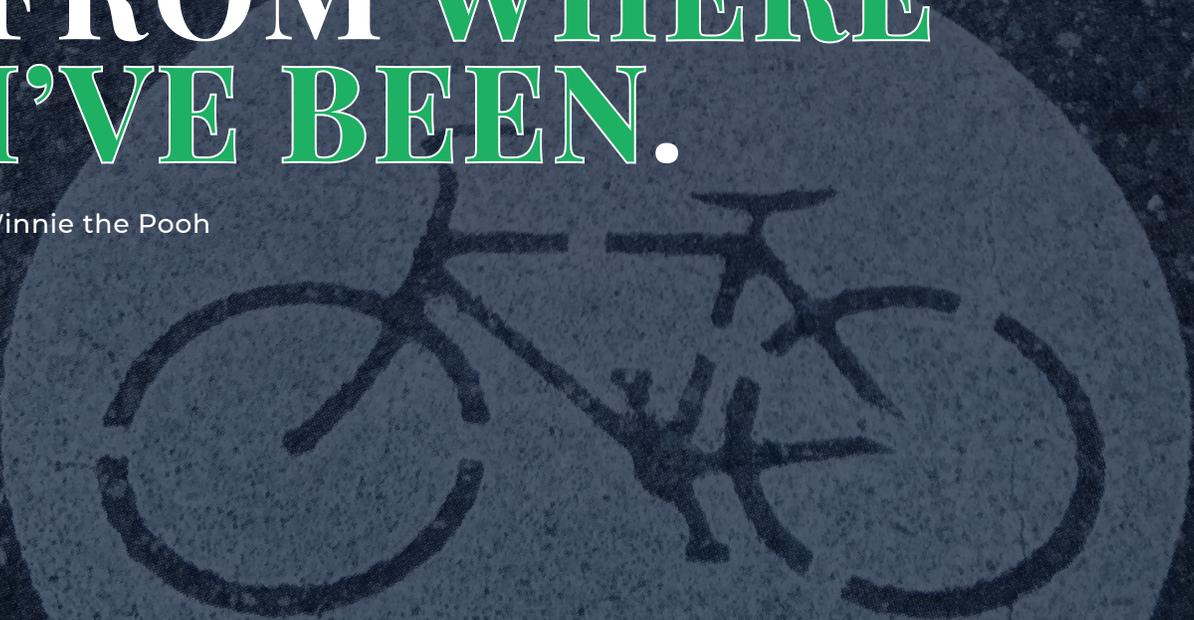


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**I ALWAYS GET  
TO WHERE  
I'M GOING BY  
WALKING AWAY  
FROM WHERE  
I'VE BEEN.**

Winnie the Pooh



**B-ActivePlan.com**

# APPENDIX A

## METHODS

DEMAND ANALYSIS METHODOLOGY  
LEVEL OF COMFORT METHODOLOGY  
SURVEY QUESTIONS

# Demand Analysis Methodology

## GENERAL DEMAND ANALYSIS

INPUT	WEIGHT	RATIONALE
Red Rock Ridge and Valley Trail (RRRVTS) System	12	General corridors for trail network
RRRVTS Existing/Complete	17	Existing infrastructure
Existing Active Transportation Facilities	21	Existing bike and pedestrian infrastructure
Park Land Use	8	Bike and pedestrian friendly destination
Commercial/Retail Land Use	5	Compatible land use
Mixed Use Land Use	5	Compatible land use
Residential Multifamily Land Use	5	Most densely developed land use; in urban core
School Land Use	7	Ridership to schools
Institutional Land Use	5	Includes colleges
Selected Sidewalks	7	Sidewalks abutting compatible land uses
Employment	5	Selected employment data as employment attractors for bikes and pedestrians
Transit Lines and Stops	3	Transit serves as additional transportation for bike/pedestrian users
<b>SUM</b>	<b>100</b>	

## STRAVA DEMAND ANALYSIS

STRAVA INPUT	WEIGHT	RATIONALE
AM Commute Routes	33.3	Strava data for bicycle trips recorded during AM peak periods (6:00 AM to 9:00 AM)
PM Commute Routes	33.3	Strava data for bicycle trips recorded during PM peak periods (3:00 AM to 6:00 AM)
Highest Total Commute Routes	33.3	Routes with more 130 commutes or more within the 3rd quarter of 2016
<b>SUM</b>	<b>100</b>	

### EMPLOYMENT ATTRACTOR DEMAND ANALYSIS

EMPLOYMENT INPUT	WEIGHT	RATIONALE
Zoo and Gardens	8	Attract ridership of all ages
Theatres	6	Attract ridership of all ages
Religious institutions	6	Many religious institutions; possibility of many trips
Groceries/Drug Stores	10	Basic needs trips
Parks	12	Parks located in places where people can easily ride bikes
Museums	6	Often located in walkable areas/ pedestrian friendly destination
Library	6	Attract younger ridership
Restaurants	8	Recreational riding
Schools	12	Walk/bike to school
Colleges	12	Large trip generators and attractors due to student population
Fitness Centers	8	Attracts users interested in active transportation
Department Stores	6	Shopping needs
<b>SUM</b>	<b>100</b>	

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# Level of Comfort Methodology

Level of Comfort (LOC) was determined based on datasets provided by the MPO. These data sets included speed limits, functional classification, existing bicycle facilities, annual average daily traffic (AADT) volumes, and median

and shoulder types. Speed limits were assumed where not provided based on functional classification as follows:

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● 1 Interstate:	65 mph or higher
● 2 Freeway or Highway:	60 mph
● 3 Principal Arterial:	55 mph
● 4 Minor Arterial:	40 – 45 mph
● 5 Major Collector:	35 – 45 mph
● 6 Minor Collector:	35 mph
● 7 Local:	30 mph or less

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Where ranges of speed limits are provided, other characteristics, such as presence of a shoulder or median were used to determine speed limits for LOC analysis. Roads with medians and shoulders were presumed to be higher speeds than those without them.

The table below identifies factors that were used for the level of comfort analysis. Although there are several factors that are included within the analysis, limitations exist due to the amount of data that is available for each street within the overall network.

Score	Qualitative Assessment	Quantitative Assessment
<b>LOC 1</b>	Level of stress tolerable by most children, requiring minimal attention of cyclists.	<ul style="list-style-type: none"> <li>• Low speeds (30 mph or less) local roads with only one travel lane in each direction and a bicycle lane;</li> <li>• Local roads with one travel lane in each direction and AADT volumes less than 2,000;</li> <li>• Multiuse paths or facilities that are physically separated from traffic; or</li> <li>• Greenways and trails.</li> </ul>
<b>LOC 2</b>	Appropriate riding conditions for the mainstream adult population.	<ul style="list-style-type: none"> <li>• Lower-speed (35 miles per hour or less) local roads and minor collectors with an exclusive bicycle facility, and:                             <ul style="list-style-type: none"> <li>- No more than one travel lane in each direction and AADT counts between 4,000 and 2,000,</li> <li>- OR more than one travel lane in each direction with AADT counts less than 2,000; or</li> </ul> </li> <li>• Major collectors with                             <ul style="list-style-type: none"> <li>- Multiple lanes in each direction and less than 2,000 AADT counts and a bicycle lane,</li> <li>- OR one lane in each direction and a bicycle lane with AADT volumes between 2,000 and 4,000.</li> </ul> </li> </ul>
<b>LOC 3</b>	Well-suited for the enthusiastic rider that is confident in his/her riding abilities, but still prefers separated facilities.	<ul style="list-style-type: none"> <li>• 45 miles per hour speed limit or less;</li> <li>• Local roads with:                             <ul style="list-style-type: none"> <li>- More than one travel lane in each direction and AADT volumes between 2,000 and 4,000, or</li> <li>- Only one travel lane in each direction and AADT volumes between 4,000 and 8,000;</li> </ul> </li> <li>• Minor collectors with AADT volumes between 2,000 and 4,000;</li> <li>• Major collectors with bicycle lanes and:                             <ul style="list-style-type: none"> <li>- Only one travel lane in each direction and AADT volumes between 4,000 and 8,000,</li> <li>- More than one travel lane in each direction and AADT volumes between 2,000 and 4,000, or</li> <li>- Speeds of 35 mph or less; or</li> </ul> </li> <li>• Minor arterials with AADT volumes less than 4,000.</li> </ul>

Score	Qualitative Assessment	Quantitative Assessment
<b>LOC 4</b>	Only tolerated by riders who may be classified as “strong and fearless.”	<ul style="list-style-type: none"> <li>• Speeds of 40 to 55 mph;</li> <li>• Local roads with:               <ul style="list-style-type: none"> <li>- More than one travel lane in each direction AADT volumes greater than 4,000, or</li> <li>- Only one travel lane in each direction and AADT volumes greater than 8,000;</li> </ul> </li> <li>• Minor collectors with AADT volumes greater than 4,000;</li> <li>• Major collectors with a bicycle lane and:               <ul style="list-style-type: none"> <li>- More than one lane in each direction and AADT volumes greater than 4,000,</li> <li>- Only one lane in each direction and AADT volumes greater than 8,000,</li> <li>- 45 miles per hour speed limits and more than one travel lane in each direction,</li> <li>- 45 miles per hour speed limits and only one travel lane in each direction and AADT volumes greater than 2,000, or</li> <li>- 35 miles per hour speed limits and AADT volumes greater than 4,000;</li> </ul> </li> <li>• Minor arterials with:               <ul style="list-style-type: none"> <li>- More than one travel lane in each direction, or</li> <li>- Only one lane in each direction and a bike lane and AADT volumes of greater than 4,000; or</li> </ul> </li> <li>• Principal arterials with speeds of 55 miles per hour or less.</li> </ul>
<b>LOC 5</b>	Not appropriate conditions for bicycle traffic.	<ul style="list-style-type: none"> <li>• Speeds greater than or equal to 55 miles per hour; or</li> <li>• Roads classified as US interstate or freeways.</li> </ul>

# Survey Questions

A survey was used to understand user demographic information along with key destinations and barriers to active transportation within the region. The survey was distributed during a variety of public open house meetings, in pop-up events along trails, intercept

surveys during field work, and online. The survey was customized for short interactions at pop-up meetings and intercept opportunities. The following are the abbreviated and full length versions of the survey that were used during the public outreach process.



**The B Active Plan is the Active Transportation Plan for the Greater Birmingham Region, and we need your input! If you would like to receive email updates, please write your email:**

**1) What is your gender?**

- Female
- Male

**3) What is your age?**

- Under 18
- 18-40
- 41-60
- Over 60
- Prefer not to say

**2) Tell us about your commute to work or school.**

- Less than 2 miles
- 3-5 miles
- 6-10 miles
- 10 + miles
- Not applicable

**2) What is your zip code?**

\_\_\_\_\_

**3) Is there a specific street or intersection that you feel is unsafe for pedestrians or cyclists?**

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**6) What keeps you from walking/biking more often? (Check all that apply)**

- Destinations too far/takes too long to walk
- Unsure of routes to take
- Traffic is too heavy
- Dangerous intersections
- Lack of sidewalks or paths/poor condition or unsuitable
- Weather
- Lack of lighted sidewalks or paths/personal security
- Need to transport other people or things
- Exposure to air pollution
- Lack of access to activity centers
- Other: \_\_\_\_\_\*

**7) What improvements would encourage you to walk/bike more often? Select up to 5.**

- Improved pedestrian crossings (signals, crosswalks, warning signs)
- Improved curb ramps
- Slower traffic
- Improved sidewalks (wider, fewer barriers, etc.)
- Eliminating gaps in sidewalk networks
- Creating more direct paths to destinations
- Improving accessibility for people with disabilities
- Better lighting and security
- Better sidewalk maintenance
- More walking paths and trails
- Educating motorists about yielding to pedestrian



# PUBLIC SURVEY

The B Active Plan is the Active Transportation Plan for the Greater Birmingham Region. The B Active Plan will identify a clear strategy for near and long-term projects that will result in a safe, connected, and equitable active transportation system for the region. Your contributions to this survey will help the Project Team better understand the current conditions and perceptions of the active transportation network along with opportunities for improving connectivity within the region. **Thank you for your input!**

If you would like to receive email updates, please write your email: \_\_\_\_\_

**1) What is your gender?**

- Female
- Male

**3) What is your age?**

- Under 18
- 18-40
- 41-60
- Over 60
- Prefer not to say

**5) Which of the choices below describes your employment status? (Check all that apply)**

- Currently employed
- Looking for work
- Unable to work due to disability
- Stay-at-home parent
- Student
- Retired
- Other (please explain): \_\_\_\_\_ \*

**2) Tell us about your commute to work or school.**

- Less than 2 miles
- 3-5 miles
- 6-10 miles
- 10 + miles
- Not applicable

**4) What is your zip code?**

\_\_\_\_\_

**6) What mode do you use for the longest part of your trip to school or work?**

- Car (or personal motorized vehicle)
- School bus
- Transit bus
- Bike
- Walk
- Other: \_\_\_\_\_ \*

**7) How frequently do you walk for the trips listed below?**

	Almost daily	Frequently	Infrequently	Never
Leisure/ recreation/community events	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fitness	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Commuting to school	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Commuting to work	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Shopping, errands	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Visiting friends	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dining	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
To get to transit	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Walking a dog/pet	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**8) What keeps you from walking more often? (Check all that apply)**

- Destinations too far/takes too long to walk
- Unsure of routes to take
- Traffic is too heavy
- Dangerous intersections
- Lack of sidewalks or paths/poor condition or unsuitable
- Other: \_\_\_\_\_ \*
- Weather
- Lack of lighted sidewalks or paths/personal security
- Need to transport other people or things
- Exposure to air pollution
- Lack of access to activity centers

**9) Is there a specific street or intersection that you feel is unsafe for pedestrians?**

\_\_\_\_\_

**11) What improvements would encourage you to walk more often? Select up to 5.**

- Improved pedestrian crossings (signals, crosswalks, warning signs)
- Improved curb ramps
- Slower traffic
- Improved sidewalks (wider, fewer barriers, etc.)
- Eliminating gaps in sidewalk networks
- Creating more direct paths to destinations
- Improving accessibility for people with disabilities
- Better lighting and security
- Better sidewalk maintenance
- More walking paths and trails
- Educating motorists about yielding to pedestrians

**10) Is there a specific street or intersection that you feel is unsafe for biking?**

\_\_\_\_\_

**12) How would you describe your bicycling comfort level?**

- Experienced: confident and comfortable riding with traffic on the road in most traffic situations
- Casual: prefer separated paths, but will ride on some roads where space is available and traffic is manageable
- Less confident: only feel safe on separated paths with few traffic crossings and local streets
- I don't ride a bike

**13) How frequently do you bike for the trips listed below?**

	Almost daily	Frequently	Infrequently	Never
Leisure/recreation/community events	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fitness	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sport/competition	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Commuting to school	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Commuting to work	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Shopping, errands	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Visiting friends	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dining	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
To get to transit	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**14) What keeps you from biking more often? (Check all that apply)**

- Destinations too far/takes too long to bike
- Unsure of routes to take
- Traffic is too heavy
- Dangerous intersections
- Motorists don't exercise caution around cyclists
- Lack of bike facilities (bike lanes, paths, wide shoulders, etc.)
- Poor condition of bike facilities
- Weather
- Lack of lighted routes or paths/personal security
- Need to transport other people or things
- Traveling with small children
- Lack of secure bicycle parking
- Lack of worksite amenities (showers, lockers, etc.)
- Other: \_\_\_\_\_\*

**15) What facility improvements would encourage you to bike more often? Select up to 5**

- More bike lanes on major streets
- More bike lanes on minor streets
- More bicycle paths and trails
- Paved shoulders on narrow streets
- More wide outside lanes (easier to share lanes with vehicles)
- Wider bike lanes
- More shared lane markings in travel lanes
- More separation between bicyclists and vehicles
- More on-road bike signage
- Bike accommodation through intersections