



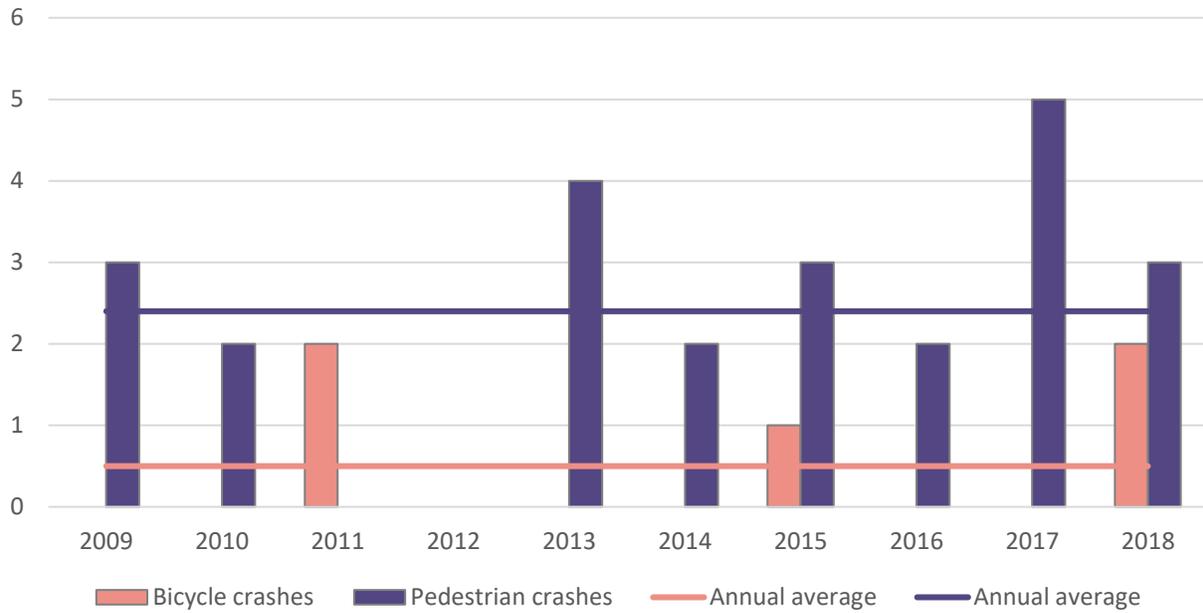
## OVERVIEW

- Between January of 2009 and June of 2019, there were 30 crashes involving either pedestrians or bicyclists. This results in a rate of 0.24 crashes per month, 3 crashes per year.
- 24 crashes (80 percent) involved pedestrians, while 6 involved bicyclists.
- Almost all of the crashes (29, or 97 percent) involved the injury or death of a person walking or bicycling.
  - 24 crashes involved injuries only, and another 5 involved a fatality. Four fatalities involved people walking, while the other was a person bicycling.
  - 7 out of 24 (29 percent) injury-only crashes involved serious injuries.<sup>1</sup>
- **Chart 1** shows the number of crashes by year. **Chart 2** shows the number of fatal and serious injury crashes by year.

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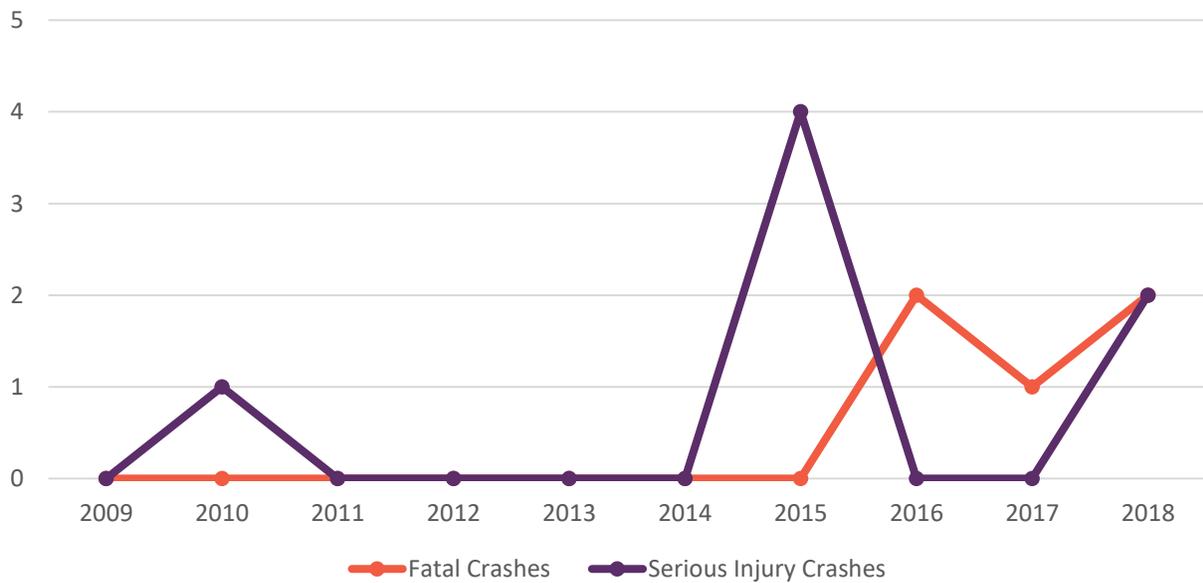
<sup>1</sup> Crash reports rank the severity of crashes as either fatal, suspected serious injury, suspected minor injury, possible injury, or no injury. Suspected serious injury crashes used to be reported as “incapacitating,” and suspected minor injury crashes were reported as “non-incapacitating.” For this report, suspected serious and incapacitating crashes are combined as “serious injury” crashes.

**Chart 1: Pedestrian/Bicycle Crashes in Unincorporated Anderson County by Year**



Bike	0	0	2	0	0	0	1	0	0	2
Ped	3	2	0	0	4	2	3	2	5	3
Total	3	2	2	0	4	2	4	2	5	5

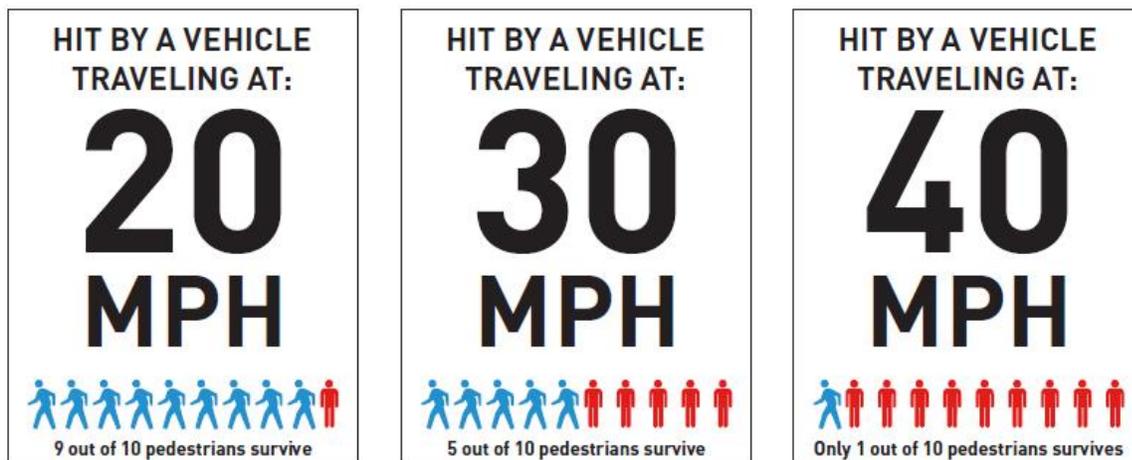
**Chart 2: Pedestrian/Bicycle Crashes in Unincorporated Anderson County Resulting in Fatality or Serious Injury**



## CRASH SEVERITY

Crashes in suburban and rural locations are less common, but tend to be more severe. This is likely due to higher travel speed of motor vehicles, compared with speeds in urban areas. For example, Cumberland Avenue in Knoxville has the most pedestrian/bicycle crashes per mile of any corridor in the Region, yet it hasn't seen any pedestrian/bicycle fatalities since 2007. By contrast, Oak Ridge Highway in Knox County saw only five pedestrian/bicycle crashes over eight years, but three of those crashes resulted in fatalities.

The graphic below illustrates the likelihood of a pedestrian being killed in a crash based on the speed of the motor vehicle.



## MAJOR ARTERIALS

- A disproportionate share of pedestrian/bicycle crashes, especially serious crashes, occurred on major arterials (streets such as Clinton Highway).
  - 13 percent of crashes (4 crashes) occurred on major arterials, all of them along Clinton Highway.
  - 3 of the major arterial crashes involved people walking, while 1 involved a bicyclist.
  - Crashes on major arterials resulted in 1 serious injury, which is 14 percent of all serious injuries resulting from pedestrian/bicycle crashes.
  - Crashes on major arterials resulted in 2 of the 5 fatalities.

## TYPES OF CRASHES ANALYZED IN THIS REPORT

This report analyzes certain crash factors. It focuses on identifying locations and behaviors where interventions – in the form of design changes, education, or enforcement – may help to prevent future crashes. 14 (47 percent) of the 30 total crashes fit into one of these categories. Categories of crashes analyzed in this report are:

- **Drivers failing to yield while turning.** These are crashes where the report indicates that the pedestrian or bicyclist was behaving properly while traveling along or across a street, and the driver failed to yield while making a turn. These crashes suggest the need for changes to the geometry of the intersections and/or to the function of the traffic signals to prevent future crashes. Education and traffic enforcement can also help prevent these types of crashes.
- **People struck by cars while walking in locations without sidewalks.** These are crashes where the report indicates the pedestrian was walking along a street without sidewalks and was struck by a car. These crashes indicate the need for sidewalks to be installed.
- **Drivers failing to yield while going straight.** These are crashes where the report indicates that the pedestrian or cyclist was crossing the street in a legal crosswalk<sup>2</sup>, either marked or unmarked, and was struck by a driver. These crashes indicate the need for better design of crossing locations, which may include reducing crossing distances and the addition of signs, beacons, or signals. Education and traffic enforcement can also help prevent this type of crash.
- **Bicyclists riding in locations without safe facilities.** This category encompasses two crash factors: crashes where a bicyclist was struck from behind, or was struck while riding on the sidewalk.<sup>3</sup> These crashes indicate the need for a safe bicycle facility along a corridor.
- **People struck by cars while crossing a street outside of an intersection or marked midblock crossing.** These are crashes where the report indicates a pedestrian was struck while crossing a street at a location other than an intersection or a marked midblock crossing. These crashes suggest the need for additional crossings, as the existing crossings may be dangerous or inconvenient. Education of pedestrians can also help prevent this type of crash.
- **Bicyclists riding in an unsafe manner or location.** This category encompasses two crash factors: crashes where the bicyclist was either riding on the street against traffic, or riding at night with no lights. These crashes suggest the need for education for bicyclists.

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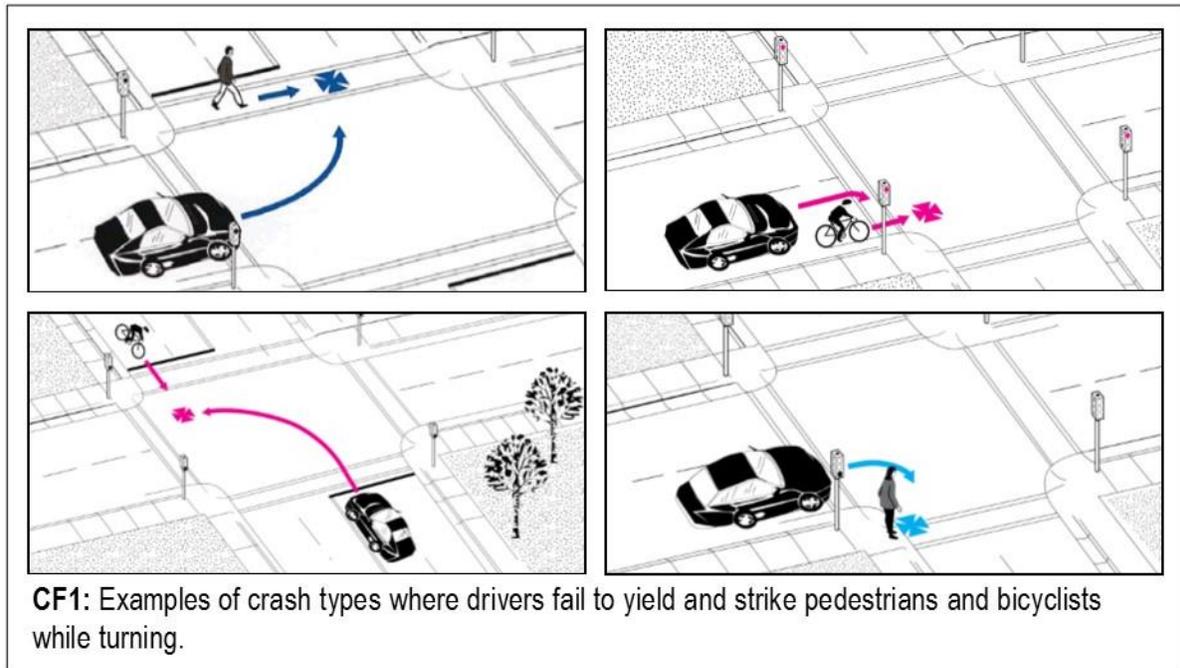
<sup>2</sup> Tennessee Code Annotated 55-8-101 (11) defines “crosswalk” as “(A) That part of a roadway at an intersection included within the connections of the lateral lines of the sidewalks on opposite sides of the highway measured from the curbs or, in the absence of curbs, from the edges of the traversable roadway; or (B) Any portion of a roadway at an intersection or elsewhere distinctly indicated for pedestrian crossing by lines or other markings on the surface.”

<sup>3</sup> Riding a bicycle on the sidewalk is legal. Bicycle safety educators generally warn against it, because of the danger from turning motor vehicles.

TABLE 1: Crash Factors		Number of Crashes			Percent of Crashes*
		Ped	Bike	Total	
1. Drivers failing to yield while turning (3 total crashes)	Turning left	0	1	1	7
	Turning right (not right on red)	1	0	1	7
	Turning right on red light	1	0	1	7
	Direction of turn unclear	0	0	0	0
2. Pedestrian struck while walking along corridor without sidewalks		6	n/a	6	43
3. Driver failing to yield while going straight		0	0	0	0
4. Bicyclist riding on sidewalk		n/a	0	0	0
5. Pedestrian crossing street outside of an intersection or marked crosswalk		4	n/a	4	29
6. Bicyclist riding against traffic		n/a	0	0	0
7. Driver striking bicyclist from behind		n/a	0	0	0
8. Bicyclist riding at night with no lights		n/a	1	1	7

\*Percentages may not total to 100 due to rounding

## Crash Factor 1: Drivers failing to yield while turning



Of the crashes where a crash factor has been identified, 3 (21 percent) involved a pedestrian or bicyclist hit by a car whose driver failed to yield properly when turning.<sup>4</sup>

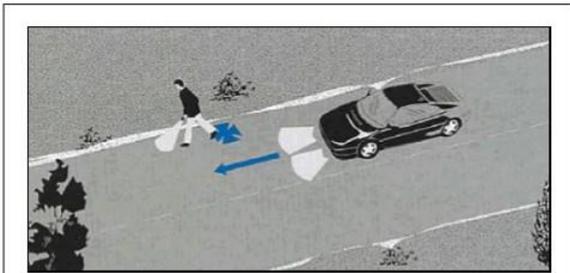
- Of these, 1 crash involved a driver turning left; 1 involved a right turn (not on a red light); and 1 involved a right turn on red.
- All of these crashes involved injuries, 1 of them a serious injury, with no fatalities.
- 2 of these crashes involved pedestrians, and the other involved a bicyclist.
- **Table 2** has details about the locations of these crashes.

**TABLE 2: Locations of failure-to-yield crashes (number in red indicates bicyclist involved)**

Corridor	Cross street/area	Left turns	Right turn (not on red)	Right turn on red
Duke St	west of Royal St		1	
E Tri-County Blvd	Oliver Springs Hwy			1
Mehaffey Rd	Green Ln	1		

<sup>4</sup> This crash factor is identified only where the bicyclist or pedestrian involved was traveling safely and within the law and the driver failed to yield

## Crash Factor 2: People struck by cars while walking in locations without sidewalks



**CF2:** A frequent crash type in rural & suburban areas is pedestrians being struck while walking in locations lacking sidewalks.

In 6 crashes (43 percent), a person walking along a street without a sidewalk was hit by a driver.<sup>5</sup> All crashes involved injuries, and 1 fatality (on Clinton Highway).

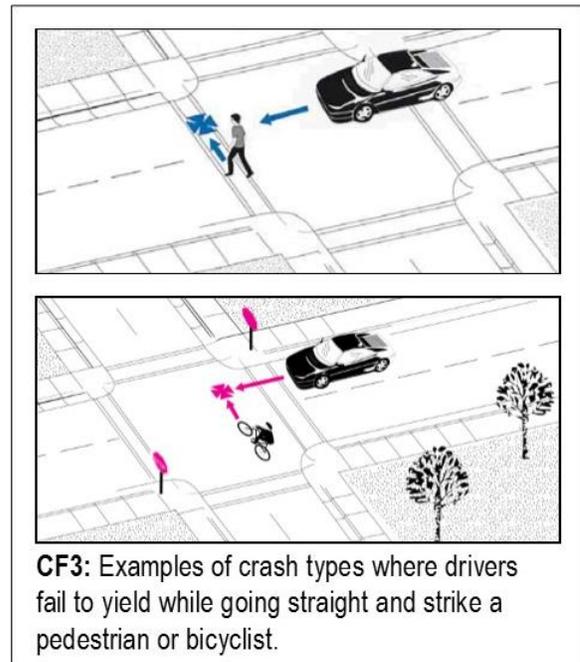
**Table 3** shows the locations of all crashes of this type.

<b>TABLE 3: Locations of people being struck while walking along streets without sidewalks</b>	
<b>Crash occurred on this street</b>	<b>In this area</b>
Briceville Hwy	Andys Ridge Rd
Circle Dr	Elm Valley St
Clinton Hwy	W Wolf Valley Rd
Cove Ln	Breeden Ln
Old State Cir	Clinton Hwy
Park Ln	Mill Creek Rd

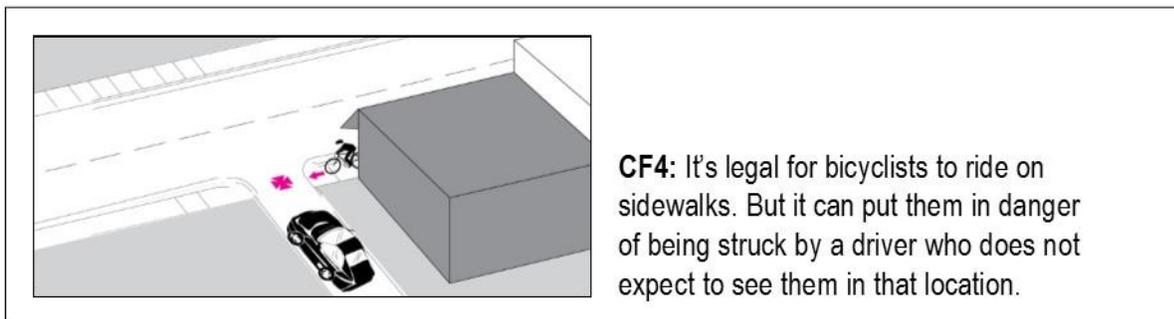
<sup>5</sup> This crash factor is identified only where the crash report finds that the pedestrian was walking along the side of the road when the crash happened, not cases where pedestrians entered the road to cross.

### Crash Factor 3: Driver failing to yield while going straight

No crashes of this type were reported in unincorporated Anderson County during the time analyzed in this report.

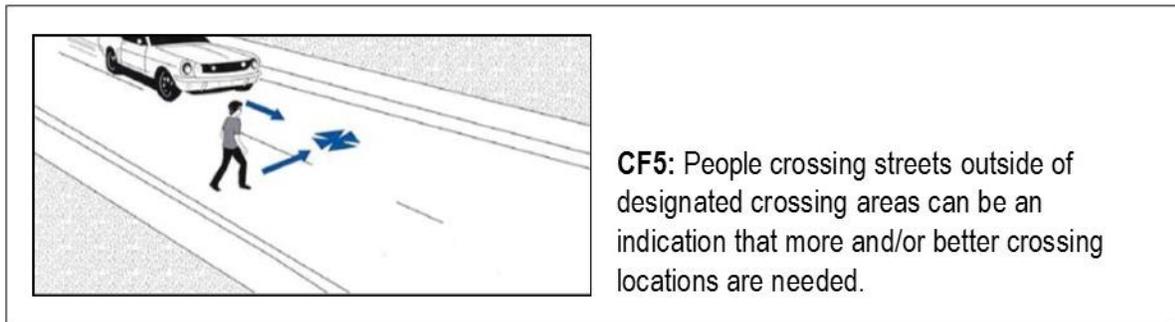


### Crash Factor 4: Bicyclist riding on sidewalk



No crashes of this type were reported in unincorporated Anderson County during the time analyzed in this report.

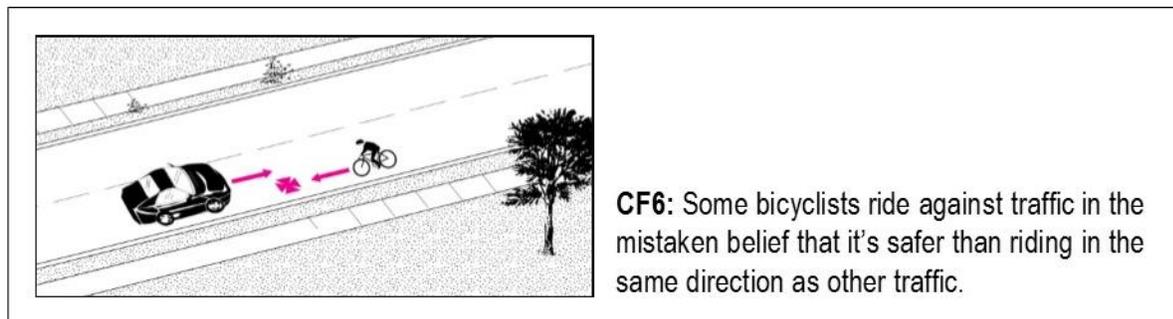
## Crash Factor 5: Pedestrian crossing street outside of an intersection or marked crosswalk



In 4 crashes (29 percent), pedestrians were crossing the street outside of an intersection or marked crosswalk. All of these crashes involved injuries, 3 of them serious injuries, with no fatalities. **Table 4** shows the locations of all crashes of this type.

<b>TABLE 4: Areas with pedestrians struck while crossing outside of an intersection or marked crosswalk</b>	
<b>Crash occurred on this street</b>	<b>In this area</b>
Clinton Hwy	north of Edgemoor Rd
Lake City Hwy	north of Granite Rd
Longmire Rd	east of N Main St
New River Hwy	north of Rockhouse Lane

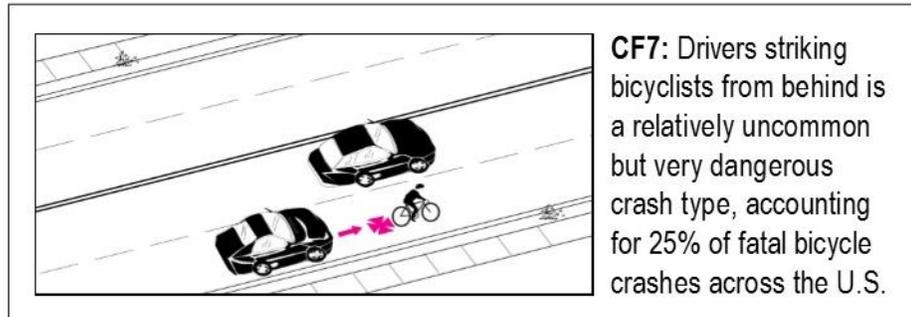
## Crash Factor 6: Bicyclist riding against traffic



No crashes of this type were reported in unincorporated Anderson County during the time analyzed in this report.

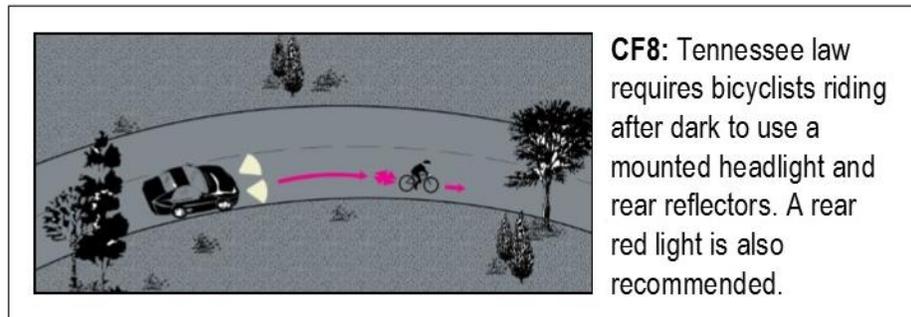
## Crash Factor 7: Driver striking bicyclist from behind

No crashes of this type were reported in unincorporated Blount County during the time analyzed in this report.



## Crash Factor 8: Bicyclist riding at night with no lights

1 bicyclist was struck while riding at night with no lights. It was a fatal crash.



## Methodology

Crash data were downloaded from the TITAN database maintained by the State of Tennessee. Crashes were mapped in ArcMap GIS software based on latitude/longitude or closest intersection, where lat/long data were not available. TPO staff then reviewed the location of each crash to correct data errors. TPO staff assigned crash factors based on information obtained from individual crash reports, including crash narratives and information about citations issued.

## Image credit

All crash type images are from the Pedestrian and Bicycle Crash Analysis Tool (PBCAT), which was developed by the Federal Highway Administration (FHWA), in cooperation with the National Highway Traffic Safety Administration (NHTSA). The purpose of the PBCAT is to assist with analysis of pedestrian/bicycle crashes with the goal of preventing them.