



## MEMORANDUM

**TO:** Beaufort County Planning Commission  
**FROM:** Colin Kinton, PE, County Traffic & Transportation Engineer *SK*  
**DATE:** February, 25, 2011  
**RE:** Amendment to ZDSO

---

### **ZDSO Section – 106-2796 (Access Standards)**

**Summary of Proposed Amendment** - This amendment provides for an additional traffic signal to be installed on Buckwalter Parkway at Lake Point Drive, which was not previously planned for signalization. Access is further limited to un-signalized intersections by encouraging the use of roundabouts to provide the safest at grade intersection treatment.

**Justification** – The access management standards for Buckwalter and Bluffton Parkways recommend spacing between traffic signals at 2,000 ft and 2,640 ft, respectively. However, several full access intersections along the parkways may be possible at spacings considerably less than 2,000 ft, which would not be appropriate for traffic signal control and may also create an increased potential for accidents. In order to provide for the safest roadway without impeding access, standards have been revised to encourage the use of roundabouts that have significant safety benefits over un-signalized and signalized intersections. In addition, existing un-signalized median openings are subject to closure or conversion to roundabouts in order to prevent the severity of vehicle crashes.

The proposed change allows for traffic signals at pre-defined spacings that meet minimum traffic volume warrants. Other accesses on the Buckwalter and Bluffton Parkways would be provided either a roundabout or right-in/right-out control.

**Proposed Amendment** – Proposed deletions are shown ~~struck through~~ and additions are underlined.

**ARTICLE XIII. SUBDIVISION AND LAND DEVELOPMENT STANDARDS\***  
**DIVISION 2. STREET STANDARDS**

**Sec. 106-2796. Access.**

(h) *Access management standards for Buckwalter Parkway. **It is the clear and stated position that roundabouts are the preferred traffic control solution to at-grade intersections along Buckwalter Parkway. Roundabouts have been proven to reduce overall crash rates and injuries while providing for improved pedestrian access, calming of traffic and improving traffic flow.***<sup>1</sup> The following access management standards apply to all properties within Beaufort County's jurisdiction on Buckwalter Parkway between the intersection of US 278 and SC 46 (May River Road).

**(1) Roundabouts should be considered as a first priority during any intersection improvement, construction or access project. Design of roundabouts shall conform to the standards and guidance presented in the NCHRP Report 672 – Roundabouts: An Informational Guide, Second Edition.**

~~(2)~~ **Traffic signal spacing.** The recommended spacing between full signalized accesses **intersections** is 2,000 feet.

~~(3)~~ **Future traffic signal locations.** The specific signalized access locations shall correspond to the programmed signal locations provided in Figure 5 in Appendix L: Buckwalter Parkway Access Management Plan of the Beaufort County Comprehensive Plan. If a modification of the defined signal locations is desired to meet the demands of a specific development, the following conditions shall be satisfied:

a. **An analysis of the intersection shall be completed for a roundabout design first in order to determine suitability. Traffic signals shall not be permitted at accesses and intersections where roundabouts will suffice.** The modified location must meet the warrants for signalization with the proposed development as defined in the Manual on Uniform Traffic Control Devices (MUTCD) by the Federal Highway Administration (FHWA) with the analysis and specific application of traffic signal warrants to be approved by the Beaufort County traffic engineer.

b. The modified location must provide adequate spacing (as defined in the spacing standards indicated above) from existing traffic signals, programmed traffic signals, and future signalization of primary roadway intersections, including:

---

<sup>1</sup> National Cooperative Highway Research Program (NCHRP) Report 672 – Roundabouts: An Informational Guide, Second Edition, 2010

Buckwalter Parkway at US 278

Buckwalter Parkway at Cinema South (2,800 feet south of US 278)

Buckwalter Parkway at Sea Turtle South (2,050 feet south of Cinema South)

Buckwalter Parkway at Buckwalter Town Center South (2,550 feet south of Cinema South)

Buckwalter Parkway at Bluffton Parkway and the Townes of Buckwalter (this signal will be relocated once Phase 5b of the Bluffton Parkway is completed)

**Buckwalter Parkway at Lake Point Drive (1,550 feet South of Buckwalter Parkway at Bluffton Parkway)**

Buckwalter Parkway at Bluffton Parkway and Hampton Hall

Buckwalter Parkway at H.E. McCracken Circle and Old Bridge Drive

Buckwalter Parkway at SC 46 (May River Road)

- c. The future signalized intersection location shall not have an adverse impact on existing or future LOS based on comparative analysis of conditions with the recommended signal locations indicated in Appendix L: Buckwalter Parkway Access Management Plan of the Beaufort County Comprehensive Plan above. The developer shall be required to conduct LOS and signal system progression analysis to demonstrate compatibility of the proposed signal location with operation of the remainder of the signal system.

**d. Traffic signals shall be constructed using steel mast arms meeting the design details for mast arm construction in southern Beaufort County.**

~~(4)~~<sup>(3)</sup> *Driveway spacing.* Additional access points above the full accesses indicated in subsection 106-2796(h)(2)b. may be granted for right-in/right-out **only** ~~or other controlled movement~~ access with a minimum spacing of 500 feet. Single parcel access is strongly discouraged and connectivity to adjacent parcels should be provided. Joint access driveways are encouraged for small parcels to adhere to the 500-foot spacing. Driveways should be limited to the number needed to provide adequate access to a development. Factors such as alignment with opposing driveways and minimum spacing requirements will have a bearing on the location and number of driveways approved. For parcels/developments that have frontage on Buckwalter Parkway and have access to a signalized intersection location

recommended in the Buckwalter Parkway Access Management Plan, minimum spacing shall be 800 feet unless specified in Figure 5 of the Buckwalter Parkway Access Management Plan: **to ensure adequate separation from existing traffic signals, minimize conflicting turning movements and minimize negative impacts to the signalized intersections.**

**(5)(4)** *Driveway design.* Driveway width and turning radii shall conform to SCDOT's Access and Roadside Management Standards.

**(6)(5)** *Driveway linkages.* See subsection 106-2796(c).

**(7)(6)** *Deceleration lanes.* Deceleration lanes shall be required when the volume of traffic turning at a site is high enough in relation to the through traffic to constitute the potential for disruption as indicated in the traffic impact analysis.

**(8)(7)** *Retrofitting existing driveways.* As changes are made to previously developed property or to the roadway, driveways will be evaluated for the need to be relocated, consolidated, or eliminated if they do not meet the access management standards.

**(9)** **Median Openings. All unsignalized median openings are subject to closure by Beaufort County or conversion to a roundabout control in the future for safety purposes.**

(i) *Access management standards for Bluffton Parkway.* **It is the clear and stated position that roundabouts are the preferred traffic control solution to at-grade intersections along Bluffton Parkway. Roundabouts have been proven to reduce overall crash rates and injuries while providing for improved pedestrian access, calming of traffic and improving traffic flow.**<sup>2</sup> The following access management standards apply to all properties within Beaufort County's jurisdiction on Bluffton Parkway between the intersection of SC 170 and US 278.

**(1)** **Roundabouts should be considered as a first priority during any intersection improvement, construction or access project. Design of roundabouts shall conform to the standards and guidance presented in NCHRP Report 672 – Roundabouts: An Informational Guide, Second Edition.**

**(2)(1)** *Traffic signal spacing.* The recommended spacing between full signalized accesses **intersections** is 2,640 feet (one-half mile).

**(3)(2)** *Future traffic signal locations.* The specific signalized access locations shall correspond to the programmed signal locations provided in Figures 2-A and 2-B in Appendix M: Bluffton Parkway Access Management Plan of the Beaufort

---

<sup>2</sup> National Cooperative Highway Research Program (NCHRP) Report 672 – Roundabouts: An Informational Guide, Second Edition, 2010

County Comprehensive Plan. If a modification of the defined signal locations is desired to meet the demands of a specific development, the following conditions shall be satisfied:

a. **An analysis of the intersection shall be completed for a roundabout design first in order to determine suitability. Traffic signals shall not be permitted at accesses and intersections where roundabouts will suffice.** ~~The modified location must meet the warrants for signalization with the proposed development as defined in the Manual on Uniform Traffic Control Devices (MUTCD) by the Federal Highway Administration (FHWA) with the analysis and specific application of traffic signal warrants to be approved by the Beaufort County traffic engineer.~~

b. The modified location must provide adequate spacing (as defined in the spacing standards indicated above) from existing traffic signals, programmed traffic signals, and future signalization of primary roadway intersections, including:

Bluffton Parkway and SC 170

Bluffton Parkway and Lawton Station Access (1,750 feet east of SC 170)

Bluffton Parkway and Sandhill Tract (2,100 feet east of Lawton Station intersection)

Bluffton Parkway and Hampton Parkway (2,450 feet east of Sandhill Tract intersection)

Bluffton Parkway and Parcel 10B (2,550 feet east of Hampton Parkway)

Bluffton Parkway and Parcel 12A and 12B (2,600 feet east of Parcel 10B intersection)

Bluffton Parkway and Buckwalter Parkway and the Townes of Buckwalter (this signal will be relocated once Phase 5b of the Bluffton Parkway is completed)

Bluffton Parkway and Buckwalter Parkway and Hampton Hall

Bluffton Parkway and Buck Island Road

Bluffton Parkway and Simmonsville Road

~~Bluffton Parkway and SC 46 (roundabout)~~

Bluffton Parkway and Burnt Church Road

Bluffton Parkway and Malphrus Road

~~Bluffton Parkway and Buckingham Plantation Drive~~

- c. The future signalized intersection location shall not have an adverse impact on existing or future LOS based on comparative analysis of conditions with the recommended signal locations indicated in Appendix M: Bluffton Parkway Access Management Plan of the Beaufort County Comprehensive Plan above. The developer shall be required to conduct LOS and signal system progression analysis to demonstrate compatibility of the proposed signal location with operation of the remainder of the signal system.

**d. Traffic signals shall be constructed using steel mast arms meeting the design details for mast arm construction in southern Beaufort County.**

- (4)(3)** *Driveway spacing.* Additional access points above the full accesses indicated in subsection 106-2796(i)(2)b. may be granted for right-in/right-out **only** ~~or other controlled movement access~~ with a minimum spacing of 800 feet **unless specified in Figures 2-A and 2-B of the Bluffton Parkway Access Management Plan.** Single parcel access is strongly discouraged and connectivity to adjacent parcels should be provided. Joint access driveways are encouraged for small parcels to adhere to the 800-foot spacing. Driveways should be limited to the number needed to provide adequate access to a property. Factors such as alignment with opposing driveways and minimum spacing requirements will have a bearing on the location and number of driveways approved: **to ensure adequate separation from existing traffic signals minimize conflicting turning movements and minimize negative impacts to the signalized intersections.** ~~For parcels/developments that have frontage on Bluffton Parkway and have access to a signalized intersection location recommended in the Bluffton Parkway Access Management Plan, minimum spacing shall be 800 feet unless specified in Figures 2-A and 2-B of the Bluffton Parkway Access Management Plan.~~
- (5)(4)** *Driveway design.* Driveway width and turning radii shall conform to SCDOT's Access and Roadside Management Standards.
- (6)(5)** *Driveway linkages.* See subsection 106-2796(c).
- (7)(6)** *Deceleration lanes.* Deceleration lanes shall be required when the volume of traffic turning at a site is high enough in relation to the through traffic to constitute the potential for disruption as indicated in the traffic impact analysis.
- (8)(7)** *Retrofitting existing driveways.* As changes are made to previously developed property or to the roadway, driveways will be evaluated for the need to be

relocated, consolidated, or eliminated if they do not meet the access management standards.

- (9) Median openings: All unsignalized median openings are subject to closure by Beaufort County or conversion to a roundabout control in the future for safety purposes.**