4 BICYCLIST TYPES & FACILITY GUIDELINES

4.1 TYPES OF BICYCLISTS

4.1.1 FOUR REQUIREMENTS PEOPLE NEED TO BIKE

ChangeLab Solutions identifies four requirements that people need to choose to make a trip by bike: safety, convenience, social acceptability, and access. These elements are also needed to create a truly bikeable community. The infographic in Figure 15 explains these concepts further.

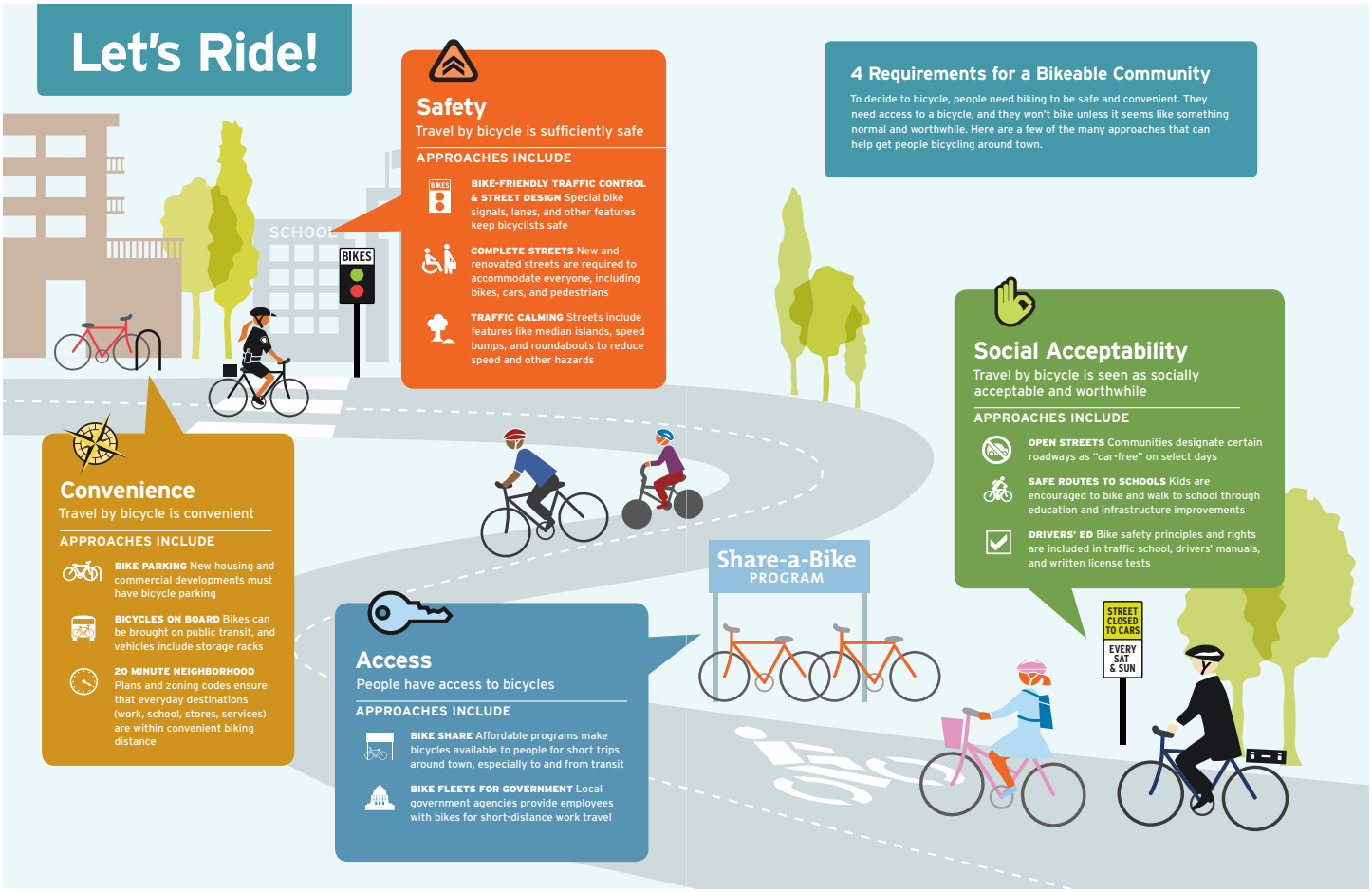
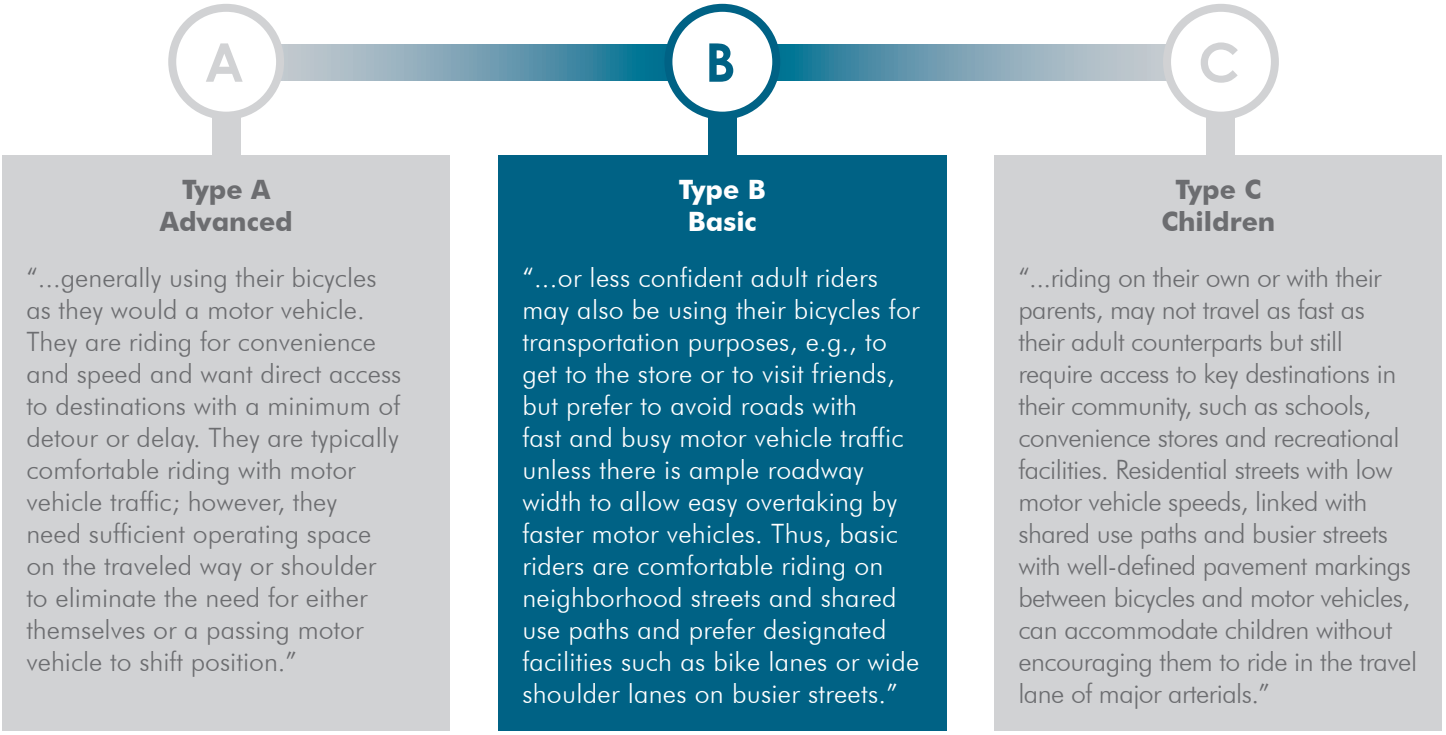


Figure 15 4 Requirements for a Bikeable Community (Credit: ChangeLab Solutions)

4.1.2 AASHTO BICYCLIST TYPES

Facility selection in this plan largely depends on bicyclists' skill levels and preferences. The 1999 American Association of State Highway and Transportation Officials's (AASHTO) **Guide for the Development of Bicycle Facilities (Bike Guide)** defines three types of bicycle users:



The 2012 AASHTO **Guide for the Development of Bicycle Facilities (Bike Guide)** notes that the most common characteristics to classify bicycle riders are trip purpose, physical ability, and comfort level. Section 2.2 describes the differences in bicycle trip purposes. Table 22 classifies bicyclists by physical ability and comfort level, or by experience and confidence.

People do not always fit into a single category, but these profiles provide a way to gauge approximate level of comfort on and preference for specific facility types.

Bicycle User Types
Sources: AASHTO Bike Guide 2012, modified by the Haywood County, NC Bike Plan

	Experienced / Confident Riders	Casual / Less Confident Riders
1	Most are comfortable riding with vehicles on streets, and are able to negotiate streets like a motor vehicle, including use of the full width of a narrow travel lane when appropriate and using left-turn lanes.	Prefer shared-use paths, bike boulevards, or bike lanes along low-volume, low-speed streets.
2	While comfortable on most streets, some prefer on-street bike lanes, paved shoulders or shared-use paths when available.	May have difficulty gauging traffic and may be unfamiliar with rules of the road as they pertain to bicyclists; may walk bike across intersections.
3	Prefer a more direct route.	May use less direct route to avoid arterials with heavy traffic volumes.
4	Avoid riding on sidewalks. Ride with the flow of traffic on streets.	If no on-street facility is available, may ride on sidewalks even though it is not necessarily safer than the street. Should always ride with flow of traffic.
5	May ride at speeds of up to 25 mph on flat ground, up to 45 mph on steep descents.	May ride at speeds around 8 to 12 mph.
6	May cycle longer distances.	Cycle shorter distances: 1 to 5 miles is a typical trip distance.

Table 22 Bicycle User Types

4.1.3 FOUR TYPES OF BICYCLISTS

Research conducted at Portland State University has identified four general groups of people based on their attitudes towards bicycling.[5] The specific proportions of the population of each group relate to the Portland, Oregon region, but is currently one of the best standards available to estimate user types and proportions.

Following are descriptions of each bicyclist type from the Montgomery County, Maryland Bicycle Planning Guidance and Portland, Oregon Bureau of Transportation:

1. **Strong & Fearless (<1%)**

   Comfortable operating in the roadway as a vehicle, regardless of facilities.

2. **Enthusiastic & Confident (7%)**

   Comfortable riding on some roadways, but prefer bicycle facilities separate from vehicle traffic (e.g. bike lanes, shared-use path).

3. **Interested but Concerned (60%)**

   Would like to ride more, but have safety concerns that are dissuading them. Not comfortable in traffic. Will ride in low-volume, low-speed conditions (e.g. bike boulevards, off-street bikeways).

4. **No Way No How (33%)**

   No interest in riding a bike for transportation.

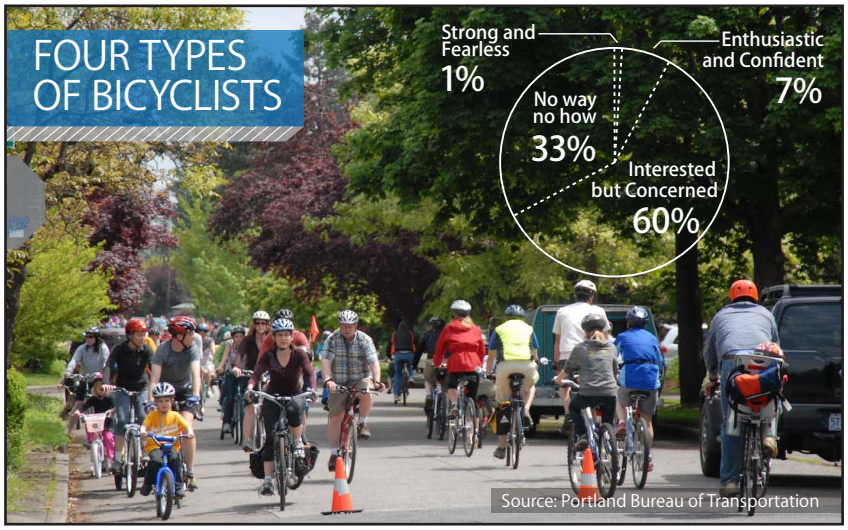


Figure 16 Four Types of Bicyclists (Credit: Creating Walkable + Bikeable Communities)

5. Dill, Jennifer, and Nathan McNeil. "Four Types of Cyclists?." Transportation Research Record: Journal of the Transportation Research Board 2387.1 (2013): 129-138.

4.1.4 UBMP TARGET AUDIENCE

Based on the documents listed in Sections 4.1.2 and 4.1.3, **the Urbana Bicycle Master Plan aims to serve the following users:**

1. **1999 AASHTO Bike Guide**
   a. *Type B: Basic (Casual Adult Cyclist)*
2. **2012 AASHTO Bike Guide**
   a. *Casual / Less Confident Riders*
3. **Portland State University - Four Types of Bicyclists**
   a. *Interested but Concerned (approximately 60% of the population)*

The "Type B: Basic cyclist" target audience remains the same as that of the 2008 Urbana Bicycle Master Plan. According to *Creating Walkable + Bikeable Communities*, "broadening the target audience beyond hard-core bicyclists...to the 'interested but concerned' demographic, low-income and minority populations, older adults, youth, and other underrepresented groups is an increasingly important objective."

4.2 GUIDELINES FOR SELECTING BICYCLE FACILITIES

Illinois Vehicle Code 625 ILCS 5/11-1502 states that bicyclists riding on a roadway have all the rights and responsibilities of vehicle drivers with certain exceptions.

While bicyclists can legally ride on any street in Urbana with the exception of I-74, the 2012 AASHTO Bike Guide points out the value of bicycle facility installation:

> "While every street will serve as a bicycle facility to some extent, concentrating bicycle trips along specially treated corridors can help attract new bicyclists and reduce crashes for all modes."
>
> ***Source: AASHTO Bike Guide 2012***

The following guidelines were used when selecting routes for inclusion in Urbana's bicycle network:

- Serve the needs of bicyclists who differ in terms of skills and age levels, mostly targeting basic or less confident adult bicyclists ("Type B").
- Maintain and make use of the opportunities provided by the existing roadway system.
- Create an interconnected and continuous system of bicycle facilities that are spaced no more than 0.5 to 1 mile apart.
- Prioritize bikeways that connect to major trip generators such as schools, parks, and others significantly accessed by the public as identified at the public workshops.
- Integrate existing and new trails into the bicycle network.
- Install bike lanes on collector and other streets where possible.
- Cross major streets at traffic lights or 4-way stops where possible.
- Look for specific locations identified by the public as "gaps" in the bikeway network, and include recommendations for improvements where feasible.
- Stripe shared bike/parking lanes and sign as a Bike Route on wide roadways with low parking occupancy.
- Stripe bike lanes with no parking allowed in these lanes when a road has sufficient width and there is a need for a bicycle facility.

4.3 IDEAL ROAD CHARACTERISTICS

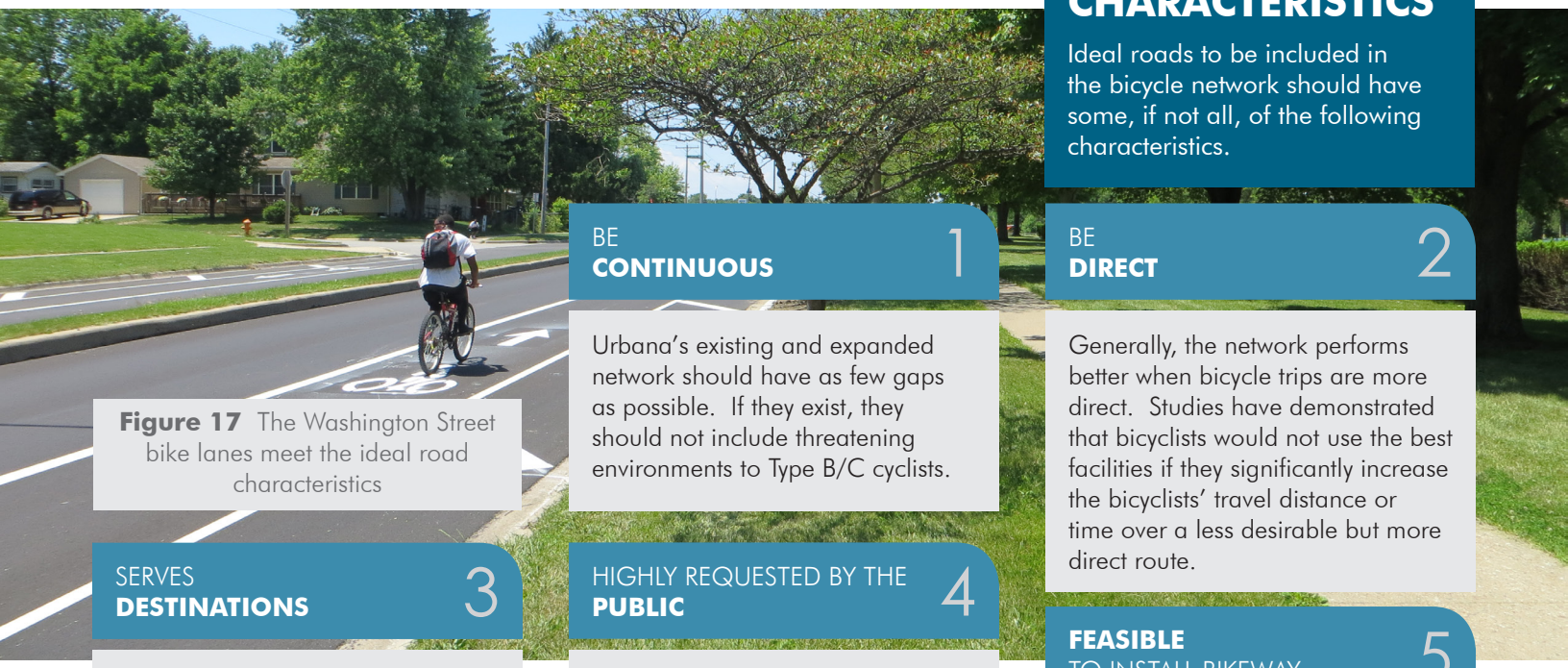


Figure 17 The Washington Street bike lanes meet the ideal road characteristics

IDEAL ROAD CHARACTERISTICS

Ideal roads to be included in the bicycle network should have some, if not all, of the following characteristics.

BE **CONTINUOUS** 1

Urbana's existing and expanded network should have as few gaps as possible. If they exist, they should not include threatening environments to Type B/C cyclists.

BE **DIRECT** 2

Generally, the network performs better when bicycle trips are more direct. Studies have demonstrated that bicyclists would not use the best facilities if they significantly increase the bicyclists' travel distance or time over a less desirable but more direct route.

SERVES **DESTINATIONS** 3

The bicycle network serves bicycle trip destinations, such as work, school, shopping, social gatherings, recreation, and other personal needs.

HIGHLY REQUESTED BY THE **PUBLIC** 4

Urbana's existing and expanded network should include specific routes that meet the needs of the anticipated users as opposed to an alternative route.

FEASIBLE TO INSTALL BIKEWAY 5

The most critical variable affecting the ability of a roadway to accommodate a marked bikeway is width. Sufficient right-of-way is also important for all bikeway projects. Reasonable project costs are another feasiblity consideration.

GOOD CROSSINGS OF BUSY ROADWAYS 6

The bicycle network should provide sound crossings at busy and wide roads for users' safety and convenience. This is because many arterial streets are difficult to cross, especially during peak hours.

NO BRICK STREETS 7

Concrete and asphalt are the most appropriate materials for bikeways. Surfaces should have a smooth but not slick finish, which can be dangerous to bicyclists during wet conditions.

LOWER TRAFFIC VOLUMES 8

Few or no conflict(s) between bicyclists and motor vehicles should occur on bikeways.

EFFICIENT WITH **FEW STOPS &/OR TURNS** 9

Minimize intersections that require bicyclists to stop, and/or turning at intersections in the bicycle network to minimize the likelihood of bicycle/vehicle crashes, since most of these crashes occur at intersections.

PROVIDES A SENSE OF **SECURITY** 10

Security issues are important to consider especially for sections of shared-use paths that are not visible from roads and neighboring buildings. Knowledge that bicyclists can access water fountains, restrooms, and bike parking also provide security.

AESTHETICALLY PLEASING 11

Trees can provide cooler riding conditions in summer and can provide a windbreak. Bicyclists tend to favor roads with adjacent land uses that are attractive, such as campuses, shopping districts, and those with scenic views.

4.4 BICYCLE LEVEL OF SERVICE (BLOS) GUIDELINES

BICYCLE LEVEL OF SERVICE (BLOS) GUIDELINES

The guidelines for selecting the recommended bikeway type for specific street segments depends on the street's Bicycle Level of Service (BLOS) scores and grades. BLOS rates a roadway's "bicycle-friendliness," with "A" as the best and "F" as the worst. More explanation can be found in Chapter 10. The guidelines are described below.

Figure 18 Philo Road, BLOS Grade B

BLOS GRADE SPECTRUM

A B C D E F

A to High C
For Type B (Casual Adult Bicyclists)

Aim to achieve a BLOS rating of High C or above for inclusion of on-road bikeways in the network. This is an appropriate goal for accommodating the casual adult bicyclist (Type B). Inclusion in the network is signified by the installation of Bike Lanes, Bike Route signage (with wayfinding signage), or Shared Bike/Parking Lanes.

Low C to High D
For Type A (Advanced Bicyclists)

Advanced cyclists (Type A) are more traffic-tolerant, often using busier roads not meeting the standard for inclusion in the network. For popular routes with a BLOS rating of Low C or High D, Bikes May Use Full Lane signage can be used as a message to motorists to be alert for cyclists. Wayfinding signage is not to be included on these roads.

0-1.5 1.5-2.5 2.5-3.5 3.5-4.5 4.5-5.5 >5.5

BLOS SCORE SPECTRUM

4.5 OTHER BICYCLE FACILITY PRE-SELECTION GUIDANCE

The Montgomery County, MD Bicycle Planning Guidance document prepared by Kittelson & Associates and Toole Design Group in 2014 provides guidance for selecting bicycle facilities to accomodate both "Interested but Concerned" cyclists and "Enthusiastic & Confident" cyclists.

Figure 19 is a flow chart outlining Montgomery County, MD's bicycle planning approach. This tool is a multi-step process for planners and engineers to determine the best bikeway solution for an existing or proposed roadway to accommodate bicyclists of varying skills and comfort levels. In the event that there is insufficient space to accommodate the desired bikeway facility on a primary route, the process may lead to implementation of both a facility on the primary route designed for confident cyclists and one on a parallel route designed for casual adult cyclists.

Figures 20 and 21 are charts that engineers and planners can use to design bikeways for "Interested but Concerned" and "Enthusiastic & Confident" cyclists, respectively. These charts identify what facilities are appropriate for different speeds (observed when available; design or posted otherwise) and traffic volumes. Confident cyclists typically require less physical separation from motorized vehicles than the casual adult bicyclist. Physically separated facilities can be shared-use paths.

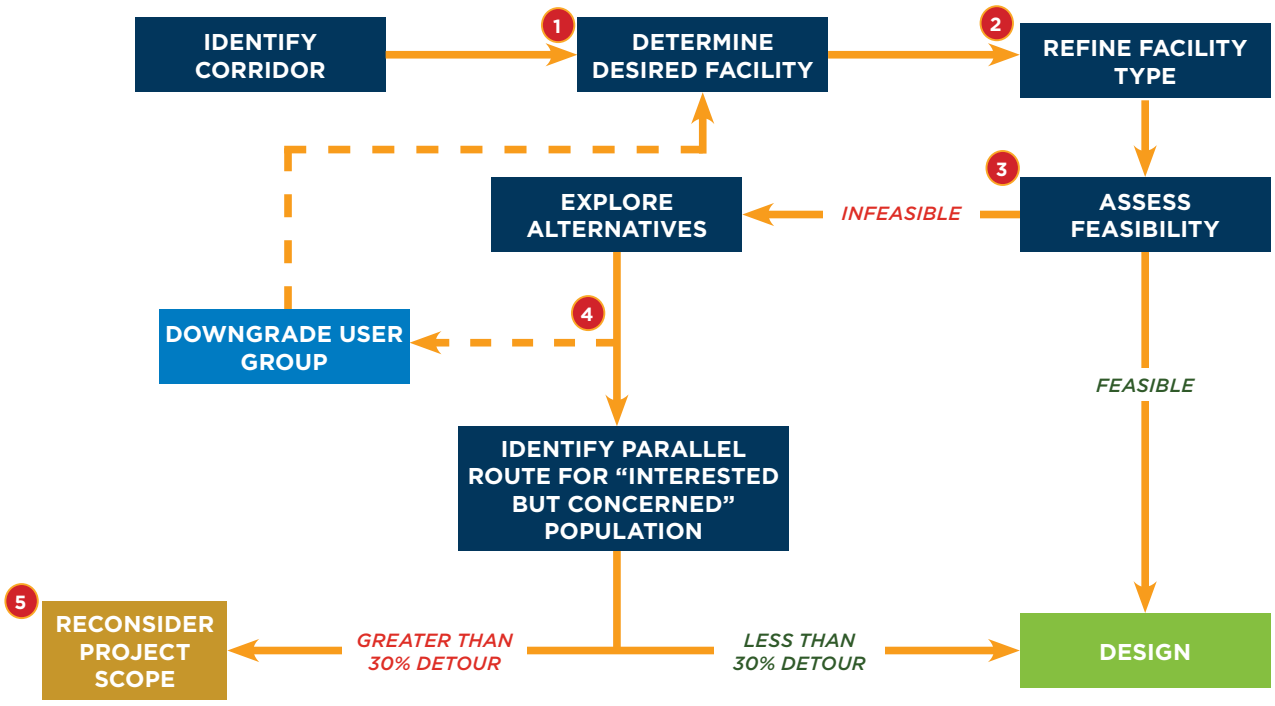


Figure 19 Bicycle Facility Decision-Making Process (Credit: Montgomery County, MD Bicycle Planning Guidance)

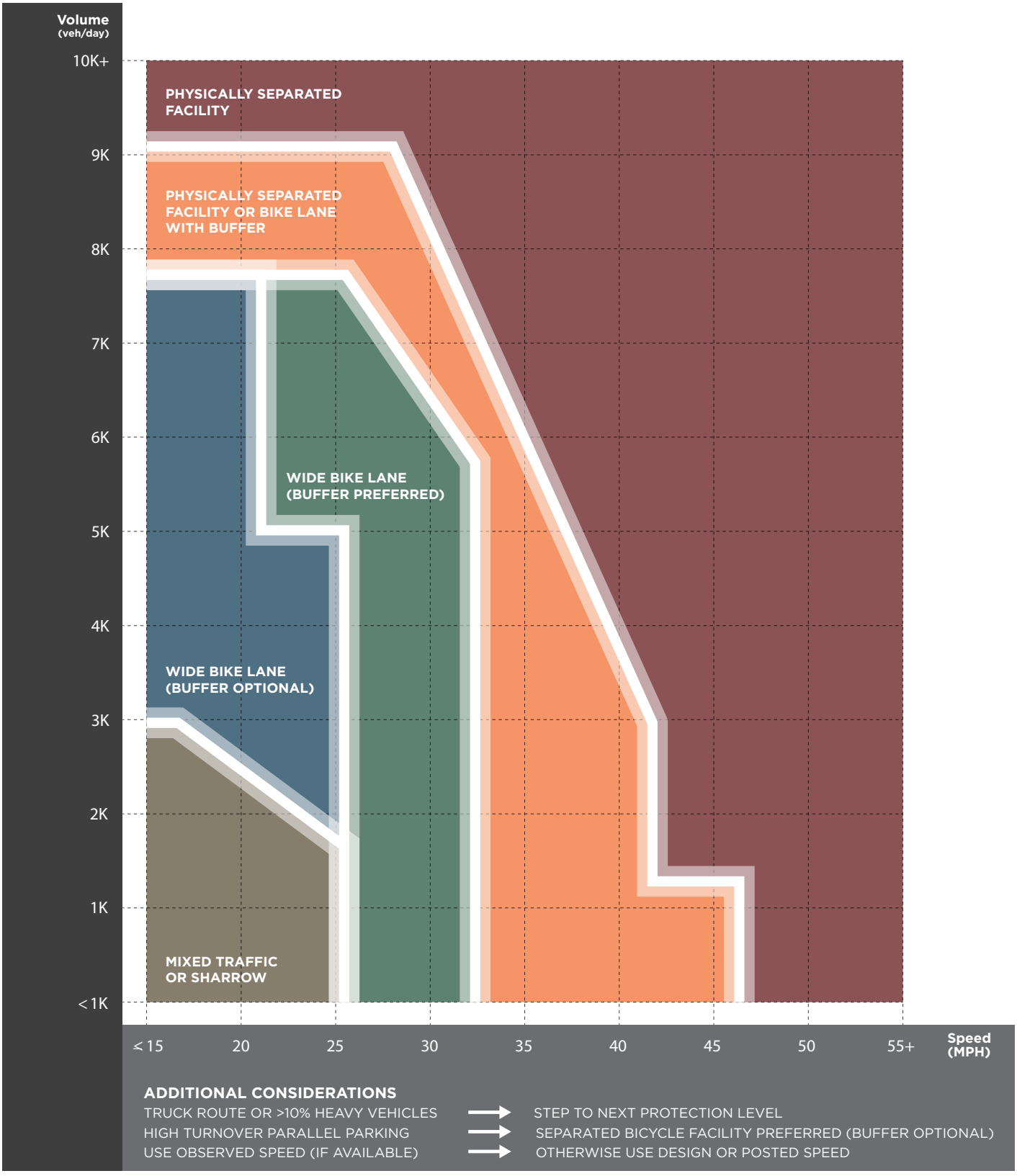


Figure 20 Facility Pre-Selection Process for Interested but Concerned Cyclists
(Credit: Montgomery County, MD Bicycle Planning Guidance)

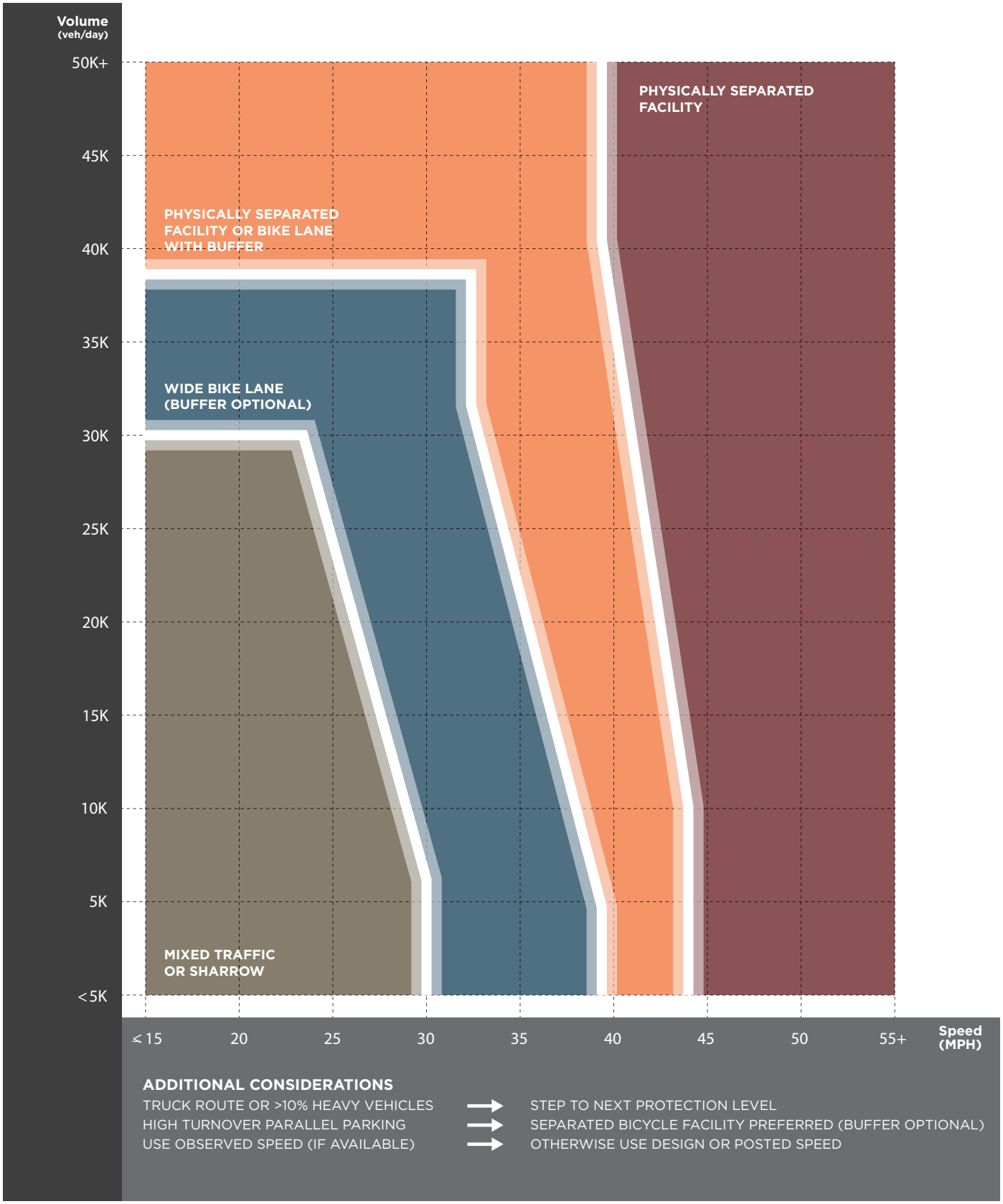


Figure 21 Facility Pre-Selection Process for Enthusiastic & Confident Cyclists
(Credit: Montgomery County, MD Bicycle Planning Guidance)