

Five-Points Intersection Improvements

Review of Conceptual Designs

Crash Data: 2015 - 2017

- 60 crashes in three years time
- Zero Fatalities
- Nine Crashes resulted in 13 persons injured
- 51 crashes resulted in property damage

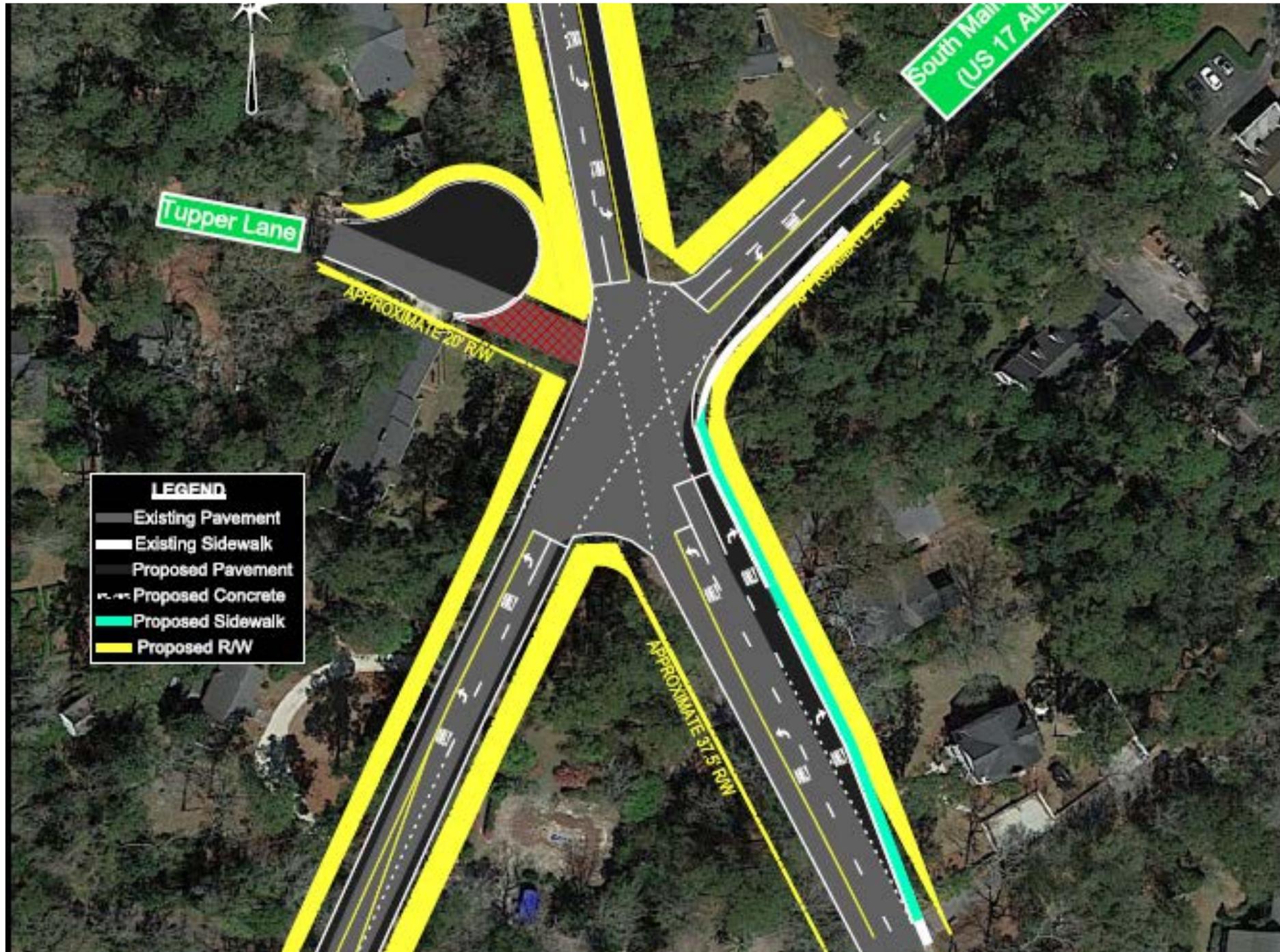
Manner of Collision									
	Head On	Rear End	Backed Into	Angle	Sideswipe Opposite Direction	Sideswipe Same Direction	Not Collision with Motor Vehicle	Rear to Rear	Total
# of vehicles	4	29	1	12	3	5	5	1	60
% of vehicles	7%	48%	2%	20%	5%	8%	8%	2%	100%

Previous Analysis

- One Lane Roundabout
 - Considered current traffic and post Berlin Myers Pkwy traffic
 - Did not provide enough congestion relief
 - SCDOT could not approve
 - Public Works Committee requested two lane roundabout be considered
- Turn Lanes
 - Provided adequate congestion relief
 - Does not improve safety element of intersection
 - Still remains option for consideration

Turn Lanes

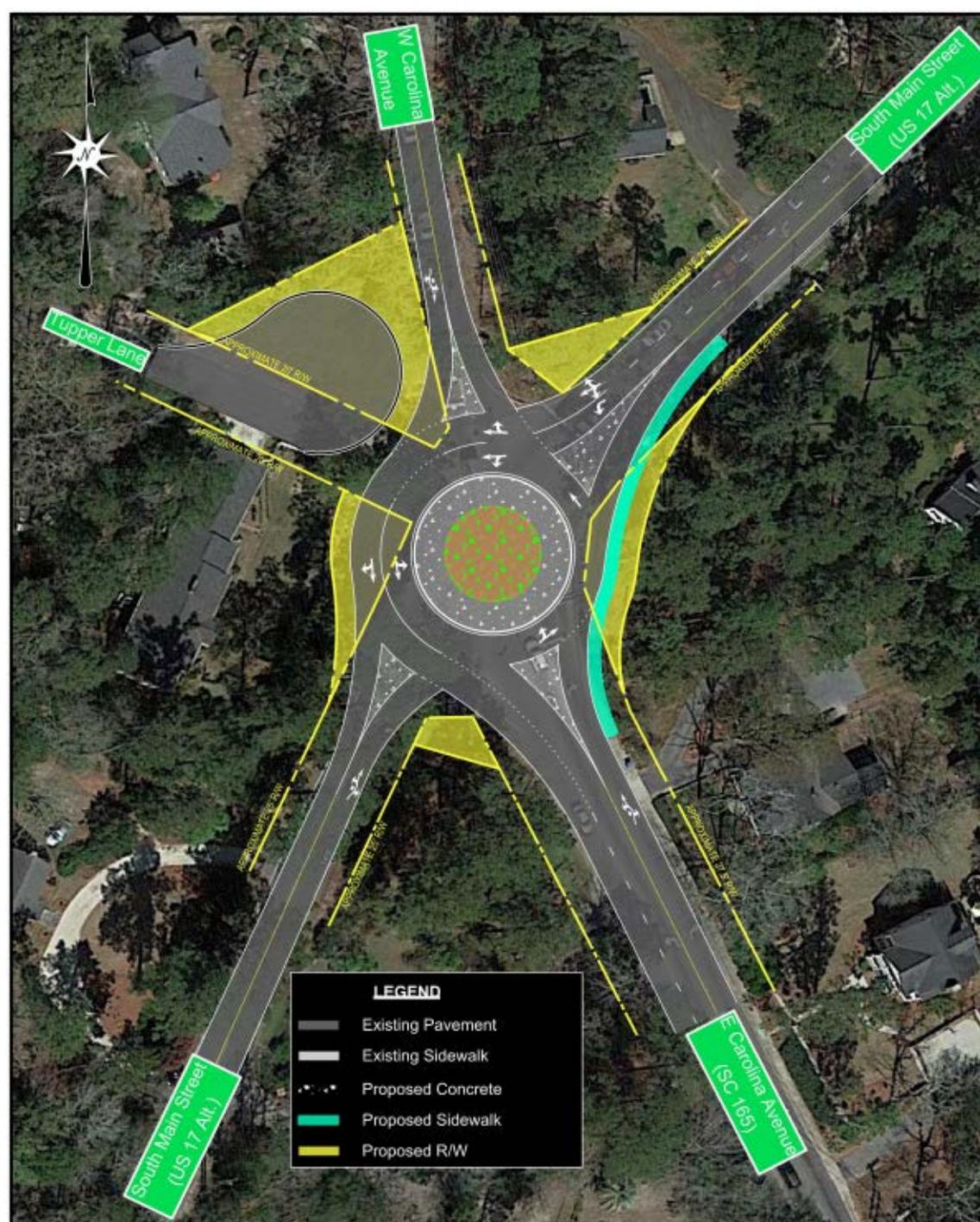
- Right Turn Lane on East Carolina Avenue
- Left Turn Lane on West Carolina Avenue
- Left Turn Lane, north-bound South Main Street
- Tupper Lane removed from intersection with cul-de-sac
- Widen shoulders to improve safety
- Construction Costs of \$690,000
- R/W Costs of \$140,000
- Total: \$830,000.00



Two Lane Roundabout

*Hybrid, One entry leg, One exit leg

- Roundabout designs are traffic calming, reduces crashes
- Improves Air Quality in immediate area due to continuously moving traffic
- No on-going traffic signal maintenance
- Tupper Lane removed from intersection with cul-de-sac
- Widen Shoulders to Improve Safety
- Construction Costs of \$740,000
- R/W costs of \$73,200
- Total Costs of \$813,200



Traffic Analysis Data

- Five Leg Intersection has the potential for 40 conflicts
- Four Leg roundabout reduces conflicts to 8 – improving safety by 500%

5 Points Intersection Analysis

Preliminary LOS/Delay Results

Table 1 - 2019 Existing Intersection Analysis Results (Without Berlin G. Myers Pkwy. Extension)

5 Points Intersection	Existing Conditions		Turn Lanes		1-Lane Roundabout (SIDRA, 4 Legs)		2-Lane Roundabout (SIDRA, 4 Legs)	
	AM	PM	AM	PM	AM	PM	AM	PM
Overall	<i>E/64.0</i>	<i>F/97.1</i>	<i>C/21.1</i>	<i>C/24.3</i>	<i>D/25.7</i>	<i>F/64.9</i>	<i>C/16.2</i>	<i>C/21.9</i>

NOTE: the Berlin G. Myers Extension Pkwy. project is projected to divert approximately 25% of traffic from US 17A to BGM.

Summary and Comparisons

Turn Lanes

- Minimal Improvement to Safety as 32 potential crash conflicts still exist
- Most Property Impacts, more parcels affected
- Cost of \$830,000
- Significant Traffic Improvement

Two Lane Roundabout

- Most Significant Improvement to Safety
- Property Impacts less significant than Turn Lanes, less parcels affected
- Cost of \$813,200
- Significant Traffic Improvement

Recommendations

- Traffic analysis results do not support one lane roundabout.
- Turn lanes offer congestion relief, but do not improve safety and have more property impacts
- Recommendation is to pursue four–leg, two-lane roundabout concept