

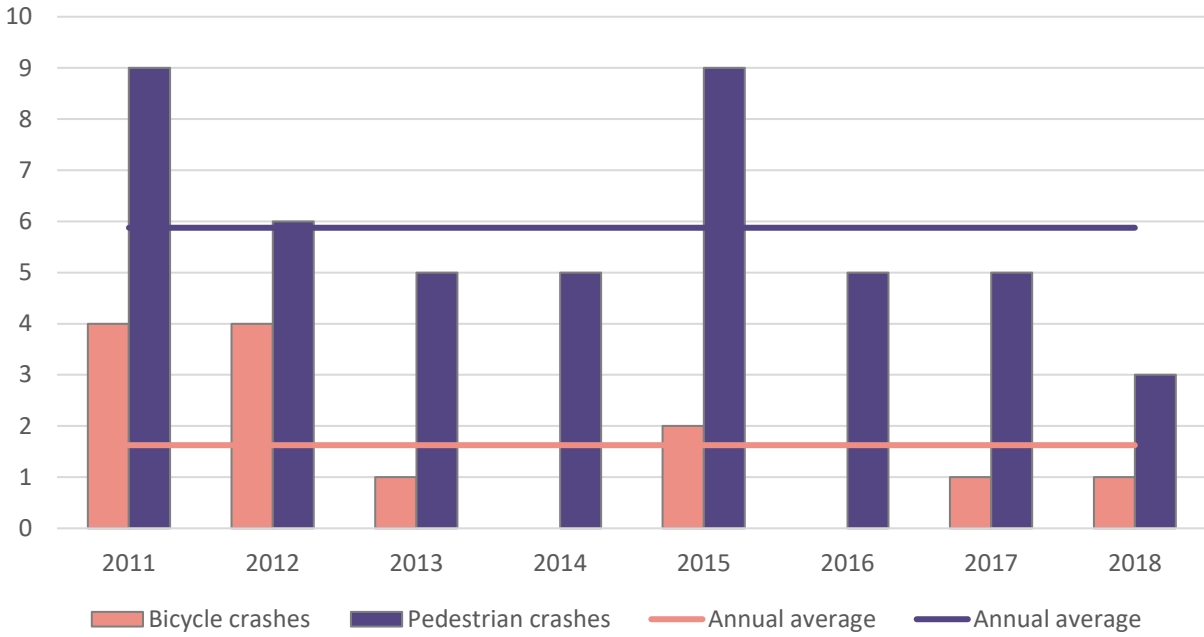


OVERVIEW

- Between September of 2010 and June of 2019, there were 68 crashes involving either pedestrians or bicyclists. This results in a rate of 0.6 crashes per month, 7.7 crashes per year.
- 53 crashes (78 percent) involved pedestrians, while 15 involved bicyclists.
- Almost all of the crashes (65, or 96 percent) involved the injury or death of a person walking or bicycling.
 - 61 crashes involved injuries only, and another 4 involved a fatality. All 4 fatalities involved people walking.
 - 26 out of 61 (43 percent) injury-only crashes involved serious injuries.¹
- **Chart 1** shows the number of crashes by year. **Chart 2** shows the number of fatal and serious injury crashes by year.

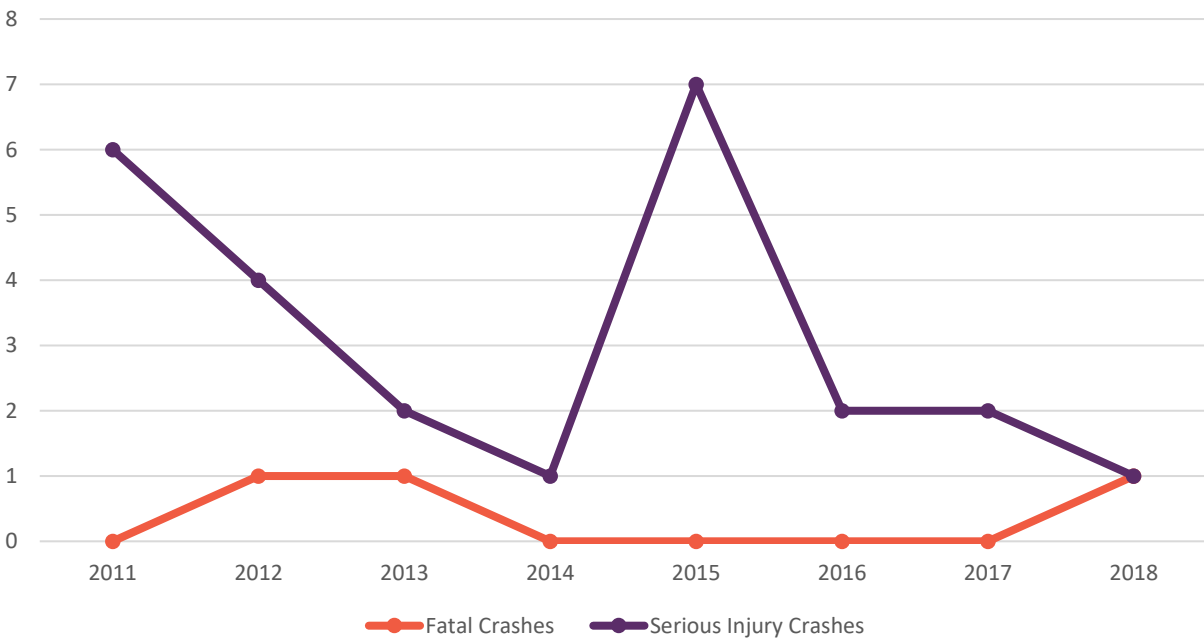
¹ Crash reports rank the severity of crashes as either fatal, suspected serious injury, suspected minor injury, possible injury, or no injury. Suspected serious injury crashes used to be reported as “incapacitating,” and suspected minor injury crashes were reported as “non-incapacitating.” For this report,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

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



Bike	4	4	1	0	2	0	1	1
Ped	9	6	5	5	9	5	5	3
Total	13	10	6	5	11	5	6	4

Chart 2: Pedestrian/Bicycle Crashes in Unincorporated Blount 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.

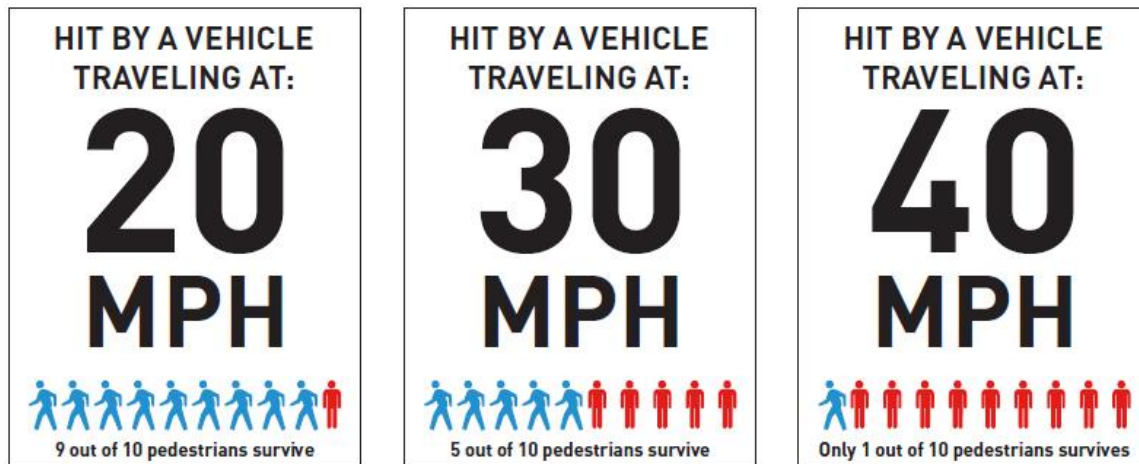
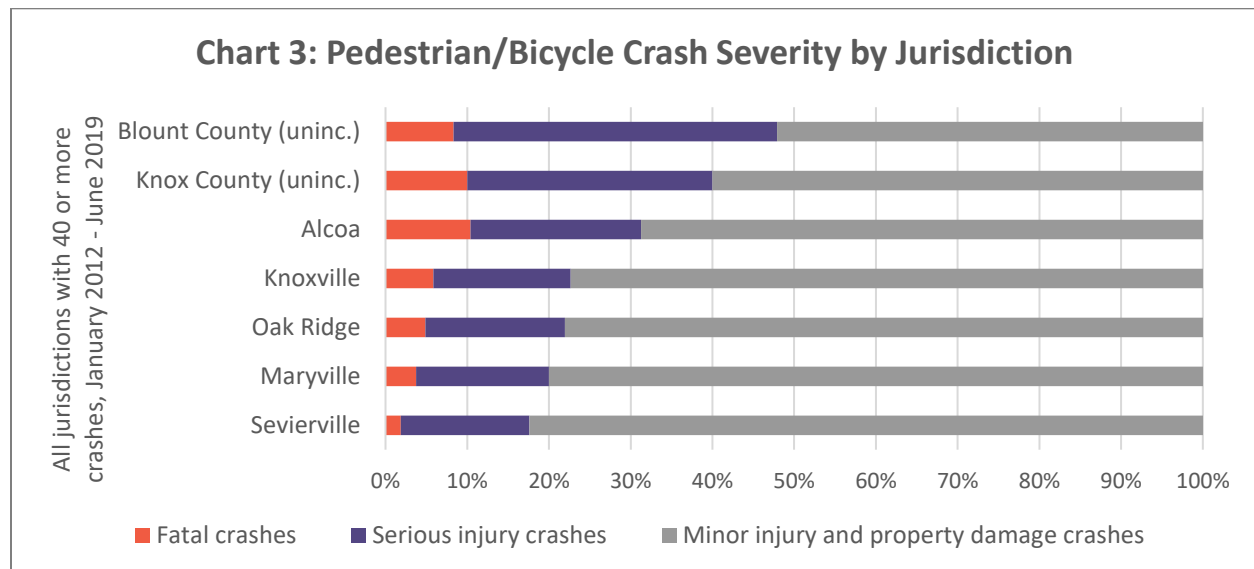


Chart 3 compares the prevalence of fatal and serious injuries in pedestrian/bicycle crashes among all jurisdictions with more than 40 pedestrian/bicycle crashes between January 2012 and June 2019.



MAJOR ARTERIALS

- A disproportionate share of pedestrian/bicycle crashes, especially serious crashes, occurred on major arterials (streets such as U.S. 321 and U.S. 411).
 - 18 percent of crashes (12 crashes) occurred on major arterials. 6 took place on U.S. 321, while 3 occurred U.S. 411, 2 on U.S. 129, and 1 on Chapman Highway.
 - 8 of the major arterial crashes involved people walking, while 4 involved bicyclists
 - Crashes on major arterials resulted in 4 serious injuries, which is 15 percent of all serious injuries resulting from pedestrian/bicycle crashes.
 - There were 2 fatalities on major arterials, which is 50% of fatal pedestrian/bicycle crashes.

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. 29 (43 percent) of the 68 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 crosswalk², 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.³ 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.

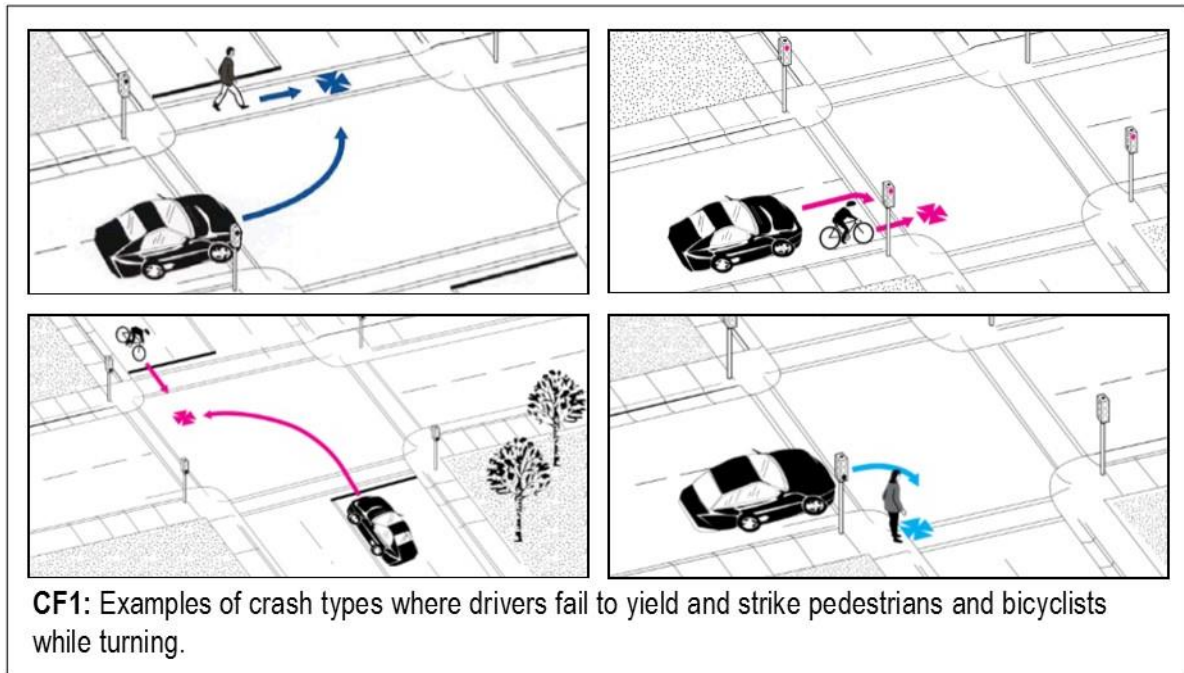
² Tennessee Code Annotated 55-8-101 (11) defines “crosswalk” as “(A) That part of a roadway at an intersection included within the connections of the lateral lines of the sidewalks on opposite sides of the highway measured from the curbs or, in the absence of curbs, from the edges of the traversable 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.”

³ 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	3	3	10
	Turning right (not right on red)	0	0	0	0
	Turning right on red light	0	0	0	0
	Direction of turn unclear	0	0	0	0
2. Pedestrian struck while walking along corridor without sidewalks		15	n/a	15	52
3. Driver failing to yield while going straight		2	1	3	10
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	14
6. Bicyclist riding against traffic		n/a	1	1	3
7. Driver striking bicyclist from behind		n/a	3	3	10
8. Bicyclist riding at night with no lights		n/a	0	0	0

*Percentages may not total to 100 due to rounding

Crash Factor 1: Drivers failing to yield while turning



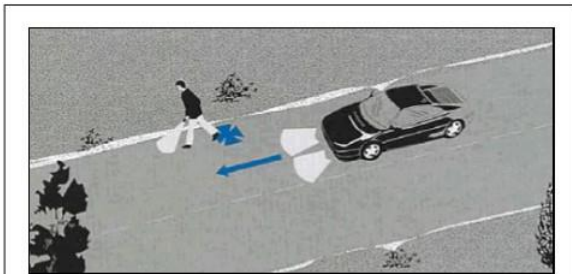
Of the crashes where a crash factor has been identified, 3 (10 percent) involved a pedestrian or bicyclist hit by a car whose driver failed to yield properly when turning.⁴

- All of the crashes involved drivers turning left and striking bicyclists.
- All of the crashes involved injuries, none of them serious injuries or fatalities.
- **Table 2** has more details about the locations of these crashes.

Corridor	Cross street/area	Left turns	Right turn (not on red)	Right turn on red	Turn direction unclear
Black Oak Ridge Rd	W Macon Ln	1			
Calderwood Hwy	Brick Mill Rd	1			
U.S. 321	Heritage High School driveway	1			

⁴ 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 15 crashes (52 percent), a person walking along a street without a sidewalk was hit by a driver.⁵ 14 crashes involved injuries, 3 serious, and no fatalities.

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

Crash occurred on this street	In this area
Alnwick Blvd	Big Springs Rd
Burnett Station Rd	Hinkle Rd
Cecelia Ave	Webster Court
E Old Topside Rd	Wrights Ferry Rd
Glen Echo Dr	Kian Ct
Montvale Rd	Patty Rd
Sevierville Rd	Davis Ford Rd
Sevierville Rd	Hinkle Rd
Sevierville Rd	Keeble Rd
Summer Dr	Pendleton Dr
Temple Rd	Sevierville Rd
Topside Rd	Alcoa Highway
U.S. 321	Gateway Rd
Vinegar Valley Rd	Finn Long Rd
Williams Mill Rd	Triple Oak St

⁵ 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

In 3 crashes, drivers were going straight and failed to yield for a person walking or bicycling across the street in a legal crosswalk, either marked or unmarked, or who otherwise had the right of way.⁶

2 of these crashes involved pedestrians. 2 of the crashes involved injuries, 1 serious, with no fatalities.

Table 4 shows the locations of all crashes of this type.

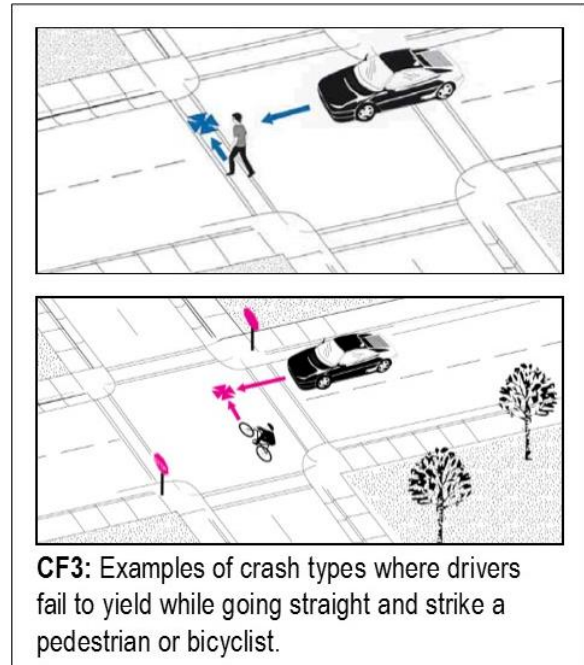
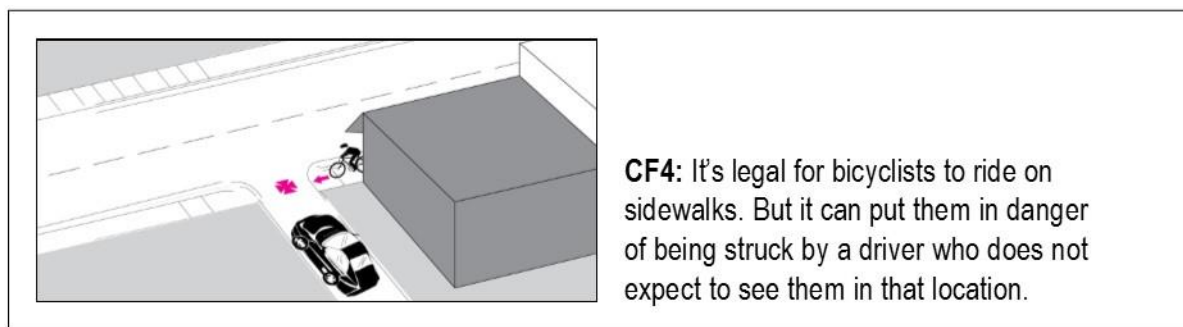


TABLE 4: Areas with pedestrians struck by drivers going straight and failing to yield	
Crash occurred on this street	In this area
Miser Station Rd	at Benson Ln
Russell Rd	at Triple Oak St
Wrights Ferry Rd	at E Old Topside Rd

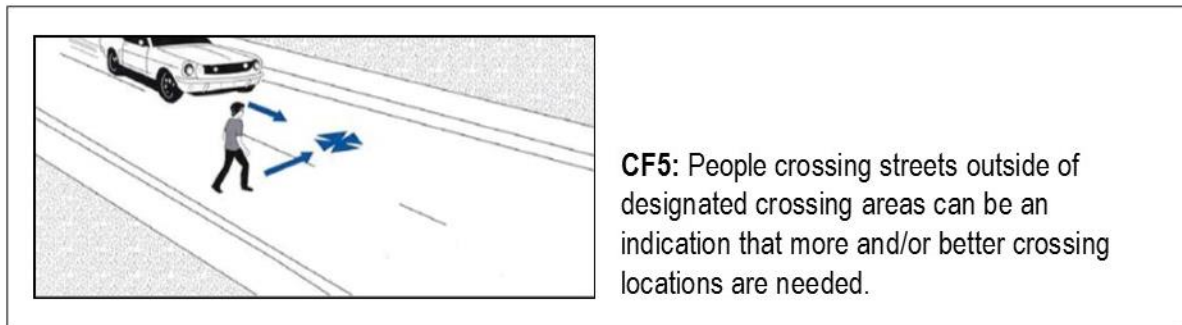
Crash Factor 4: Bicyclist riding on sidewalk



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

⁶ This crash factor is not identified where the crash report finds that the person walking or bicycling entered the street in a way that failed to give the driver sufficient time to yield the right of way.

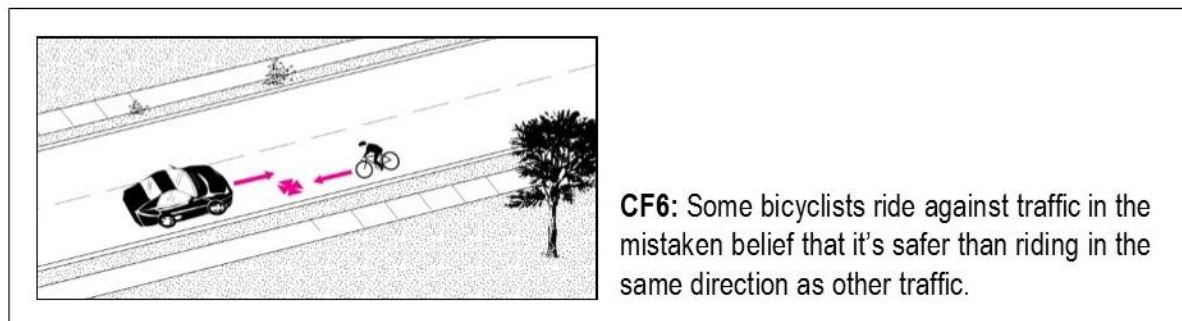
Crash Factor 5: Pedestrian crossing street outside of an intersection or marked crosswalk



In 4 crashes (13 percent), pedestrians were crossing the street outside of an intersection or marked crosswalk. All of these crashes involved injuries, 2 of them serious injuries, with 1 fatality (on Chapman Highway). **Table 5** shows the locations of all crashes of this type.

TABLE 5: Areas with pedestrians struck while crossing outside of an intersection or marked crosswalk	
Crash occurred on this street	In this area
Chapman Hwy	north of Burnett Ln
Mint Rd	west of Walker School Rd
Morganton Rd	east of Panorama Dr
U.S. 321	east of Garrett Lane

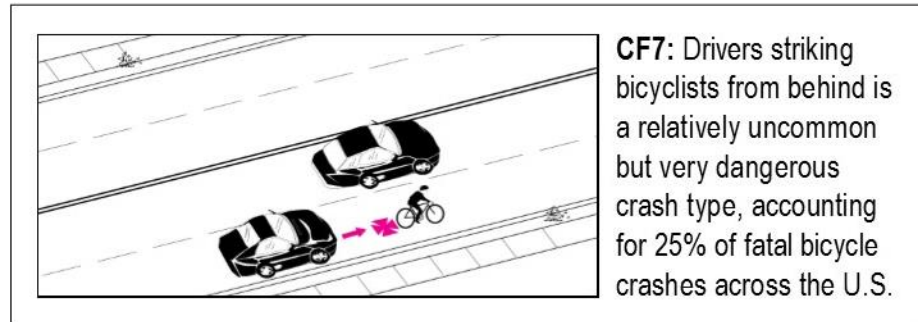
Crash Factor 6: Bicyclist riding against traffic



1 bicyclist was struck while riding against traffic. The crash involved and injury. It occurred along U.S. 411 near Big Z Dr.

Crash Factor 7: Driver striking bicyclist from behind

3 bicyclists were struck from behind by drivers (10 percent of crashes). All of these crashes involved injuries, 1 of them serious. **Table 6** shows the locations of all crashes of this type.

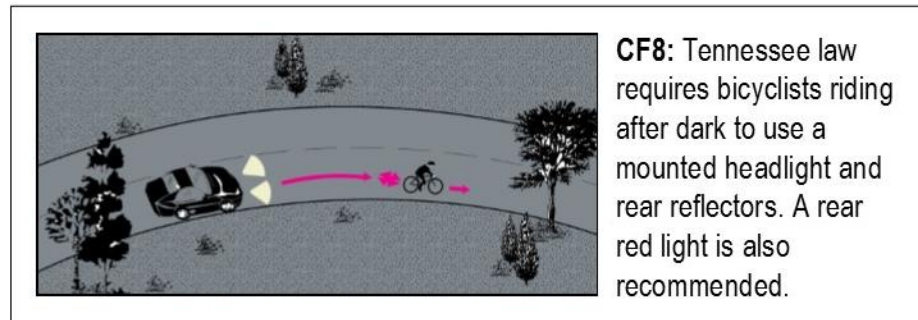


CF7: Drivers striking bicyclists from behind is a relatively uncommon but very dangerous crash type, accounting for 25% of fatal bicycle crashes across the U.S.

Crash occurred on this street	In this area
Beatress Circle	east of Rockford Walker Court
Blockhouse Rd	east of Old Piney Rd
U.S. 321	north of Old TN Highway 73

Crash Factor 8: Bicyclist riding at night with no lights

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



CF8: Tennessee law requires bicyclists riding after dark to use a mounted headlight and rear reflectors. A rear red light is also recommended.

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.