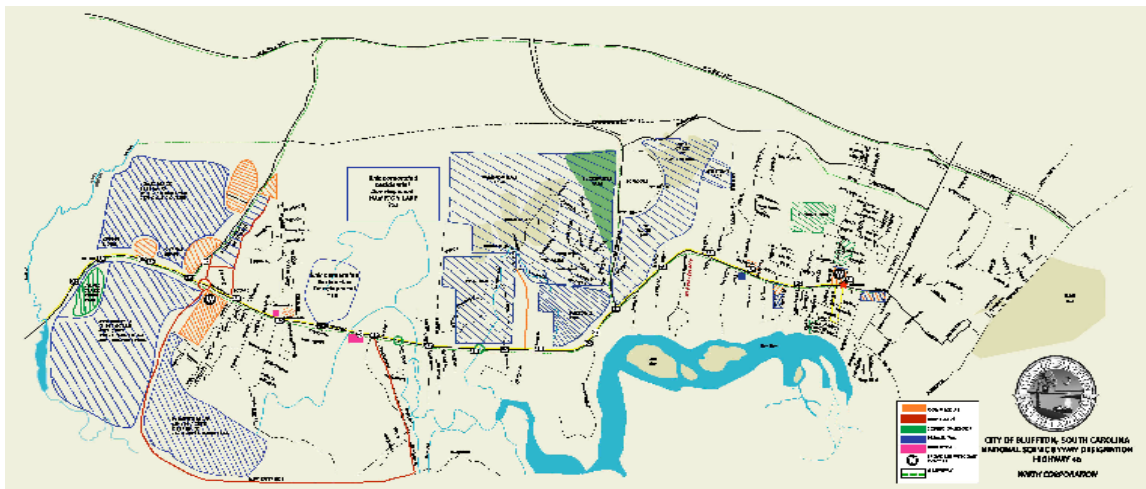


CHAPTER III
Situation Analysis
Overview of Existing Conditions

SC 46 National Scenic Byway corridor description:

SC 46 was designated a state scenic byway in 1987 by the South Carolina General Assembly. The state scenic route was from the Jasper County line at the New River to the intersection of SC 46 with US 278 in Bluffton. This application for National Scenic Byway designation of 10.5 miles of SC 46 incorporates all but one segment of the state scenic route as follows:



The proposed route starts at the county line and goes 10.5 miles west on SC 46.

The corridor that is being proposed as a National Scenic Byway follows the designated State Scenic Byway corridor from the Jasper County line to Bluffton's Old Town. Then, at the intersection of SC 46 with Calhoun Street the proposed National Scenic Byway will turn south to Bridge Street; and, thence continue one block east; and thence north on Boundary Street to the intersection of SC 46 with Boundary Street/Bruin.

The segment of the SC 46 state scenic byway from Boundary Street/Bruin Street in "Old Town" Bluffton to US 278 is not included in this application, as it is now not eligible for consideration under the National Scenic Byway because roadway is being constructed as a four lane highway and draws people away from the community. Instead, at the corner of SC 46 and Boundary Street, travelers will be directed to turn right (east) onto Bruin Street, ending at the intersection of Burnt Church Road.

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CURRENT ROADWAY CHARACTERISTICS:

Functional classification-

- SC 46 has a functional classification of a minor arterial as designated by SCDOT. The segment through “Old Town” Bluffton is classified as a (major collector). The roadway follows terrain that is both flat and rural, which is typical of the South Carolina coastal area.



Three views along SC 46 within the ten mile route.

Pavement-

- SC 46 is a two lane bituminous pavement roadway with driving lane widths of 11 feet along that segment from the Jasper County line to US 170, a distance of two miles.



Intersection of US 170 & SC 46

- The roadway then widens to 15 feet at the Town of Bluffton. The traveled width along the rural corridor is between 22 feet and 30 feet. That segment proposed as a National Scenic Byway along city streets through “Old Town” Bluffton (Calhoun and Bridge Street) will adhere to the Transportation Plan of the Old Town Master Plan.

Chapter III Situation Analysis

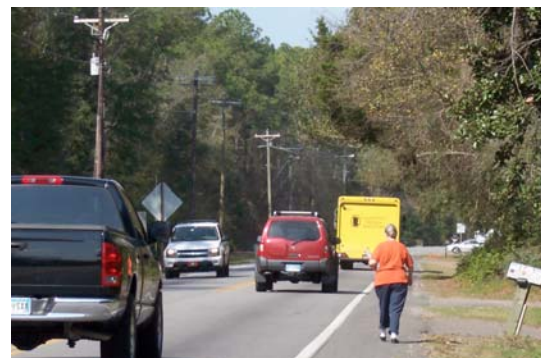


Intersection of SC 46 and Calhoun Street

Please note:

In the conceptual plans for the May River /Bruin Streetscape Project, travel lanes will be narrowed to 10 feet to calm traffic. Narrow road design, two-sided parallel parking, curb extensions and other measures will discourage truck and through traffic.

- There are no raised medians along the route; however, entrances to major developments are facilitated by deceleration right turn lanes.
- The roadway has 4 feet paved shoulders on each direction of travel. Beginning at the intersection of US 170 and SC 46, there are nonstandard bike routes on both sides which are being used by both bicyclists and pedestrians. A standard bike route is a minimum of five feet wide preferably with a buffer between bicyclists/pedestrians and motorists. The wide shoulders on SC 46 make the roadway safer for motorists and provide a place for experienced adult cyclists to ride if they must use SC 46. But due to the high speed and high volume of traffic, the Greater Bluffton Pathways, an advocacy group for safe bicycle routes in Bluffton, does not recommend this route for families or inexperienced riders.



Both bicyclists and pedestrians use the shoulder as a pathway.

Chapter III Situation Analysis



Just past the intersection of US 170 headed east.

Such bike routes are considered “shared” since there is no segregation between vehicular traffic and bicycle traffic within the paved 4 foot margin of the shoulder but do pose a safety issue.

- Pedestrian traffic is accommodated within the paved shoulders, which also function as a “shared bikeway”. This design creates potentially unsafe situations that contribute to head-on accidents as well pedestrian accidents. Also, this type of situation is typical when considering the “sense of space” between vehicles and the roadway’s environment as a factor in the qualitative analysis of the roadway’s level of service (LOS)*. Notice in the photograph below how the vehicle moves toward the center of SC 46 when pedestrians are in close proximity of the traveled width.

Safety Issue:
Motorists have a tendency to “hug” center lane when passing bicyclists or pedestrians walking on the shoulder of the road.



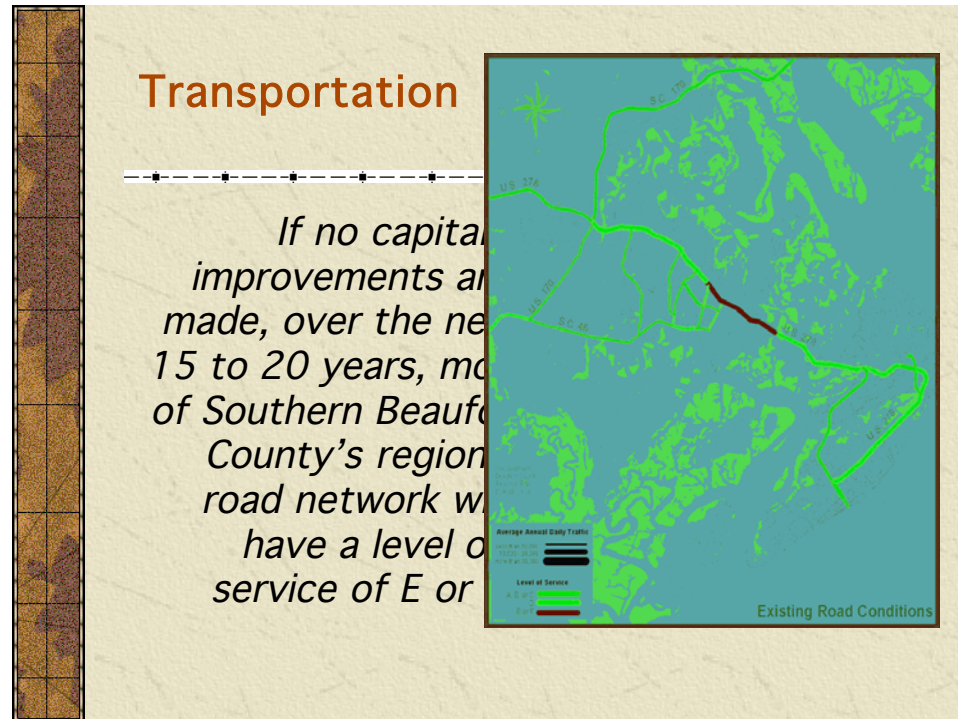
Corner of SC 46 & Gilbert Road at Pritchardville.

**Level of Service Standards (LOS) - considers factors in equations that measure traffic conditions such as speed and travel time, traffic volume, freedom to maneuver, traffic interruptions, comfort, convenience and safety. These rating can become the forecast for future roadway conditions, given the current roadway characteristics. LOS are rated A through F, best to worst, based on the models in the AASTHO Highway Capacity Manual (1985, revised 1994). Physical improvements to SC 46, such as the turnabout, signalized intersection, turn lanes etc will affect the LOS.*

To learn more information, visit the website <http://www.nap.edu/catalog/6340.html#toc>

Level of Service standards-

- SC 46 is currently operating at an acceptable Level of Service Standard (LOS) between "B" and "C" along the rural segment.



*Existing road conditions of SC 46 is currently an acceptable "B" and "C" level as noted in **green**.*

*Slide from Regional Planning Summit held 3/2/06**

Please note: Sections of SC 278 have already reached an "E and F" level of service (LOS) which is a very undesirable level, a level SC 46 should try to avoid.

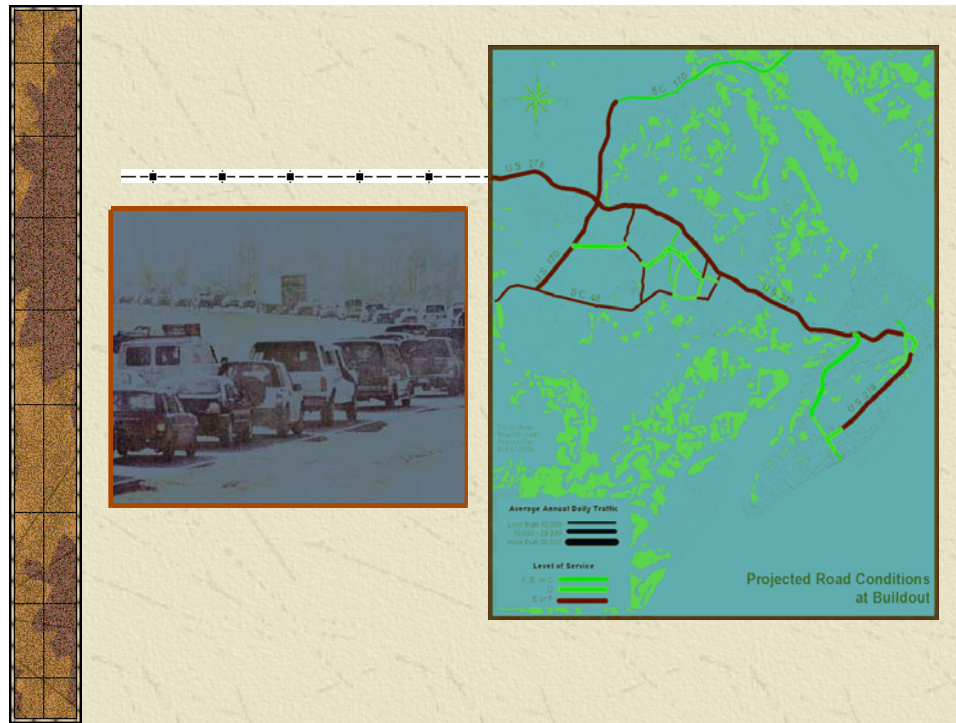
- Traffic Impact Analysis studies that are required by SCDOT and Beaufort County for new residential and commercial developments indicate that the LOS along SC46 will fall to "D" and "E". The LOS correlates to the proximity of other principal roadways, such as Buckwalter Parkway and Buck Island Road, as well as the mitigated roadway improvements, such as additional turn lanes. The LOS along the segment of SC 46 that is West of Bluffton is expected to reach an unacceptable level of "F" with the build-out of the these new developments by 2025.

**To view powerpoint presentation in its entirety, please visit:*

http://www.bcgov.net/Public_Info_Officer/2006_News/Regional%20Planning%20Summit%203-2-06.ppt

Chapter III Situation Analysis

PROJECTED ROAD CONDITIONS AT BUILDOUT



*Without extensive transportation improvements over the next 20 year, Hwy 170, Hwy 278 and SC 46 will all reach levels of service of "F".
Slide from Regional Planning Summit held 3/2/06*

Speed limits-

- The posted speed limits for the roadway ranges from 55 mph in the rural section of SC 46 and 30 mph in the Town of Bluffton.



Downtown 30 mph



Near Palmetto Bluff - 45 mph



Increases to 55 mph

The high volume of traffic, which is anticipated to increase significantly over the next few years, and the speed in which motorists are traveling have become two major concerns along SC 46.

Access Controls-

- Currently, there is only one signalized intersection along the rural segment of SC 46 located at the intersection of SC 46 with Buckwalter Parkway. The intersection of SC 46 and Boundary Street in "Old Town" Bluffton is a four-way stop.



Four-way stop at Boundary



Two views of traffic light at Buckwalter Parkway



- Access points along SC 46 are a combination of private driveways, town, county and state roads. There are numerous driveways from various land uses that access SC 46 that are not controlled by stop signs on the minor approaching roadways.

A few of the "hidden" driveways accessing SC 46



Accesses to SC 46 from permitted, private developments are however controlled by stop signs. All town, county and state county roads are controlled by stop signs on the minor approaching roadways. Ingress and egress points for new access nodes are addressed by the SCDOT.

Chapter III Situation Analysis

Fixed structures-

1. Bridge crossing New River
 - a. Bridge No. 074004600100
 - b. Milepost: .02
 - c. Length: 201 ft Width 44 ft
 - d. Status: Structurally Deficient
under construction
 - e. Open: No restrictions



Bridge over New River



*Bridge over abandoned railroad**

2. Bridge over abandoned Seaboard Coast Line Railroad
 - a. Bridge No. 074004600200
 - b. Milepost: 1.01
 - c. Length: 138 ft Width 44 ft
 - d. Status: Functionally obsolete
 - e. Open: No restrictions

**Note: Railroad track has been removed and it is in the process of being converted into a 3 ½ mile walking trail through the Rails to Trails Federal Program.*

3. Bridge over Stoney Creek
 - a. Bridge No. 074004600300
 - b. Milepost: 4.59
 - c. Length: 76 ft Width: 32 ft
 - d. Status: Structurally Deficient



Stoney Creek Bridge



Rose Dhu Bridge

4. Bridge over Rose Dhu

Information on bridge not available

Traffic Volumes-

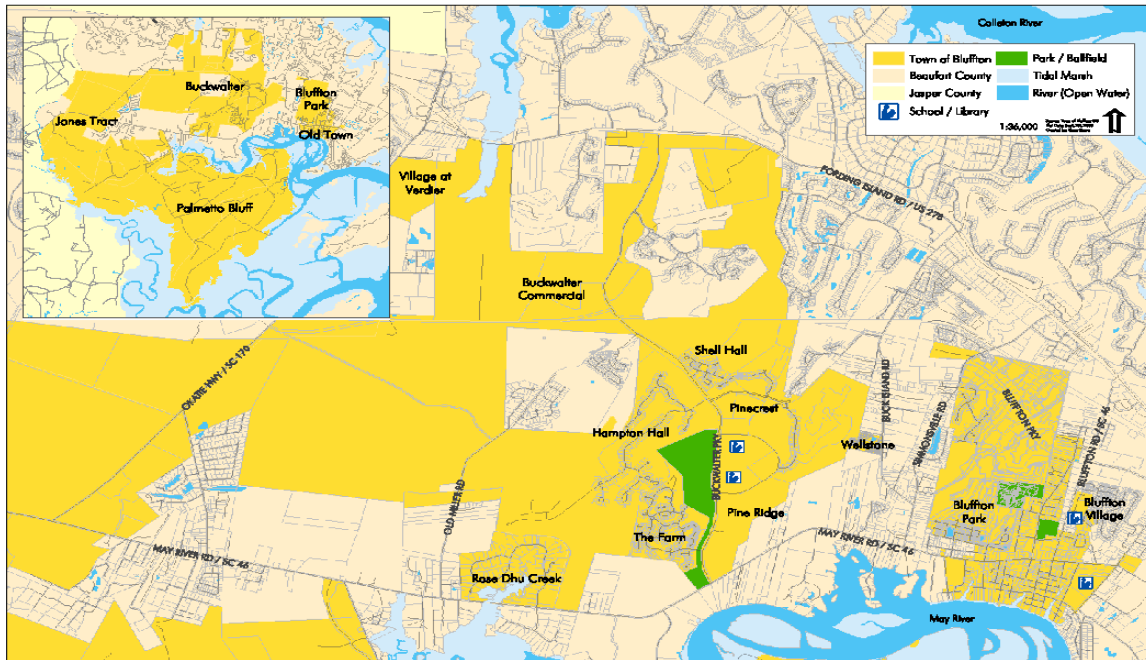
- SC 46 is a critical transportation network with traffic volumes resulting from two distinctly separate traffic generators in particular. One traffic generator is that SC 46 parallels US 278 as east-west alternate route from Savannah (via I-95 or SC 170) to Hilton Head Island and consequently has significant 'pass through' trips.
- The other consideration that generates vehicle trips along the corridor is that SC 46 must also service the transportation needs of recent high growth from mixed use developments in Southern Beaufort County, which also injects construction traffic on the roadway.
- The Town of Bluffton has expanded its corporate city limits from one square mile to approximately 54 square miles with a corresponding population increase of more than 3,000 and greater than 2,000 total housing units in the previous five years.
- A projected build out over the next 25 to 30 years could increase the total residential units to more than 20,000. For more information on Bluffton's sudden growth, read *Bluffton Annexation Study – The Town's Recent History of Annexation* at <http://www.townofbluffton.com/new/pdf/annex.pdf>.
- Although not all of the new development is adjacent to SC 46 or has ingress/egress on SC 46, the direct impact on the resulting traffic volume is being realized since it is the only east-west connector that access principal north-south roadways serving many of the larger new developments.
- The map on the following page depicts the build out of permitted developments along the SC 46 corridor. It is apparent that traffic generated by developments along the western and central segments of the roadway will have the greatest impact on future traffic volumes and the LOS.
- Trips that both originate from these developments and subsequently have a destination will peak in the AM and PM respectfully, thereby challenging the opportunity of those motorists who desire to travel the National Scenic Byway as well as the general citizenry.

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BUILD OUT OF PERMITTED DEVELOPMENT



TOWN OF BLUFFTON
Development Map



<http://www.townofbluffton.com/new/pdf/development%20map.pdf>

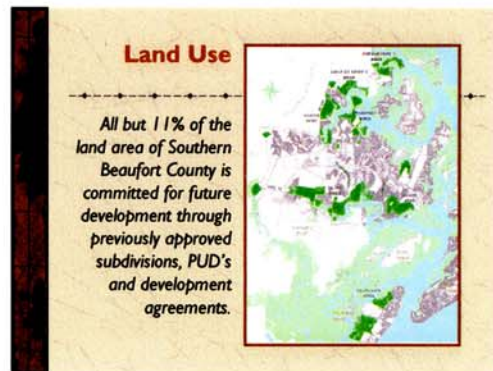
- The impact of new growth on SC 46 will generate traffic volumes beyond its design capability unless there is a concerted effort to both eliminate unnecessary trips and also mitigate those which are relevant to development. Traffic volumes must be contained in order to help ensure the preservation and furtherance of the quality of the public's experience with those intrinsic qualities along the SC 46 corridor.

Examples could include but should not be limited to:

- Completion of the Bluffton Parkway;
 - Widening of US 278;
 - Diligent traffic monitoring to preempt trends in the transportation network;
 - Dynamic partnerships that have the authority to coordinate planning efforts between county and state entities including schools;
 - Greater public emphasis on mass transit alternatives;
 - Strict reduction of the incongruent traffic mix between trucks, construction traffic and passenger vehicles;
- And completion of the proposed Greenways/bike paths.

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- And completion of the proposed Greenways/bikepaths.
- Annualized projections of traffic volumes along SC 46, without build-out, are expected to increase by at least 2.5% over background; however, given the rapid growth rate in Southern Beaufort County, the anticipated increase in annualized traffic is projected to increase to near 20,000 from the Pritchardville area to the vicinity of Buckwalter Parkway by 2025.
- A traffic study for the Jones and Buckwalter tracts completed in April 2005 by Thomas & Hutton Engineering concluded that greater than 74,000 total trips from the combined developments would be generated. Not all of the traffic volumes generated by these permitted developments would directly impact the SC 46 corridor, but it could be anticipated that as much as 25%, or a combined total of about 18,000 trips, would have directional traffic flows within the immediate study area.



- Traffic counts from 1993 to 1998 ranged between 7,800 and 7,900 average annual daily traffic (AADT). The most recent traffic volume data available counts is given in the chart below:

Average Annual Daily Traffic

Station	Route #	2000	2004	Location
153	S.C. 46	12,200	12,400	Jasper Co. Line TO S.C. 170
155	S.C. 46	7,900	8,500	S.C. 170 TO S-29 (Buck Island Rd)
157	S.C. 46	8,900	12,300	S-29 TO Rd-13 (Boundary St)
	S.C. 46		10,600	S-13 TO US 278
	S.C. 46		5,200	S-46 to S-163 (Burnt Church Rd)

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- There have been numerous accidents on SC 46 over the past few years. In the charts below, the number of crashes between 2001 and 2005 are noted as well as the types of crash, location, weather conditions and month those crashes occurred.

NUMBER OF CRASHES ON SC 46*
(from Jasper County Line to S-31 just inside Bluffton Town Limits)
Beaufort County
2001-2005

Year	type			TOTAL	PERSONS KILLED	PERSONS INJURED
	FATAL	INJURY	PROPERTY DAMAGE ONLY			
2001	2	13	37	52	2	17
2002	0	21	35	56	0	26
2003	1	18	49	68	1	30
2004	2	32	78	112	3	46
2005	1	29	52	82	1	40
TOTAL	6	113	251	370	7	159

TYPES OF CRASHES ON SC 46*
(from Jasper County Line to S-31 just inside Bluffton Town Limits)
2001-2005
Beaufort County

Manner of Collision	TYPE			TOTAL	PERSONS KILLED	PERSONS INJURED
	FATAL	INJURY	PROPERTY DAMAGE ONLY			
.	0	1	0	1	0	2
NOT COLLISION W/MVT	3	28	74	105	4	33
REAR END	1	34	96	131	1	44
HEAD-ON	2	6	10	18	2	17
REAR-TO-REAR	0	0	1	1	0	0
ANGLE	0	36	50	86	0	55
SIDESWIPE-SAME DIRECTION	0	5	8	13	0	5
SIDSWIPE-OPPOSITE DIRECTION	0	3	10	13	0	3
UNKNOWN	0	0	2	2	0	0
TOTAL	6	113	251	370	7	159

*Data provided by SC DOT July 17th, 2006

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Situation Analysis

LOCATION OF CRASHES ON SC 46*
(from Jasper County Line to S-31 just inside Bluffton Town Limits)
2001-2005
Beaufort County

Base Route	TYPE			TOTAL	PERSONS KILLED	PERSONS INJURED
	FATAL	INJURY	PROPERTY DAMAGE ONLY			
0720017	0	1	1	2	0	1
0730034	0	0	1	1	0	0
0730046	0	2	10	12	0	4
0730170	4	20	53	77	5	36
0740013	0	3	6	9	0	3
0740023	0	0	1	1	0	0
0740024	0	0	1	1	0	0
0740029	0	20	68	88	0	25
0740031	0	5	3	8	0	7
0740034	0	12	22	34	0	14
0740035	2	10	31	43	2	18
0740074	0	2	0	2	0	2
0740121	0	0	1	1	0	0
0740122	0	2	3	5	0	2
0740163	0	0	1	1	0	0
0740170	0	1	0	1	0	1
0740278	0	0	1	1	0	0
0740474	0	5	6	11	0	6
0740583	0	0	4	4	0	0
0740731	0	0	1	1	0	0
0740753	0	2	7	9	0	2
0740813	0	0	2	2	0	0
0750000	0	22	22	44	0	31
0760000	0	6	6	12	0	7
BASE ROUTE						
	FATAL	INJURY	PROPERTY DAMAGE ONLY	TOTAL	PERSONS KILLED	PERSONS INJURED
TOTAL	6	113	251	370	7	159

*Data provided by SC DOT July 17th, 2006

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WEATHER AT THE TIME OF THE CRASH ON SC 46*
(from Jasper County Line to S-31 just inside Bluffton Town Limits)
2001-2005
Beaufort County

weather	TYPE			TOTAL	PERSONS KILLED	PERSONS INJURED
	FATAL	INJURY	PROPERTY DAMAGE ONLY			
CLEAR	5	88	200	293	5	127
RAIN	0	16	31	47	0	21
CLOUDY	1	7	19	27	2	9
FOG, SMOG	0	2	1	3	0	2
TOTAL	6	113	251	370	7	159

MONTH OF CRASHES ON SC 46*
(from Jasper County Line to S-31 just inside Bluffton Town Limits)
2001-2005
Beaufort County

Month	TYPE			TOTAL	PERSONS KILLED	PERSONS INJURED
	FATAL	INJURY	PROPERTY DAMAGE ONLY			
JANUARY	0	12	17	29	0	14
FEBRUARY	1	4	14	19	1	7
MARCH	0	6	18	24	0	9
APRIL	0	11	21	32	0	18
MAY	2	4	25	31	3	9
JUNE	1	8	19	28	1	12
JULY	0	11	17	28	0	16
AUGUST	1	11	22	34	1	14
SEPTEMBER	0	9	25	34	0	9
OCTOBER	0	13	31	44	0	16
NOVEMBER	0	17	22	39	0	21
DECEMBER	1	7	20	28	1	14
TOTAL	6	113	251	370	7	159

*Data provided by SC DOT July 17th, 2006