – cycle for fitness, fun or bike races/competition at least once a week

Cyclist type	% of survey sample	% of cyclists	No. of respondents
On-road bicyclist, primarily	57%	59%	1,299
Off-road bicyclist, primarily	8%	8%	172*
Both on-road and off-road	32%	34%	745
Not a cyclist	4%	-	84
Total	**100%**	**2,216**	**2,300**
Commuters bicyclists		*51%*	*1,126*
Recreational bicyclists		*84%*	*1,863*

*Sample size small for cyclist-type level analysis. Use reported results with caution.

Why do you ride a bicycle? Multi-response answer.

Insight into the motivations behind cyclist behavior can help guide future marketing strategies. The top two motivating factors reported are riding for health benefits and for pleasure. Nearly all respondents (95 percent) recognize both of these leading factors – followed by environmental benefits (61 percent). Commuters reported a high level of interest in related reasons: environmental, economic, and quick transportation, with a lower level of car ownership.

Reason	All	On-road	Off-road	Both on and off-road	Commuter	Recreation
Good for my health	95%	96%	91%	95%	96%	96%
Pleasure	95%	94%	94%	96%	94%	96%
Good for the environment	61%	61%	34%	66%	82%	59%
Economic	45%	46%	19%	50%	72%	42%
Transportation	46%	45%	22%	52%	73%	42%
Social benefits	43%	43%	37%	46%	38%	49%
Do not own car	7%	8%	4%	6%	12%	6%

Trip activities

What of the following activities and interests do you pursue while on your bicycle rides?

The top two activities for all cycling types include enjoying outdoors and nature and going to restaurants for food and beverages. On-road and commuter cyclists reported shopping as the third most popular activity, while recreational cyclists list visiting friends.

Activity	All	On-road	Off-road	Both on and off-road	Commuter	Recreational
Outdoors and nature	89%	86%	94%	93%	89%	91%
Restaurant for food/drink	46%	45%	39%	48%	56%	46%
Shopping	38%	38%	20%	41%	61%	35%
Visit friends	37%	37%	25%	40%	52%	37%
Visit tourist attractions	31%	27%	33%	36%	35%	32%
Stay overnight away from home	31%	31%	21%	33%	36%	33%
Museums, heritage/history	28%	26%	24%	33%	35%	28%
Fast food	17%	17%	15%	16%	19%	18%
None – to get from place to place	5%	7%	3%	3%	5%	5%

Use of maps and mapping services

Do you use paper maps to plan your trip?

75 percent of cyclists sometimes or always use paper maps to plan a cycling trip.

	All	On-road	Off-road	Both on and off-road	Commuter	Recreational
Always	9%	9%	5%	10%	9%	9%
Sometimes	66%	64%	66%	69%	67%	66%
Never	25%	27%	29%	22%	24%	24%

Maryland Bicycle Map

Have you ever used the Maryland Bicycle Map? [Image included in survey]

789 respondents (nearly half) reported definitely using the Maryland Bicycle Map.

	All respondents	**On-road**	**Off-road**	**Both on and off-road**	**Valid responses**	**Commuter**	**Recreational**
Yes	49%	49%	36%	51%	789	51%	49%
No	46%	46%	57%	43%	744	45%	46%
Not sure	5%	4%	7%	6%	81	4%	5%
Valid responses	*1,614*	*927*	*118*	*569*		*837*	*1,385*

Where did you get the Maryland Bicycle Map?

The most commonly reported source for obtaining the Maryland Bicycle Map was at a store or bike shop (26 percent), followed by a travel information or travel information center (20 percent), and community event (15 percent). More than seven in 10 respondents obtained the Maryland Bicycle Map in-person from a shop, travel information center, event, office, or cycling group — almost two in 10 respondents ordered a map online, by phone, or were given it by a friend or family member.

Source of Maryland Bicycle Map	**All**	
Store or bike shop	26%	
Visitor center or travel information center	20%	
Cycling or community event	15%	74% picked up a map in-person
Picked it up at a government office building/facility	8%	
Maryland State Park	2%	
Cycling group	2%	
Workplace	1%	
Ordered it on State of Maryland government web site	10%	18% obtained the map online, by phone, or through friends or social groups.
Printed it from a web site	4%	
Friend/family member	3%	
Called and requested the map	1%	
Don't remember/Don't know	9%	
Valid responses	*783*	

How would you rate the usefulness of the Maryland Bicycle Map?

More than 65 percent of every type of respondent cyclist reported that the Maryland Bicycle Map is very useful or useful. However, across the board, another three in 10 cyclists surveyed reported that it is not very useful. While the map is useful in some way to the majority of surveyed cyclists, this also points to room for improvement.

Usefulness rating	All	On-road	Off-road	Both on and off-road
Very useful – It's one of the best maps I use.	8%	8%	17%	8%
Useful – It supplies me with the info I need.	57%	57%	50%	59%
Not very useful – Hard to find info I need.	29%	29%	29%	28%
Not useful at all – I never used it.	2%	2%	0%	2%
Not sure.	4%	4%	5%	3%
Valid responses	*784*	*451*	*42*	*291*

Would offering the following improve the Maryland Bicycle Map?

Respondents showed the most support for a mobile application. The most popular write-in responses included local route ride details and region-specific maps. Exhibit A summarizes write-in answers.

	All	On-road	Off-road	Both on and off-road
Mobile application	59%	57%	59%	62%
Weatherproof	53%	49%	69%	56%
Smaller	41%	39%	44%	43%
Write-in answers:				
Local route details	13%	13%	5%	14%
Additional cycling specific features are needed on a cycling map (grades, surface type, riding condition, traffic details, etc.)	6%	5%	5%	8%
Maps that can be printed in advance of trip	3%	3%	3%	2%
Other map source was listed as suggestion (see Exhibit A)	2%	2%	0	1%
Cue cards	1%	1%	0	2%
Valid responses	*691*	*396*	*39*	*256*

Which would you like to see included in the Maryland Bicycle Map?

More than 750 respondents who have used the Maryland Bicycle Map reported on what they would like to see included. The top interests for all groups are: Connections to local bike routes, parks and off-road trails, type of riding surface, and bike shops. Exhibit B summarizes write-in answers.

Connections with local bicycle routes, parks and off-road trails	80%
Type of riding surface	74%
Bike shops	62%
Tourist attractions/points of interest	41%
Rest stops	41%
Food services	33%
Nothing else – the map does the job already	5%
Write-in responses:	
Cyclist specific map features	3%
Cycling-friendly lodging	1%
Valid respondents	*751*

Do you use online maps or other services to plan bicycle trips?

The overwhelming majority of survey respondents reported using online maps to plan bicycle trips – 85 percent use online maps, with five percent reporting no interest.

Yes	85%
No	5%
No, but I'm interested	10%
Valid responses	*2,157*

How often do you print your route ahead of time?

The majority of all cyclists who responded to the survey report that they sometimes or always print a route ahead of time. Eight in 10 at least sometimes print a route ahead of time – 20 percent do not use this type of resource.

Always	15%
Sometimes	67%
Never	18%
Valid responses	*1,833*

Do you use navigational, interactive maps to plan and adjust your route while on your ride?

A little over half of respondents reported at least sometimes using navigational devices while on their trip – with the other half reporting that they never use this resource during a trip.

Always	6%
Sometimes	46%
Never	49%
Valid responses	*1,833*

Which web services do you use?

The most popular online resource for trip planning reported by respondents is Google, followed by (non-specific) printed maps and Map My Ride. Utilizing existing, successful resources could provide a proven way to deliver favorable services in a cost effective manner.

Online resource	All	Commuter	Recreational
Google Maps	68%	79%	67%
Printed maps from the internet	46%	43%	47%
Map My Ride	46%	42%	50%
Bikely.com	17%	21%	17%
iPhone app	14%	14%	15%
Android app	10%	11%	10%
Other tablet app	1%	1%	1%
ByCycle.org	1%	1%	1%
Valid responses	*1,837*	*980*	*1,566*

The most popular write-in answers included:
- Ride with GPS
- Garmin
- Bikeroutetoaster
- Ridethecity
- Various other GPS sources

Please choose the most important road conditions and safety features when planning a ride.

The following table lists conditions and road safety features in order of priority for respondents. More than half of respondents reported that the amount of traffic, surface type and smoothness of the road, and speed of traffic is important information to them. Many also listed continuous and safe routes and shoulder width as important.

Most important conditions/safety features	All	Commuter	Recreational
Amount of traffic	71%	71%	72%
Surface type (paved/unpaved) and smoothness	61%	56%	63%
Speed of traffic	55%	61%	54%
Continuous, safe bike route for my trip	47%	49%	46%
Width of shoulders on roads	46%	42%	49%
Availability of separated bicycle path away from cars	32%	37%	29%
Width of travel lanes on roads	30%	30%	31%
Steepness of grade and hills	28%	25%	27%
Personal security	26%	25%	26%
Hazard areas, such as interchange ramps or bridge crossings	26%	31%	26%
Clearly marked bicycle route signs and directions	16%	16%	15%
Gaps in bicycle infrastructure	11%	15%	11%
"Share the road" signage	9%	8%	9%
Lighting conditions	8%	8%	8%
Emergency services	1%	1%	1%
Valid responses	*2,153*	*1,098*	*1,821*

Please choose the most important amenities and attractions when planning a ride.

The following table lists amenities cyclists consider when planning a ride. More than half of respondents reported that scenic views, parks, points of interest, and restrooms were important to them – followed closely by food services.

Most important amenities	All	Commuter	Recreational
Scenic views	68%	62%	70%
Parks and recreational areas	54%	55%	54%
Points of interest	54%	55%	56%
Public restroom services	53%	48%	54%
Food services/restaurants	50%	53%	52%
Bicycle lockers or stands for locking bikes	27%	38%	25%
Bike shops	20%	21%	20%
Showers	10%	13%	9%
Retail shopping	7%	11%	6%
Benches	5%	4%	5%
Bicycle rentals	2%	2%	2%
Valid responses	*2,152*	*1,097*	*1,821*

Respondent Bicycling Patterns

Respondents were asked about the primary purpose of weekly cycling activities. Similar to the commuter/recreational subsets, these categories are not mutually exclusive – respondents were able to provide answers to any of the applicable categories and there is likely overlap in these data sets:

- 77% of respondents ride for fitness
- 62% ride for fun
- 45% ride to commute
- 41% ride to run errands
- 24% ride for racing/competition

Fitness cycling patterns

		Valid responses
% of cyclists who reported commuting	**77%**	
Number of trips/week, of those riding		*1,707*
Less than once a week	8%	
1 ride	16%	
2-5 rides	62%	
6-10 rides	9%	
11-14 rides	1%	
More than 14 rides	4%	
Average miles/week		*1,638*
Less than one mile	1%	
1-5 miles	4%	
5.1-10 miles	9%	
10.1-20 miles	17%	
20.1-50 miles	31%	
More than 50 miles	40%	
Surface type		*1,560*
On-road in a lane with cars, trucks and buses	67%	
On a separate and marked bike lane if route along the road	6%	
On a cycle track next to road, meant for cyclists only	1%	
On a paved path shared with pedestrians, next to a road	6%	
Off-road on a paved recreation trail	12%	
Unpaved recreation path	9%	
Number of adults/trip		*1,305*
Myself	45%	
1 other person	22%	
2-4 other people	21%	
5-10 other people	10%	
6 or more	2%	
Number of children under 16/trip		*1,127*
No children	94%	
1 child	4%	
2-4 children	2%	
5-10 children	0.1%	

Fun cycling patterns

		Valid responses
% of cyclists who reported commuting	**62%**	
Number of trips/week, of those riding		*1,376*
Less than once a week	16%	
1 ride	25%	
2-5 rides	50%	
6-10 rides	4%	
11-14 rides	1%	
More than 14 rides	4%	
Average miles/week		*1,292*
Less than one mile	2%	
1-5 miles	12%	
5.1-10 miles	20%	
10.1-20 miles	23%	
20.1-50 miles	26%	
More than 50 miles	17%	
Surface type		*1,219*
On-road in a lane with cars, trucks and buses	46%	
On a separate and marked bike lane if route along the road	7%	
On a cycle track next to road, meant for cyclists only	1%	
On a paved path shared with pedestrians, next to a road	9%	
Off-road on a paved recreation trail	21%	
Unpaved recreation path	17%	
Number of adults/trip		*1,019*
Myself	36%	
1 other person	30%	
2-4 other people	24%	
5-10 other people	9%	
6 or more	1%	
Number of children under 16/trip		*895*
No children	79%	
1 child	11%	
2-4 children	10%	
5-10 children	0.1%	

Commuter cycling patterns

% of cyclists who reported commuting	**45%**	
Number of trips/week (round trips count as 2), of those riding		*1,008*
Less than once a week	10%	
1 ride	7%	
2-5 rides	38%	
6-10 rides	37%	
11-14 rides	6%	
More than 14 rides	2%	
Average miles/week		*994*
Less than one mile	3%	
1-5 miles	7%	
5.1-10 miles	13%	
10.1-20 miles	22%	
20.1-50 miles	31%	
More than 50 miles	25%	
Surface type		*976*
On-road in a lane with cars, trucks and buses	70%	
On a separate and marked bike lane if route along the road	10%	
On a cycle track next to road, meant for cyclists only	1%	
On a paved path shared with pedestrians, next to a road	7%	
Off-road on a paved recreation trail	11%	
Unpaved recreation path	1%	
Number of adults/trip		*808*
Myself	94%	
1 other person	6%	
2-4 other people	1%	
5-10 other people	0%	
6 or more	0%	
Number of adults/trip		*726*
No children	96%	
1 child	3%	
2-4 children	1%	

Errands/shopping cycling patterns

		Valid responses
% of cyclists who reported commuting	**41%**	
Number of trips/week (round trips count as 2), of those riding		*915*
Less than once a week	26%	
1 ride	19%	
2-5 rides	47%	
6-10 rides	6%	
11-14 rides	1%	
More than 14 rides	1%	
Average miles/week		*869*
Less than one mile	8%	
1-5 miles	47%	
5.1-10 miles	27%	
10.1-20 miles	14%	
20.1-50 miles	3%	
More than 50 miles	1%	
Surface type		*837*
On-road in a lane with cars, trucks and buses	84%	
On a separate and marked bike lane if route along the road	5%	
On a cycle track next to road, meant for cyclists only	0%	
On a paved path shared with pedestrians, next to a road	8%	
Off-road on a paved recreation trail	1%	
Unpaved recreation path	1%	
Number of adults/trip		*672*
Myself	86%	
1 other person	13%	
2-4 other people	2%	
Number of adults/trip		*584*
No children	91%	
1 child	6%	
2-4 children	2%	

Race/competition cycling patterns

		Valid responses
% of cyclists who reported commuting	**24%**	
Number of trips/week, of those riding		*525*
Less than once a week	59%	
1 ride	19%	
2-5 rides	17%	
6-10 rides	2%	
11-14 rides	1%	
More than 14 rides	3%	
Average miles/week		*475*
Less than one mile	6%	
1-5 miles	3%	
5.1-10 miles	3%	
10.1-20 miles	19%	
20.1-50 miles	38%	
More than 50 miles	32%	
Surface type		*463*
On-road in a lane with cars, trucks and buses	63%	
On a separate and marked bike lane if route along the road	10%	
On a cycle track next to road, meant for cyclists only	2%	
On a paved path shared with pedestrians, next to a road	1%	
Off-road on a paved recreation trail	4%	
Unpaved recreation path	21%	
Number of adults/trip		*400*
Myself	20%	
1 other person	3%	
2-4 other people	6%	
5-10 other people	5%	
6 or more	66%	
Number of children under 16/trip		*351*
No children	94%	
1 child	3%	
2-4 children	2%	
5-10 children	1%	

Preferred riding surfaces

Respondents were asked to rate their level of comfort on riding surfaces. The most common level of comfort for most surfaces was at least "comfortable"; with the exception of unpaved surfaces which did not receive a high level of comfort from on-road cyclist (off-road cyclists highly preferred unpaved off-road trails). The most preferred surfaces were paved bicycle-only paths and paved off-road paths, with paved pedestrian-bicycle paths and marked bicycle lanes also rating high on the comfort scale. The least preferred riding surface for all types of cyclists was unpaved shoulders on roads.

	Very Comfortable	Comfortable	Neutral	Uneasy	Very uncomfortable	N/A
Lanes shared with cars and cyclists without "share the road" signage						
Overall	8%	**31%**	24%	20%	17%	1%
On-road	10%	**36%**	24%	19%	10%	0%
Off-road	1%	9%	10%	19%	**54%**	7%
Both on and off-road	5%	**27%**	**27%**	22%	19%	0%
Lanes shared with cars and cyclists with "share the road" signs/pavement markings						
Overall	17%	**42%**	22%	14%	6%	1%
On-road	21%	**46%**	20%	11%	2%	0%
Off-road	2%	15%	23%	25%	**30%**	6%
Both on and off-road	13%	**40%**	25%	17%	6%	0%
Paved paths separated from traffic, shared with pedestrians						
Overall	30%	**34%**	21%	8%	7%	1%
On-road	24%	**32%**	24%	10%	9%	1%
Off-road	**41%**	**41%**	12%	2%	1%	2%
Both on and off-road	**37%**	35%	19%	4%	4%	0%
Marked bicycle lanes along the road						
Overall	36%	**42%**	14%	5%	2%	0%
On-road	**42%**	**42%**	11%	4%	1%	0%
Off-road	7%	**30%**	33%	16%	10%	4%
Both on and off-road	32%	**44%**	16%	6%	2%	0%
Paved shoulders on roads						
Overall	23%	**37%**	23%	11%	5%	0%
On-road	28%	**40%**	21%	9%	3%	0%
Off-road	6%	23%	**25%**	24%	20%	3%
Both on and off-road	19%	*36%*	27%	12%	6%	0%
Unpaved shoulders on roads						
Overall	1%	4%	11%	20%	**49%**	15%
On-road	1%	3%	9%	19%	**48%**	21%
Off-road	2%	6%	13%	24%	**48%**	8%
Both on and off-road	2%	5%	14%	21%	**50%**	8%
Paved bicycle paths separated from traffic, for bikes only						
Overall	**59%**	30%	7%	1%	1%	1%
On-road	**57%**	30%	9%	2%	1%	1%
Off-road	**54%**	34%	8%	1%	1%	2%
Both on and off-road	**64%**	30%	4%	1%	0%	1%
Paved off-road trails						
Overall	**46%**	32%	12%	2%	2%	6%
On-road	**36%**	35%	14%	2%	3%	10%
Off-road	**64%**	27%	7%	1%	0%	2%
Both on and off-road	**59%**	29%	9%	1%	1%	1%
Unpaved off-road trails						
Overall	22%	21%	16%	7%	8%	**26%**
On-road	5%	19%	16%	9%	11%	**41%**
Off-road	**55%**	15%	18%	4%	6%	2%
Both on and off-road	**44%**	27%	15%	5%	4%	6%

Demographics

Gender

	All	Commuter	Recreational
Male	70%	73%	71%
Female	30%	27%	30%

Income

	All	Commuter	Recreational
Less than $25,000	3%	4%	3%
$25,000-49,999	8%	10%	7%
$50,000-74,999	13%	14%	13%
$75,000-99,999	15%	15%	14%
$100,000-$149,999	30%	31%	31%
$150,000 or more	30%	26%	32%

Age

	All	Commuter	Recreational
>18 Years	1%	1%	1%
18-34 Years	23%	29%	20%
18-24	3%	4%	3%
25-34	20%	26%	18%
35-54 Years	51%	49%	53%
35-44	23%	24%	23%
45-54	28%	25%	30%
55+ Years	26%	21%	26%
55-64	19%	16%	20%
65+	7%	6%	7%

Zip code origin of respondents

County	No. of responses	% of responses	County	No. of responses	% of responses
Allegany	10	<1%	Harford	42	2%
Anne Arundel	143	7%	Howard	188	9%
Baltimore	194	9%	Kent	1	<1%
Baltimore City	269	13%	Montgomery	572	28%
Calvert	16	1%	Prince George's	149	7%
Caroline	2	<1%	Queen Anne's	6	<1%
Carroll	63	3%	Somerset	0	-
Cecil	6	<1%	St. Mary's	34	2%
Charles	12	1%	Talbot	5	<1%
Dorchester	1	<1%	Washington	26	1%
Frederick	105	5%	Wicomico	7	<1%
Garrett	6	<1%	Worcester	4	<1%
			Out-of-State	191	9%

Conclusions and Recommendations

- **Address the growing prevalence that cyclists reported of using online resources. Adapt mapping strategies to these trends. Explore using existing online mapping tools already used by the cycling community.**
    - 85 percent of respondents use online maps to plan bicycle trips.
    - 80 percent sometimes print a route ahead of time.
    - More than half reported at least sometimes using navigational devices on their trip.
    - 60 percent of respondents would consider a mobile application a product improvement.
    - The most popular online resource is Google map products, followed by (non-specific) printed maps and Map My Ride.

- **Continue producing a hard copy of the map.**
    - 75 percent of cyclists sometimes or always use paper maps to plan a cycling trip.
    - Half of respondents have used the Maryland Cycle Map and the majority reported the map was useful or very useful.
    - Continue promoting the Maryland Bicycle Map in bike shops and among cycling groups, at travel information centers, in work-place settings, and at community events. More than 70 percent of respondents obtained the map in-person from a shop, travel information center, event, cycle group, or office. Fewer than 20 percent ordered a map online or by phone.

- **Consider formatting revisions to the Maryland Bicycle Map based on consumer feedback, when feasible.**
    - 60 percent of respondents would consider a mobile application a product improvement.
    - More than 50 percent of respondents would consider a weatherproof version a product improvement.
    - Regional and local mapping resources are also a popular suggestion.

- **Consider adding cycling specific details to the Maryland Bicycling Map, as well as popular activities and amenities that can be found throughout the state along these routes.**
    - Respondents were most interested in connections with local bike routes and parks; types of riding surfaces; bike shops; the amount and speed of traffic; scenic views, parks, and other points of interest; and rest rooms.
    - Incorporate the most popular cyclist activities in future mapping and marketing products – outdoors and nature, restaurants, shopping, and tourist attractions.

- **When promoting cycling, understand that the top reasons why respondents choose a bicycle as a mode of transportation are for health reasons, pleasure, and the environment.**

- **Use the 1,314 respondents who supplied email addresses and are interested in helping in the future to test any new cycling products.**

Exhibit A

Would offering the following improve the Maryland Bicycle Map?
Paraphrased Write-in Answers

- Existing mobile Apps like Maplet, Bikley.com, Google Maps or ridethecity.com
- The C&O canal/ATA web sites - excellent for trip planning, includes food, bike shops
- Online version allowing route making, design your own MD tour and print cue sheet
- Maps need to cite websites/videos that provide information on all aspects of the route
- Mobile app version with enough resolution to see even the smallest streets and paths
- Links to amenities on a mobile version, feature for convenience stores, bathrooms, etc.
- Local bike club information/club web site cue sheet library on developed ride routes
- Make a Cue Sheet version in pdf format; PDF would be great and not cost a lot of money
- As a mountain biker I am more interested in trail maps available as jpg files
- Use the "Kelly Code" to discriminate on the type of road, change thickness based on traffic level (see njbikemap.com)
- Need better color codes. More useful traffic, shoulder and surface information
- Multi-use trails & signed/marked bike routes
- More specific about what roads bikes are not permitted on
- Better resolution on key issues like interchanges, trail/road type, especially for city
- More detailed maps of selected trails, particularly rail trails
- Greater detail - a county-by-county or regional map would be more useful.
- All Maryland highway maps need more information on current bike laws and etiquette
- A county by county version with greater detail (multiple responses)
- Better summary of trails and bike lanes, and which roads are safe to ride on
- Better mark routes differentiating bike lanes on roads and paths separate from roads
- Indication of difficulty (i.e. demarcation of hills)
- More detail: trailhead locations, mileage indications, services, connections
- List long trail options (how you can string together several trails to make a long route)
- Differentiated for riding types and styles (e.g., fast fitness riding, slower recreational riding).
- Designation of roads on which bicycles are prohibited
- Collect input from ALL local bike clubs referencing their local bike routes.
- A spiral-bound weather-resistant book like the BikeLine series
- Laminated so you can write on it and wipe it off
- Mountain Bike version with trails indicated
- Additional weather proof version for sale
- Larger format with details that is waterproof and with separate portions.
- Break the state into sections and enlarge it, similar to Adventure Cycling Association
- Focus more on urban areas (e.g., insets)
- War of 1812 bicentennial celebration star spangled banner national historic trail sites
- Available on buses, government buildings, other public places, especially in Baltimore
- More Dedicated Bike Lanes

Exhibit B

Which would you like to see included in the Maryland Bicycle Map?
Paraphrased Write-in Answers

- Links to Baltimore Bicycle Map + input from Toole Assoc
- Good examples: maps by Adventure Cycling Assn., njbikemap.com, Baltimore County Bicycle map
- Suggested routes of varying distance
- Park and rides. Overnight car parking for cycle tours.
- Mountain Bike version with trails indicated
- Links to parks/nature trails/camping
- Insets of major urban areas. Include DC/Northern Virginia/Philadelphia areas
- gas stations for air
- Frequency of route use for safety in numbers purposes
- Emergency services/resources by area
- Do not mark major roads (like Rt 30) as bike routes; use less travelled, rural roads with good road
- Cue sheets of showcase rides (e.g. Frederick County - covered bridge loop)
- Challenging terrain
- Bike Route #s
- Three Notch Trail and Indian Head Rail trail