

# COLUMBIA WALK BIKE CATALYST PROJECTS TRAFFIC STUDY SUMMARY Columbia, South Carolina

Prepared for  
Central Midlands Council of Governments and City of Columbia  
  
In association  
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A traffic study was conducted for three of the catalyst projects proposed in this Walk Bike plan:

- Laurel Street (S- 337) – Bull Street to Harden Street – This proposed project would change the street from four vehicular travel lanes with intermittent on-street parallel parking on the north side of the street to three vehicular travel lanes with one-way cycle tracks on each side of the street.
- Sumter Street (S-177 ) – Elmwood Avenue to Taylor Street – This proposed project would change the street from five vehicular travel lanes with on-street parallel parking on both sides to three travel lanes with parallel parking and one-way cycle tracks on both sides.
- Farrow Road (S-555 ) – Columbia College Drive to Fontaine Road/Wilkes Road – This proposed project would change the street from five vehicular travel lanes to three travels lane with one-way cycle tracks on each side.

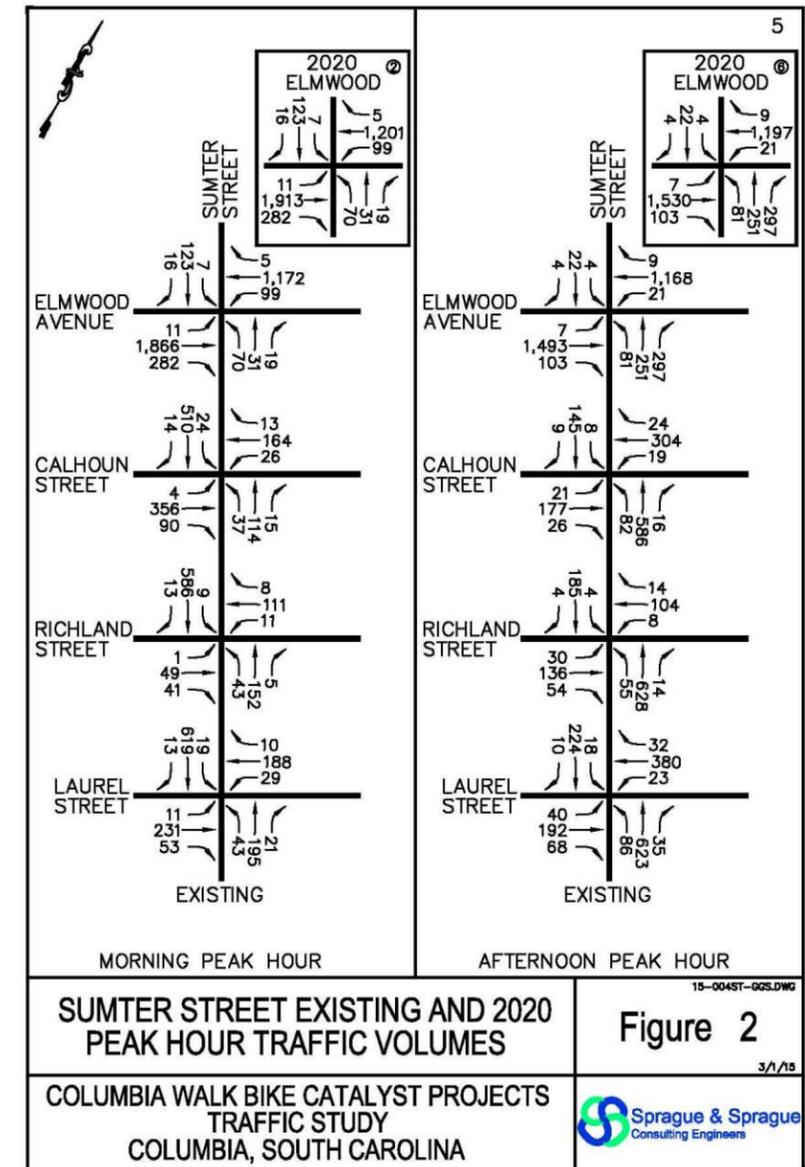
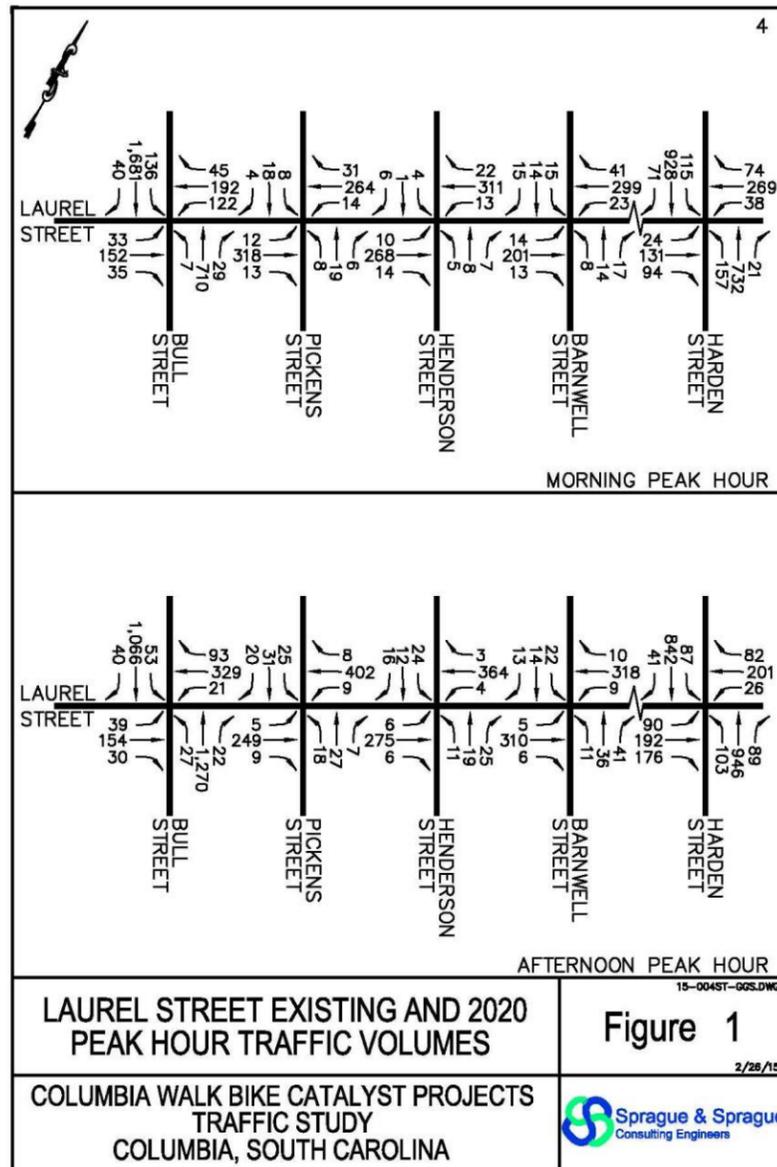
A separate report contains the results of technical analyses and accompanying appendices. The purpose of the study was to examine the operations of the signalized intersections in the segments described above with and without the proposed changes to vehicular travel lanes. This information will be needed by the City and the South Carolina Department of Transportation (SCDOT). SCDOT approvals will be necessary because all of the segments described above are maintained by SCDOT.

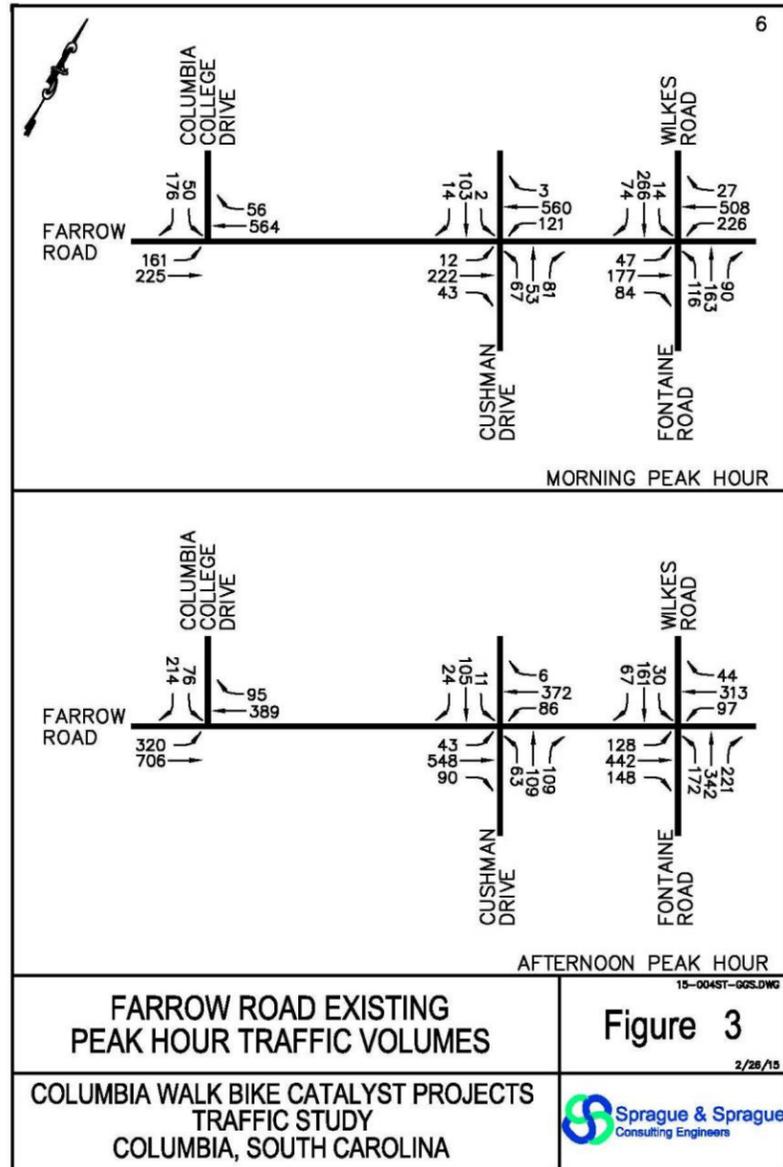
The study was conducted for morning and afternoon peak hours of adjacent street traffic with a horizon year of 2020. The study addressed capacity analyses and turn lane storage needs at the study intersections. Because the projects are still in the conceptual design phase, the study did not address operational details in the corridors such as parking locations, accommodation of transit vehicles, and other details which will be addressed in project design.

Turning movement counts were conducted at the study intersections in February, 2015 during the time periods of 7:00 – 9:00 a.m. and 4:00 – 6:00 p.m. The peak hours were identified, and the existing morning and afternoon peak hour volumes are shown in Figure 1 for Laurel Street, in Figure 2 for Sumter Street, and in Figure 3 for Farrow Road

The analyses conducted in this traffic study indicate that:

- All intersections in the affected segments currently operate acceptably and will continue to do so with the proposed geometries. The affect on one movement should, however, be noted. The elimination of the northbound right turn lane on Sumter at Elmwood will change the LOS of the northbound through/right from D to F. **A change in timing** can change the LOS for that movement back to LOS D. Such a change could have an effect on progressive signal timing on Elmwood.
- The required turn lane lengths on Farrow Road can be accommodated with minor restriping at most.
- The required turn lane lengths on Laurel Street can be accommodated with the restriping of the street. Because stop bar to stop bar distances are only just over 400 feet, however, if the SCDOT minimum of 150 feet of exclusive left turn lane is used for every left turn lane, there will be a short transition between the two lanes, and there will be no center turn storage for mid-block turns. A detailed review of the center turn lane striping with SCDOT and the City of Columbia should be a first step in design.
- Sumter is proposed as a three-lane street with landscaping including center medians. However, once the through lanes are reduced to one in each direction, some left turn queues are projected to increase beyond the storage currently provided. A detailed review of the center turn lane striping with SCDOT and the City of Columbia should be a first step in design and may reveal few opportunities for landscaped center medians.
- Detailed pavement marking plans showing the transitions into and out of the proposed cross sections on either end of the affected segments will be needed. If vehicular signal heads must be shifted to accommodate the new cross sections, revised signal plans may also be needed.

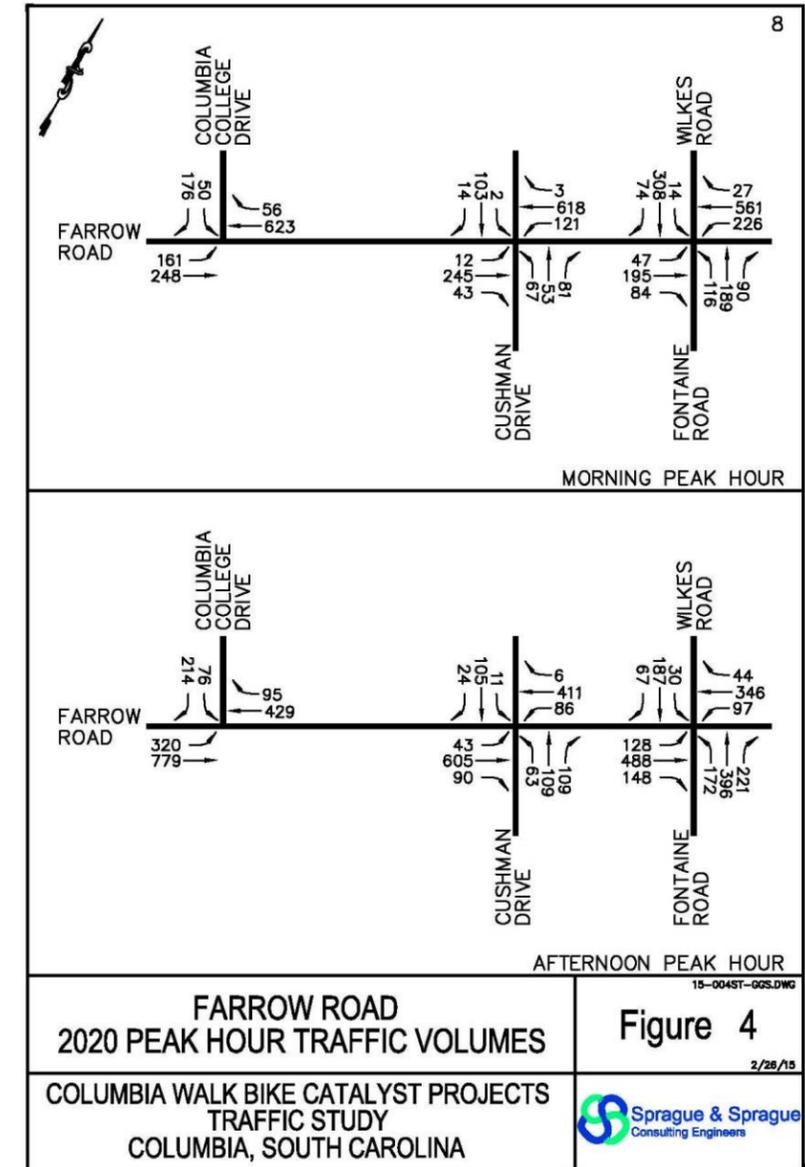




FARROW ROAD EXISTING PEAK HOUR TRAFFIC VOLUMES

Figure 3

COLUMBIA WALK BIKE CATALYST PROJECTS TRAFFIC STUDY COLUMBIA, SOUTH CAROLINA



FARROW ROAD 2020 PEAK HOUR TRAFFIC VOLUMES

Figure 4

COLUMBIA WALK BIKE CATALYST PROJECTS TRAFFIC STUDY COLUMBIA, SOUTH CAROLINA

