



## Highway 17 + Maryville Bikeway Bicycle + Pedestrian Counts

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Locations: Highway 17/Avondale, Highway 17/Magnolia, Bikeway/Wappoo

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## Area Description + Potential

Highway 17 S, known as Savannah Highway, runs through the City of Charleston's West Ashley suburb. It is a high volume primary route that links the peninsula over the Ashley River Bridges to the east, and Colleton County to the west. Our count's areas of focus encapsulate the following neighborhoods: Avondale, Ashley Forest, Byrnes Downs, Dupont Station, and Ardmore/Sherwood Forest. The Avondale Business District is largely regarded as the best example of a West Ashley gathering place. The neighborhoods along this stretch of Highway 17 are populated with grocery stores, public transit stops, schools, parks and greenspaces, employment, houses of worship, shopping centers and restaurants. CARTA Route 30 services the corridor, with the Transit app reporting on-time performance in the 70th percentile.

Parallel to 17 runs the West Ashley Greenway, which is part of the national East Coast Greenway route, and beginning in 2027, it will provide dedicated multi-modal access into downtown via the Ashley River Bicycle and Pedestrian Bridge. Adjoining 17 is the Maryville Bikeway, which connects from the Wappoo Road intersection through the Maryville-Ashleyville settlement community to Higgins Pier on the Ashley River. The neighborhoods are active, with a growing number of young families with children and bike/public transit commuters to the Medical District — some of whom have been vocal advocates for infrastructure to safely access schools on foot.

Charleston County's Savannah Highway Capacity and Intersection Improvements project will address the Highway 17/Avondale intersection by realigning Avondale Avenue with the currently-offset Nicholson Street, as well as realigning Magnolia Road as it approaches Highway 17. Plans also call for adding landscaped median segments along 17 and (new and expanded) sidewalks within the study scope. In 2018, the City of Charleston's Design Division published a report for the Avondale area, which mimics much of what is moving forward through the County's aforementioned project. The City of Charleston and Charleston County have plans out to bid to install a multi-use path from the West Ashley Greenway through the Highway 17/Wappoo Road intersection, linking to the Maryville Bikeway, in addition to other improvements to the 17/Wappoo intersection.

Additionally, in 2023, SCDOT — alongside stakeholders, including Charleston Moves — conducted a Road Safety Audit of Highway 17 from Wappoo Road to Hughes Road. According to the agency, there have been 2,567 vehicular, 8 bicycle, and 26 pedestrian

crashes from July 1, 2017 to June 30, 2022<sup>1</sup>. Standout recommendations include medians and intersection improvements.

Charleston Moves led on a Summer 2022 count series for the corridor. This includes bicycle and pedestrian (“bike/ped”) counts, utilizing the National Bicycle and Pedestrian Documentation Project resource, as well as community surveying and photo documentation of vulnerable road user trips. We set up at the Highway 17/Avondale Avenue, Highway 17/Magnolia Road and Maryville Bikeway/Wappoo Road intersections for a few reasons:

- Highway 17/Magnolia has been identified as a high-crash intersection in SCDOT’s [Pedestrian and Bicycle Safety Action Plan](#).
- Given the planned improvements to the 17/Avondale, 17/Magnolia and 17/Wappoo intersections, as well as the Wappoo Road multi-use path linking the West Ashley Greenway and Maryville Bikeway, we wanted to collect pre-installation user data.
- Anecdotally, we know there is a very high volume of vulnerable road user trips in the area, with far more expected once the Ashley River Bicycle and Pedestrian Bridge is open.

### Existing Conditions

Noteworthy takeaways regarding existing conditions throughout the corridor and at the studied intersections, and how vulnerable road users navigate the space:

1. Highway 17 is straight with two travel lanes in each direction, plus a center two-way left turn lane (TWLTL). It is engineered to move as many motor vehicles as as possible, as quickly as possible, with as few impediments as possible. Despite being a dangerous corridor with a distinct lack of acknowledgment for vulnerable road users, there is a high volume of bicycle, pedestrian and transit trips in the area, particularly around Avondale and through intersections that link people to the West Ashley Greenway.
2. There is a short raised and vegetated median in the Avondale Business District, installed after a decade of advocacy by neighborhood leadership.
3. CARTA Route 30 services the corridor, with multiple stops throughout. Many buses we observed had front bike racks that were full. Transit stops have inconsistent accommodations, and many are not handicap accessible.
4. Due to a total lack of bicycle facilities, most people we witnessed rode on the sidewalk. This caused conflicts with pedestrians, including people with canes

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<sup>1</sup> [https://info2.scdot.org/projects/ViewerFiles/P041901-Savannah Hwy-Handout \(002\).pdf](https://info2.scdot.org/projects/ViewerFiles/P041901-Savannah Hwy-Handout (002).pdf)

and wheelchairs. This also caused conflicts with motor vehicles at side street approaches, driveways and commercial entryways. We did observe the occasional bicyclist riding in the TWLTL and in the travel lane. The volume of existing demand, coupled with additional trips that will be generated by the Ashley River Bicycle and Pedestrian Bridge and other planned improvements, indicates that this corridor needs to be improved to balance the space for all modes and safely accommodate everyone. Namely, motor vehicle speeds must be reduced, and intersections need to prioritize vulnerable road users — particularly in locations that link them to major destinations (i.e. the West Ashley Greenway, Maryville Bikeway, commercial nodes and schools).

5. In many areas, sidewalks are overgrown with vegetation and covered in sediment, significantly narrowing the usable space. In the Avondale area, there is a mix of impediments that encroach the sidewalk, such as low walls, trees and utility poles. All of this makes traveling in a wheelchair nearly impossible, and often places people even closer to lanes of traffic. The sidewalk along the corridor also alternates between being right up against traffic and having a grass buffer.
6. Crossing at intersections is intimidating. Signal timing is bad, causing conflicts with pedestrians and motorists making turns, who do not yield to vulnerable road users. Crosswalks are too long, faded, and lack ladder-style, high-visibility paint. Many intersections are incomplete, with only two or three crosswalks provided. Especially when traffic is heavy, motorists who choose to not stop at the stop bar get trapped in the middle of the intersection as the light cycles, and block crosswalks when pedestrians have the walk signal.
7. At unsignalized intersections, crosswalks are missing across most side streets. Vehicles roll through the stop bar, which cause visibility issues for people walking and biking on the sidewalk. Further, many of the side street approaches are angled; this leads to line of sight issues for all users.
8. There is an incredible amount of commercial driveways, which causes (repeated) dangerous and unpredictable interactions between motorists and people on sidewalks. These need to be consolidated.
9. From the Dupont Road intersection to the west, there is noticeably less commercial activity and more space for a potential widening of the sidewalk to become a multi-use path. At Long Branch Creek, the cross-section changes to a divided highway without sidewalks and a speed limit increase to 55 mph. There is a distinct lack of speed limit signs along the entire corridor.
10. Signalized intersections are set farther apart the further west one travels. For example, there is not a marked crossing between Dobbin Road and Savage Road, which is over 2,850'. This lack of infrastructure leads to people needing to cross mid-block without any protection. People walk across and along the

TWLTL, utilizing it as a refuge. Marked, signed and signaled mid-block crossings are needed.

11. There is a lack of signage to notify people of entranceways to the Maryville Bikeway and West Ashley Greenway, and to route them to these facilities along Highway 17. There is also a lack of pedestrian-scale lighting for these spaces.

Count Data

The goal of conducting bike/ped counts is to track volume and origin-destination data for vulnerable road user trips in the area, so we could better understand demand and optimum location of safe multi-modal infrastructure improvements. Below are the results of our bike/ped counts.

*Note regarding chart sections: The Overall Count By Mode and Origin-Destination numbers do not always tally to be the same, due to individual trip characteristics. Some observed trips that do not align with movement through (and beyond) an intersection are tallied in the Overall Count By Mode section, but not necessarily in the Origin-Destination section. An example of this is if a pedestrian got off the bus on Highway 17 (beyond an intersection we were observing) and continued their trip on foot, away from that intersection; since they did not begin their bike/ped trip on one part of the intersection and continue through, they are only represented in the Overall Count By Mode. This discrepancy does not indicate faulty data.*

<b>AUGUST 20, 2022 Highway 17/Avondale 12:20-2:20 pm</b>	<b>Conditions: Partly Cloudy, Hot, 84°</b>
<b>Overall Count By Mode</b>	
Bicyclists	11
Pedestrians	35 (of these: 2 babies in strollers)
<b>TOTAL</b>	46
<b>Origin-Destination</b>	
<b>Avondale to east 17</b>	6
<b>Avondale to west 17</b>	2
<b>East 17 to west 17</b>	16

<b>AUGUST 20, 2022 Highway 17/Avondale 12:20-2:20 pm</b>	<b>Conditions: Partly Cloudy, Hot, 84°</b>
<b>East 17 to Avondale</b>	4
<b>West 17 to Avondale</b>	1
<b>West 17 to east 17</b>	16
<b>West 17 to shop at south side of intersection</b>	1

*Notes: 1 bicyclist and 1 pedestrian crossed over Highway 17 to continue straight*

<b>AUGUST 20, 2022 Highway 17/Magnolia 12:20-2:20 pm</b>	<b>Conditions: Partly Cloudy, Hot, 84°</b>
<b>Overall Count By Mode</b>	
Bicyclists	3
Pedestrians	30
<b>TOTAL</b>	33
<b>Origin-Destination</b>	
<b>N Magnolia to east 17</b>	6
<b>N Magnolia to S Magnolia (driveway)</b>	9
<b>N Magnolia to west 17</b>	0
<b>East 17 to S Magnolia (driveway)</b>	1
<b>East 17 to west 17</b>	1
<b>East 17 to N Magnolia</b>	4
<b>S Magnolia (driveway) to west 17</b>	1
<b>S Magnolia (driveway) to N Magnolia</b>	10
<b>S Magnolia (driveway) to east 17</b>	0
<b>West 17 to N Magnolia</b>	0
<b>West 17 to east 17</b>	0

<b>AUGUST 20, 2022</b> Highway 17/Magnolia 12:20-2:20 pm	<b>Conditions: Partly Cloudy, Hot, 84°</b>
West 17 to S Magnolia (driveway)	2

<b>AUGUST 20, 2022</b> Bikeway/Wappoo 12:15-2 pm	<b>Conditions: Partly Cloudy, Hot, 84°</b>
<b>Overall Count By Mode</b>	
Bicyclists	5
Pedestrians	11
<b>TOTAL</b>	16
<b>Origin-Destination</b>	
N Wappoo to Bikeway	5
S Wappoo to Bikeway	0
Bikeway to N Wappoo	6
Bikeway straight over Wappoo	2
Bikeway to S Wappoo	3

<b>AUGUST 24, 2022</b> Highway 17/Avondale 5:30-7:30 pm	<b>Conditions: Cloudy, Muggy</b>
<b>Overall Count By Mode</b>	
Bicyclists	11
Pedestrians	88 (of these: 2 babies in strollers)
<b>TOTAL</b>	99
<b>Origin-Destination</b>	
Avondale to east 17	6
Avondale to Nicholson	3
Avondale to west 17	9

<b>AUGUST 24, 2022 Highway 17/Avondale 5:30-7:30 pm</b>	<b>Conditions: Cloudy, Muggy</b>
<b>East 17 to Nicholson</b>	0
<b>East 17 to west 17</b>	5
<b>East 17 to Avondale</b>	3
<b>Nicholson to west 17</b>	29
<b>Nicholson to Avondale</b>	4
<b>Nicholson to east 17</b>	4
<b>West 17 to Avondale</b>	9
<b>West 17 to east 17</b>	8
<b>West 17 to Nicholson</b>	20

*Notes: Lots of (yoga class) pedestrians, saw a bicyclist cut across 17 30 yards east of crosswalk from Nicholson*

<b>AUGUST 24, 2022 Highway 17/Magnolia 5:15-7:15 pm</b>	<b>Conditions: Cloudy</b>
<b>Overall Count By Mode</b>	
Bicyclists	1
Pedestrians	70
<b>TOTAL</b>	71
<b>Origin-Destination</b>	
Movement counts completed incorrectly	

*Notes: Mellow Mushroom closed for renovation, pedestrians only crossed in the crosswalk or across Magnolia*

<b>AUGUST 24, 2022</b> <b>Bikeway/Wappoo</b> <b>5:30-7:30 pm</b>	<b>Conditions: Overcast, Muggy, 84°</b>
<b>Overall Count By Mode</b>	
Bicyclists	6 (of these: 1 toddler on bike)
Pedestrians	7 (of these: 1 baby in stroller)
<b>TOTAL</b>	13
<b>Origin-Destination</b>	
<b>N Wappoo to Bikeway</b>	3
<b>S Wappoo to Bikeway</b>	3
<b>Bikeway to N Wappoo</b>	1
<b>Bikeway straight over Wappoo</b>	0
<b>Bikeway to S Wappoo</b>	0

Notes: (1) Saw a mom pushing a stroller with a toddler on a bike — she parked in vacant lot at Wappoo to use Bikeway. Lives on Melrose (down Sav Hwy) and drives down weekly to use Bikeway with kids. (2) Several bike/peds left path to cut through buildings, traveled through Title Loan parking lot and returned to path. (3) 6 of the bike/ped trips turned around on the Bikeway — did not go on roads.

<b>SEPTEMBER 7, 2022</b> <b>Highway 17/Avondale</b> <b>7-9 am</b>	<b>Conditions: Humid, Partial Sun</b>
<b>Overall Count By Mode</b>	
Bicyclists	12
Pedestrians	41 (of these: 4 students walking to school)
<b>TOTAL</b>	53
<b>Origin-Destination</b>	
<b>Avondale to east 17</b>	12
<b>Avondale to west 17</b>	0
<b>East 17 to west 17</b>	9

<b>SEPTEMBER 7, 2022 Highway 17/Avondale 7-9 am</b>	<b>Conditions: Humid, Partial Sun</b>
<b>East 17 to Avondale</b>	14
<b>West 17 to Avondale</b>	3
<b>West 17 to east 17</b>	7

<b>SEPTEMBER 7, 2022 Highway 17/Magnolia 7-9 am</b>	<b>Conditions: Humid, Partial Sun</b>
<b>Overall Count By Mode</b>	
Bicyclists	7
Pedestrians	61 (of these: 1 student walking to school, 3 babies in strollers, 1 skater)
<b>TOTAL</b>	68
<b>Origin-Destination</b>	
<b>N Magnolia to east 17</b>	4
<b>N Magnolia to S Magnolia (driveway)</b>	13
<b>N Magnolia to west 17</b>	2
<b>East 17 to S Magnolia (driveway)</b>	0
<b>East 17 to west 17</b>	1
<b>East 17 to N Magnolia</b>	13
<b>S Magnolia (driveway) to west 17</b>	6
<b>S Magnolia (driveway) to N Magnolia</b>	8
<b>S Magnolia (driveway) to east 17</b>	5
<b>West 17 to N Magnolia</b>	0
<b>West 17 to east 17</b>	14
<b>West 17 to S Magnolia (driveway)</b>	1

*Notes: mostly people going to Gerald's, getting coffee, going to yoga/gym, cutting through parking lot between Roost + Gene's*

## Summary

We spent 15.75 hours on site observing vulnerable road user demand and tracking travel patterns for the Highway 17 corridor at Avondale Avenue and Magnolia Road, as well as the Maryville Bikeway at Wappoo Road. It is abundantly clear that there is a very high volume of existing bicycle, pedestrian and transit trips throughout the area, and promise for many more once the multiple aforementioned projects are realized.

It is worth noting these counts were conducted in August and September. Despite the heat, on average, we documented: 33 people per hour at Highway 17/Avondale, 28.7 people per hour at Highway 17/Magnolia, and 7.7 people per hour at Bikeway/Wappoo. Vulnerable road users are utilizing all segments of the corridor, regardless of weather conditions and time of day; of note, with 99 vulnerable road users documented, activity was the highest at Highway 17/Avondale from 5:30-7:30 pm.

Despite the Highway 17 corridor being engineered to prioritize the flow of motor vehicles, it is a critical link between numerous neighborhoods (which pre-date the highway) and employment, schools, grocery stores, retail, healthcare, houses of worship, green- and bluespaces, and more. It's the primary artery for the City of Charleston's largest residential area, and yet, has a proven track record of hostility toward vulnerable road users. As one of the standout high-crash roadways in South Carolina, it is critical for Highway 17, particularly its intersections, to be retrofitted using complete streets principles. Safely routing people from the northern side of 17 to the West Ashley Greenway on the southern side is of paramount importance, as that is a far more comfortable and enjoyable east-west route for people on bikes and foot.

That said, with countless destinations fronting the corridor, including transit stops, the bicycle and pedestrian experience needs to be enhanced. While a separated multi-use path is needed, we recognize utility and right-of-way impacts make the reality of that a long-term project. In the interim, we would like to see:

- a continual, buffered sidewalk that is accessible (not broken) and clear of overgrowth and debris;
- complete intersections with all four crosswalk legs, leading pedestrian intervals that resolve conflicts with turning motor vehicles, and high-visibility pavement markings;
- pedestrian-scale lighting;

- curb extensions in commercial zones;
- adequate daylighting to address line-of-sight issues;
- landscaped medians in place of the TWLTL;
- mid-block crossings with pedestrian refuges in high volume crossing locations;
- uniformly-upgraded transit stops for safety and accessibility, including shelters, benches, bike racks, trash cans, lighting and signage;
- street trees for shade and protection;
- lowered speed limit for the entire corridor;
- consolidation of commercial driveways for the entire corridor.

## Gallery





































