



To: Harry Lesesne, Charleston Parks Conservancy

From: Jennifer Bihl, PE, PTOE

Date: August 13, 2015

Re: Rutledge Ave. at Grove St. Intersection Review – Executive Summary

This memo provides a short summary of the intersection review for Rutledge Ave. at Grove St. as it relates to the proposed Hampton Park multi-use community center. The planned access for the site is via Grove St. prior to the dog park area as shown on the attached plan.

We collected existing conditions data at the intersection since the July 2015 City Council meeting. Due to the summer timeframe, these counts were compared to historic counts at nearby intersection of Rutledge Ave. at Moultrie St. to determine if a seasonal adjustment was needed. Traffic volumes were determined to be comparable so no adjustments were applied to the collected data.

We also performed site observations on multiple days at multiple times of day including the morning of "The Charleston Trio" High School Baseball Showcase at the Citadel baseball practice facility (approximately 50 vehicles were parked in the adjacent parking area). No significant issues were observed regarding vehicle queuing and intersection operations. It was observed that due to the geometric configuration of the intersection, it is sometimes challenging for northbound left-turning vehicles to see the opposing southbound through vehicles due to blocking of the line of sight by the southbound left-turning vehicles. This only occurs when there are multiple southbound vehicles turning from Rutledge Ave. to eastbound Grove St. This did not appear to significantly affect operations at the intersection.

Using industry standard traffic analyses procedures, the *Highway Capacity Manual 2010* methodologies, it was found that the intersection is operating at level of service B during the weekday morning and evening peak hour conditions.

For the 2020 future conditions review, PM peak hour traffic was used to represent a worst-case scenario for the intersection. Traffic was grown to 2020 conditions using a growth rate of 1% per year which reflects the historic growth in the area. In addition, trip generation from the community center was assigned to the intersection. To be conservative, two scenarios were analyzed:

- Scenario 1: 125 entering vehicles and 12 exiting vehicles during the peak hour
- Scenario 2: 12 entering vehicles and 125 exiting vehicles during the peak hour

Scenario 1 represents an event beginning during the peak hour, with the parking lot completely filled with entering vehicles during this time. It was also assumed that approximately 10% of the parking spaces would be vacated during the same period. Scenario 2 is the opposite, with an event ending during the peak hour and the parking lot emptying completely.



Traffic was then assigned to the network based on the expected distribution for an event as well as knowledge of the area. It was assumed that 75% of the traffic arrived or exited via Grove Street to King Street or via Rutledge Ave. southbound.

Based on the projected traffic volumes at the intersection, with no adjustments to the intersection geometry and timings, Rutledge Ave. at Grove St. is projected to continue to operate acceptably at level of service B with some minor increase in delay in the buildout conditions.

In summary, based on the projected traffic volumes, operations at the intersection would be comparable to the intersections operations today and it does not appear, based on the projected traffic conditions, that the traffic associated with the multi-use community center would significantly impact the intersection.



Washington Hall & Cafe at Hampton Park



Source: City of Charleston