

East Main Street - Salem

July 22, 2021



East Main Street, facing west from Longwood Park. Red stars indicate counter locations and red lines indicate bike count locations.

The Virginia Department of Transportation launched a statewide bike/ped count program in the fall of 2020 and provided two infrared Eco-Vision MultiModal EcoCounters, some accessories, training, and data management to RVARC. In July 2019, Virginia Tech professor Dr. Steve Hankey partnered with RVARC to install four EcoCounters. These generate reference counts to calculate average annual daily traffic from temporary count sites.

Pedestrian and bicycle activity was assessed on Main Street near McCauley Drive. Main Street, part of U.S. 460, is a major east-west connector and serves many destinations. The Average Annual Daily Traffic is 13,000 vehicles. Pedestrian generators include stops for bus routes #91/#92, which are among the highest ridership routes in the Valley Metro system, Longwood Park, Roanoke College, and Downtown Salem. A recently completed streetscape improvement added bike lanes and sidewalks.

RVARC staff installed two Eco-Vision counters with pneumatic tubes to count bicyclists in the bike lanes and the infrared sensors directed across the sidewalk to capture pedestrians. One was on the north side of Main Street east of Craig Avenue and the adjacent Longwood Park entrance and

the other was on the south side of Main Street east of McCauley Drive. The north counter was in place between April 17, 2021 and June 3, 2021. The south counter was in place between May 5, 2021, and June 3, 2021. Unfortunately, very low bicycle counts on the north side suggests technical issues and so this is not reported.

The available reference counters for pedestrian activity are 10th Street, Campbell Avenue, Jefferson Street, and Cove Road. 10th Street and Campbell Avenue reference counters have data for a full year but Jefferson Street and Cove Road counters have nine months of data. The available reference counters for bicycle activity are on the Memorial Avenue bike lanes.

Day-of-year factors were determined for each reference counter by dividing the day’s count by the average of 365 consecutive days of counts for that counter (or the number of days available). The day-of-year factors for all four counters were averaged to generate one day-of-year factor. The same process was used for the two Memorial Avenue bike lanes. Each day’s counts on each of the temporary counters were divided by the pedestrian or bicycle day-of-year factor for the corresponding date to create adjusted counts. The adjusted counts were averaged to calculate the annual average daily pedestrian or bicycle traffic at each counter location.

Average Annual Daily Traffic

The average annual daily pedestrian traffic was higher on the south than the north side of the street (Table 1). On the north side, pedestrian traffic was 72% eastbound (Figure 1). There was not a directional split in pedestrian travel on the south side (Figure 1). Bicycle traffic was 90% in the direction of travel (eastbound on the south side, Figure 2).

Pedestrian activity on the north side peaked on Tuesday rose again on the weekend while pedestrian and bicycle activity on the south side peaked on Thursday and declined steadily through the weekend (Figure 3).

Pedestrian traffic on the north side was more active in the afternoon, with a high peak at 1:00 PM (Figure 4). Pedestrian and bicycle traffic on the south side was more active in the morning from 7:00 AM – 9:00 AM and in the afternoon and evening (Figure 4).

Table 1. Average Annual Daily Pedestrian Traffic (AADT)

Mode	Side	Average Raw Counts	AADT
Pedestrian	North	54.3*	45.3
Pedestrian	South	22.7	19.3
Bicycle	North	Low**	
Bicycle	South	36.4	32.4

*Two abnormally high count days (May 20 and 21) were omitted from AADT calculation for the north side.

**Very low counts suggest technical issues and were not used in the analysis.

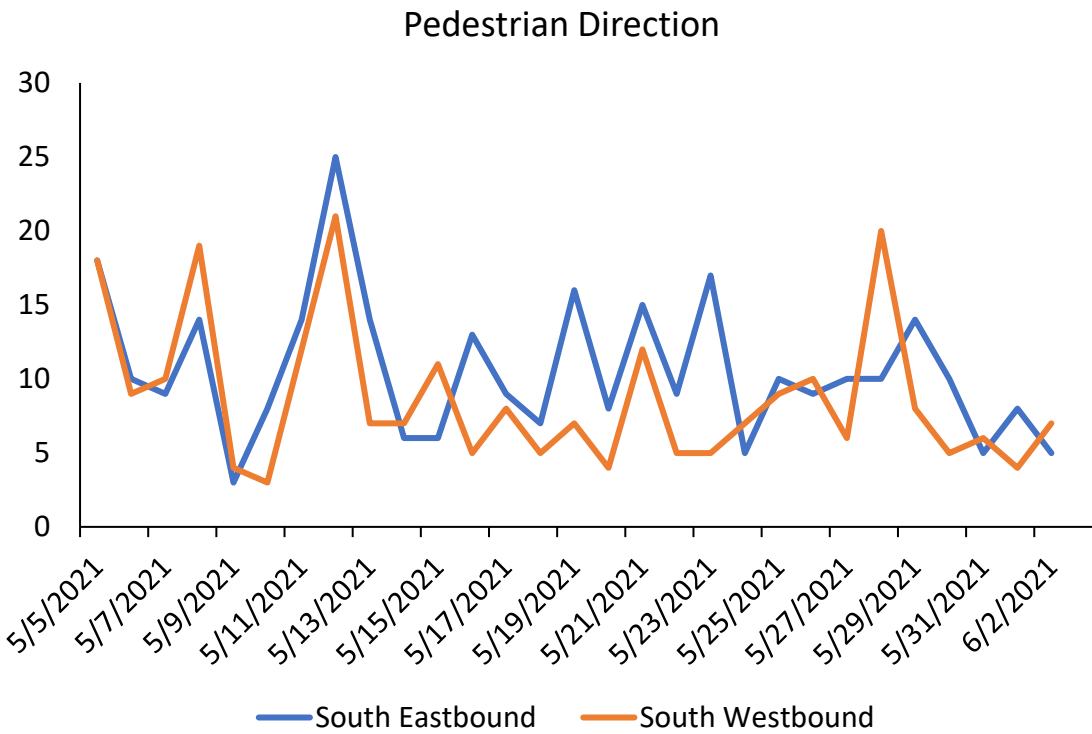
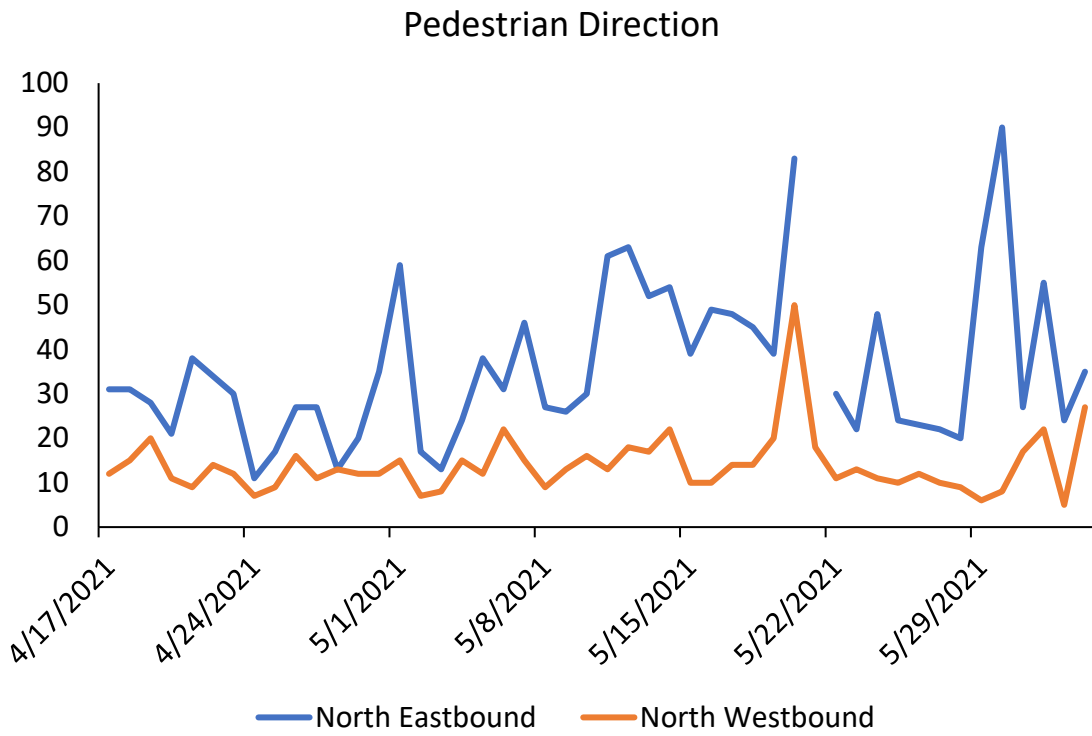


Figure 1. Directional split of pedestrian traffic

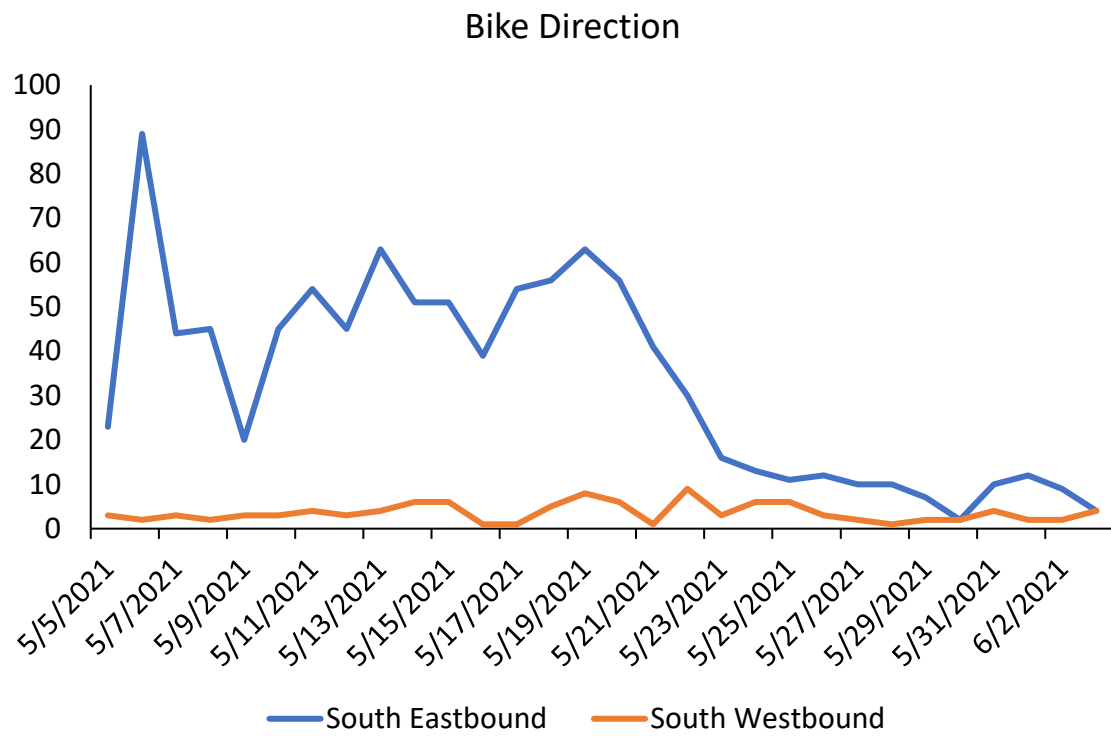


Figure 2. Directional split of bicycle traffic

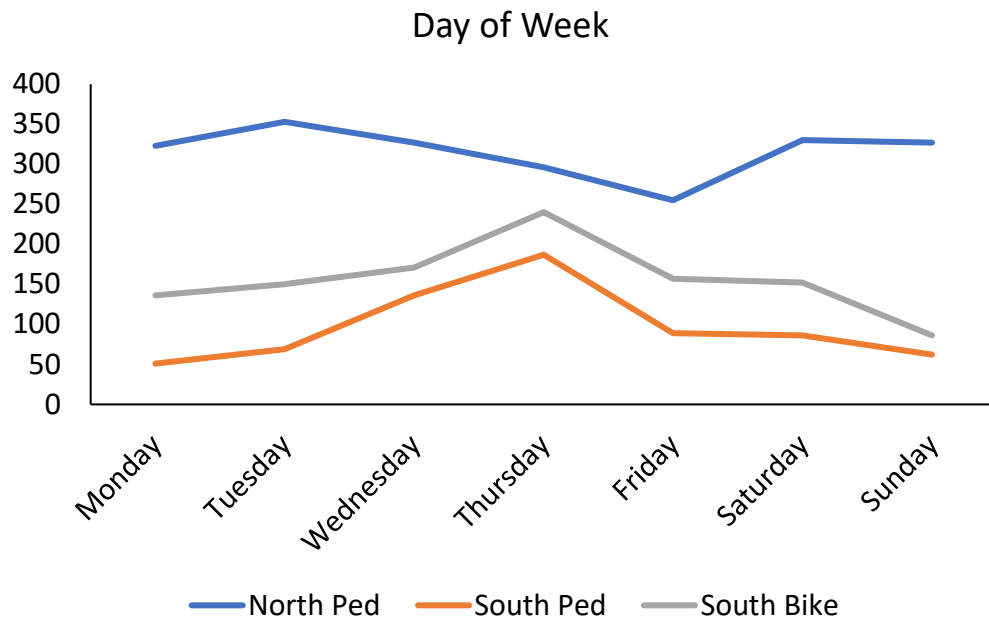


Figure 4. Day of Week

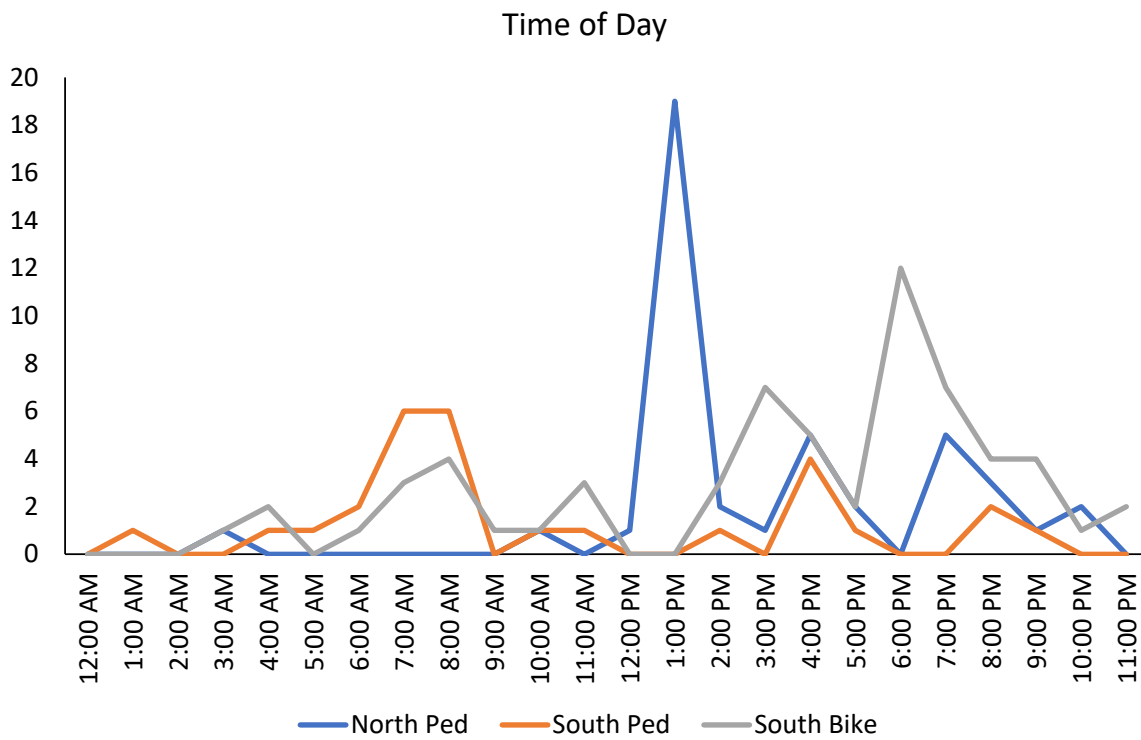


Figure 3. Time of Day