



Transportation 9

One of the first visible impacts of growth in and around Bluffton is the increase in traffic. Traffic volumes on some roads doubled or tripled from 2000 to 2006. This increase is related to new residents, visitors and commuters. Widenings and intersection improvements to meet the needs of projected volumes are well beyond the anticipated funding available, and in some cases would significantly alter the desired character of the major corridors. Therefore, the transportation system must be carefully managed in coordination with land use changes to accommodate needs, ensure safety and meet Bluffton's overall vision.

Recommendations in this chapter go beyond simple road improvements and include management tools (access management, technology, connectivity, pathways, and mixed uses) to reduce the number and length of vehicle trips, and maximize the efficiency of the current system. This chapter will assess those elements including roadways, sidewalks and pathways, parking, and regional public transportation.

Vision

We will plan an efficient, adequate and safe transportation network for all users, including motorists, cyclists and pedestrians.

9.1 Jurisdiction over Roads

Effective management of the transportation system is complicated by the array of groups with some level of responsibility for road improvements and maintenance. Most roads in Bluffton, with the exception of Calhoun Street, are under jurisdiction of the State of South Carolina DOT (SCDOT), Beaufort County or private development associations as follows. A more detailed discussion and a full list of roads by jurisdiction can be found in Appendix A.

State Highways: There are a number of State highways within Bluffton. Map 9.1 Roadway Maintenance Responsibility shows State roads within the Old Town, an area which previously presented a dilemma when determining road maintenance responsibility.

Beaufort County Roads: The County acknowledges maintenance for 28 road segments.

Town Streets: The Town of Bluffton acknowledges that it is responsible for the maintenance of Calhoun Street. The Town claimed Calhoun Street during the lighting and sidewalk improvement projects which took place in 2002.

Private Roads: Many of the new Planned Unit Developments in Bluffton have privately built and maintained roads. While these roads can be publicly accessed, maintenance is not the responsibility of the State, County or Town.

There are unclassified roads in Bluffton referred to as orphan and ghost roads. Orphan roads exist, but remain unclaimed by the State, Beaufort County and Bluffton. Ghost roads may have existed at one time, but can no longer be recognized.

Orphan Streets: Orphan streets are existing unclassified streets that are in use by motorists, cyclists and pedestrians, but have not been claimed by SCDOT, Beaufort County or the Town. Bluffton is to decide what is to be done, from seeking county acceptance of the road or accepting it as a Town street.

Ghost Streets: Ghost streets are shown on various maps and surveys of the Old Town, but no longer appear on the ground as public ways. These streets are not in use.

While the State, County and Town maintain most roads in Bluffton’s transportation network, action must be taken on unclassified roads, or “Orphan” or “Ghost” roads. Bluffton must formally adopt or abandon unclassified roads. Adopting several roads in the Old Town could benefit Bluffton and could be improved to implement the recommendations presented in Bluffton’s Old Town Master Plan and Form Based Code. A full inventory should be carried out and should include the following information:

- Street name
- Segment
- Length
- Right-of-way width
- Pavement width
- Surface
- Condition
- Photographs
- Notes and recommendations

Once this survey is completed; recommendations should be brought to Town Council for review and adoption.

Jurisdiction over Roads		
Need: Understanding of Old Town road responsibility and future maintenance.		
Goal: Study unclassified road segments and take action to adopt or abandon.		
Implementation Steps	Responsible Parties	Time Frame
1. Develop and inventory and set of recommendations for unclassified roads in Old Town. Formally adopt or abandon unclassified roads.	Town Council, Planning Commission, Planning, Engineering	Short

9.2 Road Classification

Southern Beaufort County includes 63 miles of principal arterials, minor arterials, major collectors and minor collectors. Both the state and county classify roads based on the national function classification system. These classifications categorize roads based on the primary intended use and function of the road, the types of travel accommodated, and physical factors such as length, travel speeds, and number of lanes and are illustrated on Map 9.2 Roadway Functional Classifications. For Bluffton, roadways are further distinguished by their corridor character (see Land Use Chapter). Together, functional classification and corridor character describe road “typologies.” Roads in Bluffton and the surrounding area are classified into the following categories (a full list of roads by classification can be found in Appendix A):

Principal Arterials: Move vehicles over relatively long distances, such as across town or between towns. Principal Arterials typically have the highest traffic volumes and speed limits, and more lanes than other roads. Since the emphasis is on through traffic, these roads typically have more signal green time at signalized intersections than side streets, and access points should be spaced far apart to limit disruption on traffic flow.

Minor Arterials: Interconnect and augment the principal arterial system. Roads in this classification typically accommodate shorter trips than associated with Principal Arterials, and thus have lower traffic volumes, lower speed limits and fewer lanes. Compared to Principal Arterials, these offer a balance between through traffic and access to adjacent land uses.

Major Collectors: Connect arterial roads and local roads. This type of road serves locally oriented traffic, such as circulation between residential neighborhoods and commercial areas.

Minor Collectors: Connect local roads to major collectors and arterials.

Local Roads: All the other roads, public and private, in Bluffton, such as residential streets within neighborhoods.

Three major routes that make up the Bluffton transportation network are US 278, SC 170 and SC 46 (Jasper County line to SC 170). These routes are principal arterials that move vehicles to and from area municipalities such as Beaufort, Hardeeville, Hilton Head Island and Savannah. While the principal arterials help to move traffic in high volumes, SC 46 (SC 170 to US 278) and Bluffton Parkway are minor arterials that allow increased accessibility to adjacent land uses. Buckwalter Parkway, Burnt Church, Simmonsville, Buck Island and Bruin Roads are major collectors that connect arterials and local roads and provide access and traffic circulation between neighborhoods and commercial areas. Old Miller Road Gibbet Roads are minor collectors that connect local roads to collectors and arterials

9.3 Existing and Projected Traffic Volumes

Traffic Volumes

Traffic volumes, the number of vehicles traveling along a road or through an intersection, are the major influence on traffic operations and the level of congestion. Traffic volumes are counted on typical days to determine the average over 24 hours (Average Annual Daily Traffic or AADT) and the peak morning and evening hours. Recent traffic counts (AADT) in Bluffton are presented in Figure 9.1.

Road Name	Location	AADT				% Change 2000- 2006
		2000	2004	2005	2006	
Buck Island Road (S-29)	S-474 to US 278	1050	2300	3100	5500	423.81%
Simmonsville Road (S-474)	US 278 to S-29	2,700	3,200	4,200	10,100	274.07%
Gibbet Road (S-34)	SC 170 to SC 46	1,050	2,200	2,400	2,500	138.10%
Buck Island Road (S-29)	SC 46 to S-474	5,300	7,300	8,100	9,200	73.58%
Fording Island Road (US 278)	SC 170 to SC 46	30,900	34,800	40,900	47,800	54.69%
May River Road (SC 46)	S-29 to Rd-13 (Old Town)	8,900	12,300	13,300	13,600	52.81%
Burnt Church Road (S-163)	S-13 to S-120	3,700	3,900	4,100	5,100	37.84%
Bluffton Road (SC 46)	Rd-13 to US 278	7,900	10,600	10,800	10,000	26.58%
May River Road (SC 46)	SC 170 to S-29	7,900	8,500	9,300	9,600	21.52%
Okatie Highway (SC 170)	SC 46 to SC US 278	8,100	8,800	9,400	9,700	19.75%
May River Road (SC 46)	Jasper County Line to SC 170	12,200	12,000	13,400	13,800	13.11%

Source: Beaufort County

Like volumes, roadway capacities are determined for both a daily and peak hour basis. Roadway capacity is based primarily on the number of lanes and speed limits, with adjustments up or down in consideration of other factors like geometric design and the number of driveways or traffic signals along the road that disrupt through movements. Computer models are used to compare existing or expected traffic volumes to the capacity to determine the level of delay or congestion

for both 24 hour periods and peak hours. A 24 hour comparison provides a good initial indicator of congestion suitable for long range planning. Once potential capacity issues are identified, more detailed data based on peak hours and specific movements at intersections (right, left, through) is used to determine the level of service and extent of improvement that may be needed.

US 278 had the highest traffic volume, almost 48,000 vehicles daily in 2006, an increase of about 55% since 2000. This is a significant amount of traffic which equals the approximate amount of traffic on Interstate 95 in the year 2000. Buck Island and Simmonsville Roads also both had significant increases in traffic within the past six years. Segments of Buck Island Road increased between 74% and 424% between 2000 and 2006. Similarly, Simmonsville increased by 274%. Another road with significant recent increases has been Gibbet Road (partially within the Town's limits), that serves as a shortcut between SC 170 and SC 46, where traffic more than doubled in the last six years. Traffic increases along SC 46 have been less dramatic, but generally continues to increase. Trips in the Old Town have increased significantly, from just under 9,000 vehicles per day in 2000 to 13,600 in 2006, almost a 50% increase. Higher traffic is an important factor to consider when planning for Old Town.

Level of Service

Comparison of existing and projected traffic volumes to the capacity of the roads and intersections is an indicator of existing and future deficiencies. The nationally accepted measurement of this volume to capacity ratio is level of service (LOS). Six LOS letters designate each level of quality of vehicular flow, from A to F, with LOS "A" representing the least delay and LOS "F" the longest delay. The Southern Beaufort County Regional Plan Participating Local Governments decided as a matter of policy that the goal through the region should be that conditions on the Regional Road Network should not fall below LOS "D." As a general policy, Bluffton has adopted a minimum LOS D system-wide. However, when specific road improvements are considered, impacts on the environment, land uses, corridor character, and harmony with pedestrians/bicyclists should also be considered. In some cases, a LOS below D may be tolerable for certain turning movements or in particular areas within Bluffton (such as in Old Town and for SC 46 from SC 170 to Old Town).

A segment of US 278, from SC 46 to the Hilton Head bridges, was considered failing (below LOS D) until it was recently widened to six lanes. It is now considered an acceptable LOS "D." As of 2007, the county indicated no roads in Bluffton had a deficient level of service (LOS E or F). LOS is illustrated on the Map 9.3 Roadway Level of Service, however it is not updated to reflect the recently widened section of US 278 and its effects on the entire system.

With increasing traffic volumes (as seen in figure 9.1), the LOS of area roads will begin to reach failing levels in the near future. New roads, as well as widening and improvements to existing roads, will be needed in order to handle the traffic of approved developments, increasing population and increases in vehicles traveling on Principal Arterials through Bluffton.

Future Conditions Map

The Town of Bluffton and Beaufort County Engineering and Planning representatives continue to collaborate to gather traffic data and update the future road conditions information. This information helps evaluate conditions at buildout of all the development to determine the amount of predicted capacity deficiencies once all the programmed road improvements are constructed. The list of planned and programmed construction projects at the time this plan was prepared is included in Appendix A.

Existing and Proposed Traffic Volumes		
Need: Understanding of future road conditions resulting from development and road improvements.		
Goal: Develop a future roadway conditions map.		
Implementation Steps	Responsible Parties	Time Frame
1. Coordinate with Beaufort County to develop a future roadway conditions study and map that considers new development and future roadway improvements and develop a traffic count and crash monitoring program to identify potential projects.	Planning, Engineering, Beaufort County Planning, Beaufort County Engineering	Medium

9.4 Recent and Planned Road Improvements

The Roads Impact Fee Update Support Study for the South Beaufort County Service Area (September, 2006) lists road improvements needed to address expected future demand from 2006 to 2025. The improvements, shown in Map 9.4 Needed Roadway Capital Improvements, include: capacity and safety improvements to US 278, a US 278 frontage road and connections between parcels along US 278 as part of access management implementation, and capacity improvements along certain arterials and new collector roads.

In addition to these major improvements, there will likely be many smaller scale improvements to be determined based on actual traffic conditions and accident patterns (such as intersection reconstruction, new traffic signals, or roundabouts). These planned major capital road improvements are expected to meet the future traffic demands consistent with maintenance of a LOS D or better, based on predicted traffic volumes. These improvements need to be periodically evaluated as actual traffic counts are taken. Overtime, the timing of development, funding availability and other factors may change the needs and priorities. Therefore, it is recommended that Bluffton, the county and the state continue to share information and monitor needs. As road projects are funded, the county or state should involve Bluffton in the design development process to help ensure improvements are consistent with the intended character of a particular corridor.

The construction of Bluffton Parkway is the most recent major roadway improvement in Town. This will add another major east-west route to provide an alternate to SC 46 and US 278. While the Bluffton Parkway has been designed generally parallel to US 278 and SC 46, the alignment is not continuous; there is an offset that requires motorists to travel along the North/South Buckwalter Parkway within the central Buckwalter Tract, therefore lengthening the travel time and mileage between SC 170 and Bluffton Road. This Plan recommends a realignment to provide a more direct parkway.

In addition to the major capital improvement projects, future road construction and improvement projects need to promote and enhance physical connectivity within and between neighborhoods.

Intersection Improvements

As traffic continues to increase in Bluffton, delay at intersections will become more frequent. In some cases, improvements will be needed along a corridor, but in other cases, improvements just at key intersections may be sufficient. The most common improvements are installation of a traffic signal, possibly in conjunction with additional through or turning lanes, or a modern-type roundabout (not a traffic circle). Both intersection types are used in Bluffton and the Southern Beaufort County area. Determination of the best alternative depends on the physical conditions at the intersection (natural features, proximity of buildings, available right-of-way, etc.) and the nature of the traffic flow. A general comparison of the two options is shown in Figure 9.2 below.

Intersection Improvement Alternatives – General Comparison		
Factor	Roundabout	Traffic Signals
Operations	Can have higher capacity and fewer delays	Capacity depends upon approach volumes and timing
Safety	Typically fewer and less severe accidents	Accidents can go up with a signal but the type and severity vary greatly
Pedestrians	Roundabouts perceived as less pedestrian friendly	Pedestrians may have separate signals to ease crossing
Proximity	Roundabouts can be placed in close proximity to each other	Traffic signals spaced closer than 1 mile or ½ mile apart can cause congestion
Design	Operations highly sensitive to design, expensive to change	Can more easily be adapted to changes in traffic flow by changing signal timing
Ease of use	Relatively easy to maneuver but may be confusing for visitors	Visitors are accustomed to traffic signals
Right-of-way Required	More at intersection, perhaps less along road	Typically fits within existing r.o.w.
Cost	Typically more expensive to construct, less to maintain	Typically less expensive to construct unless additional lanes are needed (r.o.w.) but higher maintenance costs
Environmental Impacts	Typically less impact unless construction impacts a key natural feature, because less vehicle delay reduces pollution	Typically more delay for the average vehicle equates to more air pollution. Poor intersection operations may cause need for disruptive road widening
Community Character	More opportunity to create an image through the design	Typical signals are not attractive but this can be improved with mast arm signals, signs and well designed pedestrian crossings

Safety

In addition to capacity issues, safety is a prime consideration both in the identification of road improvement projects and their design.

Specific safety related issues to monitor and address include:

Road Maintenance: Maintenance of pavement conditions, striping and signs.

Truck Traffic: The speed and volume of truck traffic can create conflicts with others using the roads, especially pedestrians. Through truck traffic should be diverted away from residential areas and the Old Town. In addition, commercial and other sites should be designed to ensure truck maneuvering does not conflict with internal circulation or access.

Speed and Traffic Calming: Travel speed inappropriate for the setting can cause safety concerns, for example speeds over 25 miles per hour along a residential street. Where speed limits are a concern, posted speed limits can be monitored. In some cases traffic calming measures should be considered, especially for areas heavily populated by children, or frequented by visitors, pedestrians and cyclists. Traffic calming could include measures such as traffic circles, curb bump outs, speed humps or tables (not speed bumps), and well defined pedestrian crossings. Many of the more recent developments have integrated traffic calming measures as part of the road design, a trend that should continue.

Lighting: Lighting at major intersections should be studied to ensure safety and minimize potential for accidents. Similarly, appropriate lighting levels along certain streets or at major development access points may improve safety and convenience for motorists.

Street Connectivity: With any new roadway development, roads should be required to tie into the existing road network. This maintains a system of interconnected streets, which maintains the efficiency of the overall road network. The use of cul-de-sacs and other dead end streets should be discouraged except in areas where natural features, such as wetlands, or existing adjacent development patterns precludes through streets. With a connected street system, motorists are provided with multiple routes, which help to reduce driving distances and diffuse traffic. Providing road connections between adjacent

subdivisions allows for the movement between neighborhoods without the need to access major roads. It also provides alternative means for residents within the subdivisions to access the major road network at locations that are most efficient for traveling to their destination, shortening trips and thereby minimizing traffic impacts to the major road network. Connected streets also provide continuous routes that enhance non-motorized transportation. With connected streets, special consideration needs to be given to network design to discourage use by through traffic that does not have an origin or destination within the local neighborhood.

Access Management: One of the many benefits of access management is the reduction in the potential for crashes (see more detailed discussion later in this chapter). Refer to page 9-20 for a more detailed discussion of access management standards.

Signage/Wayfinding: Way-finding quite literally refers to ‘finding your way around’ and can apply to finding your way to Town Hall, parks, or schools. A comprehensive wayfinding system is recommended in order to improve accessibility for residents and visitors alike. Typically, wayfinding is provided by a consistent signage system that points travelers in the direction of their destination. It is important that all these signs maintain a similar appearance that can become a “brand” for Bluffton where the user quickly learns what to look for to find the next piece of information. Bluffton recently began an initiative to develop a Wayfinding design for Old Town, which will likely include recommendations that can be applied community-wide.

Recent and Planned Road Improvements		
Need: Interconnectivity for transportation system efficiency.		
Goal: Enhance and promote connectivity.		
Implementation Steps	Responsible Parties	Time Frame
1. Design, construct and maintain roadways and rights-of-way to promote and enhance physical connectivity within and between neighborhoods.	Planning, Engineering	On-going
2. Establish minimum land use design principles to promote better road and non-motorized connections within and between land uses and master planned communities.	Planning, Beaufort County	Medium
3. Develop connectivity standards that will be adopted and applied by all the participating Local Governments in their development codes.	Planning, Beaufort County	Medium

Recent and Planned Road Improvements		
Need: Safe and efficient routes of travel.		
Goal: Plan and build safe roadways for all users.		
Implementation Steps	Responsible Parties	Time Frame
1. Continue to review and prioritize the Town's inventory of streets for paving and maintenance.	Planning, Engineering, Beaufort County Planning, Beaufort County Engineering	On-going
2. Limit impacts of commercial trucking in Old Town by establishing and signing a truck route alternative to SC 46 and prohibiting truck intense uses in Old Town or make them a condition use with locational standards.	Planning, Engineering, Beaufort County Planning, Beaufort County Engineering	On-going
3. Set up a system to respond to neighborhood concerns with vehicular speeds that could include evaluation of traffic calming measures where conditions may be improved.	Planning, Engineering, Beaufort County Planning, Beaufort County Engineering	Short
4. Ensure intersections and major access points are well lit.	Planning, Engineering, Beaufort County Planning, Beaufort County Engineering	On-going

9.5 Planning

Since the highways and principal arterials run through more than one community and are under state or county jurisdiction, a collaborative approach to management is essential. This section describes the array of Corridor and Regional Planning efforts underway or desired for coordination with Beaufort County and other agencies for effective transportation planning.

Corridor Planning

Effective corridor planning within Bluffton and southern Beaufort County will result in coordinated review, administration and enforcement of development to

See “Corridor Planning” in the Land Use Chapter for further discussion.

maintain the desired community image and function along the following regional travel corridors: US 278, SC 170, SC 46, Buckwalter Parkway, Bluffton Parkway, and Burnt Church Road. Coordination will help preserve or achieve the desired views and images of the Lowcountry created along the SC 46 and SC 170 scenic corridors. Corridor planning strategies include overlay districts, corridor management plans and context sensitive design, as explained below.

Highway Corridor Overlay District: The main method of corridor planning and enforcement is the Town’s Highway Corridor Overlay District. The Highway Corridor Overlay District (HCOD) was created to; provide for the safe and efficient use of highways; minimize congestion and conflict points; enhance the quality of development; protect and enhance the area’s unique aesthetic character and natural environment; reduce unnecessary visual distractions; and encourage architecture, signage, landscape and lighting harmonious with the natural and man-made assets of the Low Country. The Highway Corridor Overlay District generally applies to a depth of 500 feet along US 278, SC 170, Buckwalter Parkway, Bluffton Parkway, SC 46 and Burnt Church Roads (for specifics, see the Zoning Ordinance).

Continued development pressures increase in southern Beaufort County require coordinated review, administration and enforcement by the communities, county and state. While the Town Planning Commission administers the HCOD, Beaufort County administers corridors (in

unincorporated areas) through the Corridor Review Board (CRB). Effective corridor planning which crosses municipal boundaries may be achieved by establishing more formal joint boards for consistent review, consistent application of access management, monitoring of traffic conditions and needs, and enforcement.

Corridor Management Plans: Bluffton has a separate Corridor Management Plan for SC 46, that is considered a supporting document to this Plan. The plan presents an inventory of six intrinsic qualities of SC 46: natural, scenic, historic, cultural, recreational and archaeological with recommendations on techniques to preserve the character for future generations.

The first implementation step will be an application for National Scenic Byway designation. While roadways similar to SC 46 can be designated as National Scenic Byways, federal regulations have been created to declassify routes that lose the original character which qualified the route. Therefore, implementation of the recommendations in the Comprehensive Plan and the Corridor Management Plan are important to preserve National Scenic Byway Status, if the designation is approved.

Similar corridor plans may be conducted for other major corridors where the Town and County identify specific populations and community features to preserve. Areas of focus could be SC 170, Simmonsville and Buck Island Roads, or other corridors as appropriate.

Context Sensitive Design: Context Sensitive Design (CSD) is among the most significant concepts to emerge in highway project planning, design, and construction in recent years. CSD recognizes that the way a highway or road is integrated within the community can have far-reaching impacts (positive and negative) beyond its primary traffic or transportation function. The term CSD refers as much to the design approach or process as it does to an actual outcome.

Context sensitive design asks questions first about the need and purpose of the transportation project, and then equally addresses safety, mobility, and the preservation of scenic, aesthetic, historic, environmental, and other community values. Context sensitive design involves a collaborative, interdisciplinary approach in which citizens at large, and those

most impacted by the project are involved in the design process, not just reacting at the end of the process.

CSD marches a key goal in Bluffton, that roads serve all users, not just cars but also pedestrians and bicyclists. In addition, ensure road design complements the distinct desired natural and built physical character of the various key corridors. Examples to a CSD approach to SC 46, SC 171, US 278 and other corridors are described in the future land use chapter.

CSD is another transportation element that requires coordination between the Federal Highways Administration, DOT, Beaufort County and the Town of Bluffton. Communication and partnership between these agencies can ensure that preservation and enhancement each corridors cultural and natural resources is emphasized through the design process for road improvements. This may include elements such as mast arm signals with highly visible cross street signs, wayfinding, medians, roundabouts, elaborate pedestrian crossings, formal or more natural landscaping along the road edge to match the desired character, and distinct architectural elements along bridges and roads to alert motorists that they are in Bluffton.

Regional Planning

Since transportation systems cross through many communities, regional transportation planning is important to properly plan and program transportation improvements. Regional communication should cross political boundaries and ensure each community and agency plan is in concert with each other. Bluffton's The Town's involvement in the regional planning processes is of high importance because the shared regional transportation network is not confined to the limits of the Town or southern Beaufort County. For the Town of Bluffton, regional planning can be examined by assessing Beaufort and Jasper Counties, or a larger area such as the Lowcountry Region. Recent efforts in regional planning are described below:

The Lowcountry Regional Transportation Plan: The Lowcountry Regional Transportation Plan is one such planning process in which the Town should actively be involved. The Lowcountry Region includes Beaufort, Jasper, Hampton and Colleton Counties. The regional plan influences the projects and priorities identified in the State's Long Range Transportation Improvement Plan which is the basis for

allocation of State funds. Bluffton should be active in regional and county transportation planning projects and processes to be adequately represented as well as informed of transportation planning efforts.

Southern Beaufort County Transportation Planning Team:

Within the Southern Beaufort County Regional Plan, the existing informal cooperation that already exists as part of the “Southern Beaufort County Highway Improvement Team” has formalized with the Southern Beaufort County Planning Team (SBCPT) as part of a regional planning effort. This staff-level working group was formed at the suggestion of the local mayors and council members, and it is beginning to make solid progress in addressing regional transportation issues. The SBCPT will consist of staff representatives from all the Participating Local Governments. Staff representatives from Jasper County and Hardeeville will also be invited to be a part of the SBCPT. The responsibilities of the SBCTPT under this regional plan include:

- Preparing a regional transportation plan for the Regional Road Network, based on the adopted LOS.
- Assisting in the development of a joint funding strategy to address the funding gap for transportation capital improvements on the Regional Road Network.
- Coordinating planning for the multi-use trail systems between the Participating Local Governments to maximize reductions in VMTs.
- Developing an access management plan and standards for adoption by the Participating Local Governments.
- Developing a plan for the County’s existing ITS system to enable its extension onto appropriate roads on the Regional Road Network.
- Serving as the key entity in the region responsible for: data collection related to transportation (including the collection of traffic counts); and
- Preparing transportation demand management principles and standards for adoption by the Participating Local Governments.

Beaufort County Transportation Advisory Group: The Beaufort County Transportation Advisory Group (BTAG), a policy advisory group, adopted the Roadways Capital Improvement Plan for Southern Beaufort County. The plan lists 33 priority road projects totaling \$180 million and includes existing and potential funding sources. The plan was developed by the Southern Beaufort County Highway Improvement

Team composed of planning and engineering staff from Beaufort and Jasper Counties, SCDOT and the municipalities of Bluffton, Hilton Head and Hardeeville. The team has been meeting monthly for the past year to identify priorities and funding opportunities.

Access Management Standards: Management of the spacing, placement and design of access points, major roads improves the efficiency of those roads, effectively increasing the capacity and decreasing the potential for accidents. Well designed access management can also benefit businesses along the roadway, especially if the land use and transportation planning are coordinated.

Currently, access management standards applied by the different local governments and road agencies are not consistent. A uniform set of access management standards in southern Beaufort County would be beneficial. Bluffton has several opportunities to utilize access management. Access management can be designed into new roads, as part of road improvement projects and as part of the development review process. Bluffton has developed Access Management Plans for Buckwalter Parkway North and Bluffton Parkway to identify appropriate locations and signalization of intersections. The Buckwalter Parkway Plan is complete and ready for adoption, while the Bluffton Parkway Plan is in final draft form and will soon be finalized for adoption. Elements of access management should be applied as part of road design, road improvements and during the development review process. Opportunities include decisions on the following:

- Number of access points (generally the fewer the better).
- Driveway spacing (generally the wider spacing the better).
- Driveway placement near intersections, especially signalized ones (generally the farther away the better).
- Driveway placement in proximity to roundabout approaches.
- Driveway offsets or placement in relationship to driveways across the street (generally line up or space far apart to avoid left turn lock ups).
- Driveway design (width, deceleration tapers or lanes).
- Shared driveways, frontage roads and backside access roads so multiple developments can be served with fewer access points.
- General road connectivity to avoid turns onto roads that can be better accommodated internally.
- Efficient spacing of traffic signals and their timing/coordination.

- Medians to restrict or channel left turns (left turns cause the most disruption in traffic flow and a high percentage of access related traffic accidents).

Intelligent Transportation Systems (ITS): ITS involves the use of technology to improve the efficiency of the transportation system. ITS includes techniques to allow traffic signals to adjust to actual conditions (rather than fixed phasing), link operations of traffic signals along a corridor, provide information to motorists to help avoid congestion, and alert emergency service providers about incidents along a road that may delay traffic.

Beaufort County's Intelligent Transportation System includes three components: video surveillance, response vehicles, and radio advisory broadcasts. The County operates 26 surveillance cameras along SC 170 and US 278, with images updated every five seconds. Based on the images, the County's Emergency Management Department can send vehicles to remove wrecked or stranded vehicles, place electronic message boards to alert drivers to detour options, and broadcast over designated AM radio stations. The system helps officials respond quickly to unforeseen events, and thereby minimize delays for motorists (and, accordingly, helps maintain traffic-carrying capacity). In addition, when accidents and congestion occur, the county may notify SCDOT to send incident management vehicles to remove wrecked or stranded vehicles, dispatch law enforcement officials, update electronic message boards to notify drivers of detours, or broadcast traffic information over designated AM radio stations. Images from the cameras are also placed on the county's web site allowing motorists the ability to assess traffic situations before leaving home.

The ability of safety officials to respond quickly to congestion issues is important to minimize delays on major roads such as US 278. For this reason, the County's ITS system should be expanded to targeted road on the Regional Road Network throughout the region.

Traffic Impact Analysis Ordinances: Traffic Impact Analysis Ordinances require a developer to have a qualified firm prepare an evaluation of the impact of the proposed development on the road network and identify the improvements necessary to retain acceptable traffic operations (LOS D). Typical improvements recommended and potentially funded through a traffic impact analysis include new roads,

road widenings or intersection improvements, turning and deceleration lanes, traffic signals, and shared access with adjoining developments.

Computer Simulation Models: Various computer simulation models are used to evaluate traffic operations. These include simple models for intersection operations, corridors-wide models to evaluate traffic flow and models for the entire road network that are used to identify potential long range capacity deficiencies and the performance of alternatives. Both by Beaufort County and Hilton Head Island use a network model (TRANPLAN) to estimate future traffic volumes on the road network based on current volumes and expected development. Bluffton planning staff provides information on approved new developments so the model can be updated to reflect changes. This enables the Town and County identify where improvements may be needed to meet projected demand and plan for road projects in a timely manner. The TRANPLAN model can also help determine the transportation impacts and ultimately the decision of whether to approve large projects, such as a PUD or large-scale zoning amendments.

Planning		
Need: Protection of the environment during roadway planning and construction.		
Goal: Protect natural resources along transportation corridors.		
Implementation Steps	Responsible Parties	Time Frame
1. Incorporate Context Sensitive Design into roadways. Build, maintain and upgrade roadways as needed, to promote the efficient movement of traffic within and through Town, without undermining the unique historic and natural character and pedestrian safety in high growth areas. Partner with Beaufort County, SCDOT and Federal Highways.	Planning, Engineering, Beaufort County Engineering, SCDOT	On-going
2. Utilize the SC 46 Corridor Management Plan as a guide for development and transportation improvements along SC 46.	Planning, Engineering, Beaufort County Engineering, Beaufort County Planning, SCDOT	On-going
3. Develop a tree replanting plan and schedule to replace tree canopy and natural buffers along transportation corridors.	Planning, Engineering, Beaufort County.	Short

Planning		
Need: Regional coordination and partnership during transportation planning.		
Goal: Develop a coordinated approach to transportation planning in southern Beaufort County.		
Implementation Steps	Responsible Parties	Time Frame
1. Establish coordinated review, administration and enforcement of development to maintain strong community aesthetics and function along the following regional travel corridors: US 278, Buckwalter Parkway, Bluffton Parkway, Burnt Church and Bluffton Roads.	Town of Bluffton, Beaufort County	Short
2. Establish coordinated review, administration and enforcement of development to maintain the views and images of the Lowcountry created along the following regional scenic corridors: SC 46 (May River Highway) and SC 170 (Okatie Highway).	Town of Bluffton, Beaufort County	Short
3. Participate in the Regional Transportation Planning Process to ensure Bluffton's transportation improvements are on the State Infrastructure Improvement Program list.	Planning, LCOG	On-going
4. Pursue a coordinated regional transportation process that: <ul style="list-style-type: none"> a. coordinates transportation planning with land use planning and forecasts b. regularly collects and monitors data c. prepares network-wide corridor and intersection models to help evaluate short and long term priorities such as pathways, r.o.w. preservation/ acquisition, and promote funding opportunities d. Maintain a joint regional transportation improvement map to create increased awareness of future road projects throughout the area 	Planning, Engineering, Beaufort County Planning, Beaufort County Engineering, Town of Hilton Head Island, Jasper County, The City of Hardeeville, Town of Ridgeland, City of Beaufort.	Short
5. Formalize regional transportation planning through the development and implementation of joint review of major development proposals prior to their approvals to ensure that proposals do not have an adverse impact on the regional road network.	Town of Bluffton, Beaufort County	Short
6. Create partnerships to carry out studies on areas where specific populations and features should be preserved. Areas of focus could be SC 170, Simmonsville and Buck Island Roads, or other corridors, as appropriate.	Planning, Beaufort County Planning	Short
7. Carry out Access Management Plans for Buckwalter Parkway North and Bluffton Parkway to identify appropriate locations and signalization of intersections.	Planning, Engineering, Beaufort County	Short
8. Coordinate with Jasper County officials during the planning of 278A and its connection to the Jasper County Segment.	Planning, Engineering, Jasper County	Short

9.6 Bicycle and Pedestrian Facilities

When planning future sidewalk projects, consideration must be given to provide safe pedestrian access to parks and schools, where children walk, and along streets that connect major activity centers or where pedestrian comfort is impacted by heavy vehicular traffic. Sidewalks and pathways accommodate safe and convenient travel for bicyclists and pedestrians, as well as for providing the residents of Bluffton with alternative means of transportation and opportunities for exercise and recreation. Improving the sidewalks and pedestrian connections within Bluffton will help draw regional trails and bike paths through the Town, which can in turn increase commerce and tourism. Bluffton should continue its efforts to create a walkable and bicycle-friendly community by using American Association of State Highway and Transportation Officials (AAASHTO) sidewalk, pathway and bike lane guidelines as a guide for facility improvement. Coordination with Beaufort County as well as other agencies and advocacy groups can help in this process. Map 9.5 Conceptual Pathways depicts existing, proposed and future pathways.

Sidewalks

Sidewalks and pedestrian amenities are especially important in the Old Town because the walkable character is threatened by increasing traffic. The Old Town can be navigated by foot or bicycle, so it is essential to build upon its pedestrian scale. Several streets are without sidewalks, but are safe for foot travel because of low traffic counts and speed. Several roads within the Old Town have an increasing amount of traffic and increasing traffic speed, which results in unsafe conditions for cyclists and pedestrians. Deficiencies in the Old Town bicycle and pedestrian networks need to be identified, and proposed recommendations to fill network voids need to be presented. This can be accomplished by a sidewalk inventory and plan.

Sidewalks are incorporated in new developments in Bluffton. While Beaufort County does not have specific requirements for pedestrian facilities, it is a requirement for new developments. Several new developments can serve as models for pedestrian facilities and connectivity. Future sidewalks should increase connectivity between neighborhoods and to key destinations to enhance walkability throughout Bluffton.

Sidewalks are proposed in the May River Road/Bruin Road Streetscape Project that will result in a significant upgrade to the Town's overall pedestrian system. The conceptual plan proposes wide sidewalks along the entire length of the project, from Stock Farm to Burnt Church Road. Close to the Old Town's four-way stop, 15 foot wide sidewalks with trees, waste receptacles, benches and lighting are proposed. The portions of May River Road and Bruin Road which are considered less of the urban center have proposed eight foot wide sidewalks with a 7 foot wide green planting strip separating the sidewalk from the on-street parking.

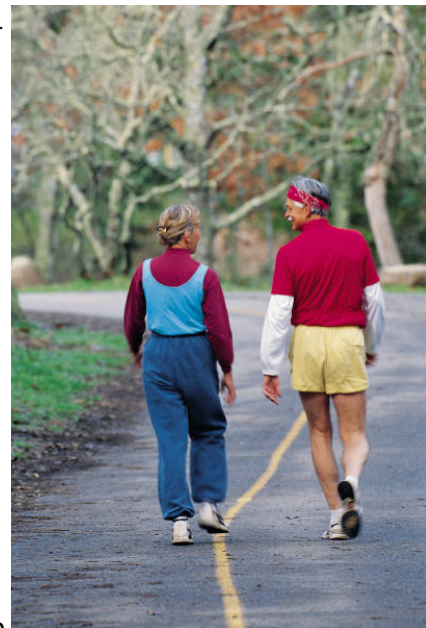
Pedestrian Connections and Amenities

In addition to pedestrian facilities along the roads, convenient links are needed between the roadside sidewalk or pathway and the development. Sidewalks and well marked pedestrian crossings between the road and a building entrance, for example, are much more pedestrian friendly and safe than walking through a busy parking lot. Street trees, benches, plazas and places to sit make the environment much more welcoming for pedestrians.

Pathways

Pathways are non-motorized facilities that are usually along, but separated from the road. Pathways can be multi-use facilities, or be striped or use a physical separation between different non-motorized uses. Pathways differ from trails, because they perform primarily a transportation function rather than a recreation function.

In the Old Town, an existing pathway in the Old Town is the Tabby Roads pathway connecting M.C. Riley Elementary School to the Tabby Roads development. Generally, sidewalks serve the Old Town instead of separated multi-use pathways for pedestrian and bicycle travel. Sidewalks serve the area because of the Old Town's density and mixed-use character, where separated pathways would not be appropriate. However, the existing pathway from the elementary school to Tabby Roads should be extended northward along the power line easement to Bluffton Village.



Outside of the Old Town, pathways currently in existence within the Town of Bluffton are on the Buckwalter Parkway, McCracken Circle, as well as the Bluffton Parkway. The constructed and planned pathways range from 8 to 12 feet wide. The New River Trail is another Town project that includes a 3.2 mile trail which will link a 40 acre park and several residential developments.



Bicycle Lanes

Bicycle lanes are designated bicycle facilities that provide a separated travel lane for bicycles. Bicycle lanes are attractive to avid bicyclists who want the ability to travel without interruption from pedestrians and are comfortable with the proximity to vehicular travel lanes. The combination of bicycle lanes and off-road multi-use pathways are preferred to appeal to those who are not comfortable using bicycle lanes, such as younger children.

Pathway Plan

Proposed pathways are presented in the Town of Bluffton Pathways Plan. This plan should be updated to further plan pathways to create linkages that result in a safe and efficient network for pedestrian and bicycle use. Partnerships with utility companies should be developed to share right-of-ways for pathway development. Map 9.5 shows a conceptual pathway network that follows major roadways and utility right-of-ways.

An updated pathways plan should be developed which provides more detail in terms of the design and location of pathways that addresses key issues such as:

- Identification of the desired users of the pathways (joggers, bicyclists, horseback riders, etc.).
- Identification of roadways needing pathways.
- Separation width between pathways and right of ways.
- Boardwalks to protect key natural features.
- Pathways materials: asphalt, concrete or a combination of both.
- Pathway width.
- Types of amenities are appropriate along pathways.

Bicycle and Pedestrian Facilities		
Need: Adequate and safe bicycle and pedestrian facilities.		
Goal: Develop a bicycle and pedestrian transportation system that effectively serves the needs of cyclists and pedestrians, encourages non-motorized travel and provides a continuous network of attractive sidewalks, multi-use trails and bike lanes throughout the Town that also connect to regional systems.		
Implementation Steps	Responsible Parties	Time Frame
1. Update the Town of Bluffton Pathways Plan. Develop an interconnected network of bicycle and pedestrian facilities throughout southern Beaufort County that includes interconnectivity between multi-use pathways, bicycle lanes and sidewalks. Develop a map of existing and planned bicycle and pedestrian facilities by type to guide future construction and to publicize routes.	Planning, Engineering	Short
2. Continue to review and prioritize the Town's sidewalk and pathway system for improvements and additions, with attention to usage of utility right-of-ways. Partner with utility companies to develop bicycle and pedestrian facilities along right-of-ways.	Planning, Engineering, BJWSA, SCE&G, Palmetto Electric	Short
3. Require all new developments accommodate pedestrians within in their site. Plan bicycle and pedestrian interconnectivity to adjacent roadways and future and existing nearby developments.	Planning, Engineering	On-going
4. Apply for grants for bicycle and pedestrian facilities improvement and expansion.	Planning	Medium
5. Ensure that bicycle and pedestrian facilities are designed to connect schools, community services, and destinations.	Planning, Engineering	Short
6. Work with Beaufort County and other agencies to develop links with area bicycle and walking trails.	Planning, Beaufort County	On-going
7. Pursue development of bicycle and pedestrian facilities on publicly owned (unopened) rights-of-way, street ends, utility corridors and other lands available for public use. Dedicate them permanently for non-motorized use where appropriate. Man-made obstructions in existing public rights-of-way shall be required to be removed.	Planning, Engineering	Medium

Bicycle and Pedestrian Facilities		
Need: Adequate and safe bicycle and pedestrian facilities.		
Goal: Ensure the safety of all users of bicycle and pedestrian facilities.		
Implementation Steps	Responsible Parties	Time Frame
1. Improve the safety of all travelers by using such techniques as wide pathways, raising crosswalks, wider striping, providing pedestrian islands, providing disability access, modifying lighting, installing hand or bicycle activated sensors, traffic calming measures and other appropriate methods.	Planning, Engineering	On-going
2. Coordinate with public and private groups, including the Bluffton Police department and area advocacy groups, to promote the education and awareness of personal safety while using bicycle and pedestrian facilities.	Planning, Engineering, Bluffton Police Department, advocacy groups	On-going
3. Investigate safe routes to schools and funding. Provide well designed and constructed pedestrian and bicycle access within a reasonable travel distance around schools.	Planning	Short
4. Use AASHTO as a guide for constructing bicycle and pedestrian facilities of sufficient width to accommodate expected pedestrian use, including safe roadway crossings and, wherever feasible and appropriate, access provisions will accommodate people with the widest range of mobility. Use AASHTO as a guide to effectively and safely accommodate commuters, recreational users and children.	Planning, Engineering	On-going
5. Assess and accommodate pedestrian crossing options at major intersections, especially US 278 and Simmonsville Road.	Planning, Engineering, Beaufort County	Short
Goal: Promote economic development through an extensive bicycle and pedestrian network.		
Implementation Steps	Responsible Parties	Time Frame
1. Assess the incorporation of the East Coast Greenway through the Town of Bluffton.	Planning, Engineering, East Coast Greenway, advocacy groups.	Short
2. Plan for a bicycle-friendly Town to attract eco-tourists and others to visit the Town's businesses and strengthen the local economy.	Planning	On-going

9.7 Parking

Adequate on-street and off-street parking is required for residents, visitors and workers to carry out their daily activities and business. Parking needs and regulations need to be monitored to determine if changes are needed to the supply, location, and design of Bluffton's regulations. Several topics should be considered.

- **Environmental Issues:** Parking lots should have an increased amount of pervious surface in order to minimize stormwater runoff and non-point source pollution. Landscaped islands within off-street parking lots should be required.
- **Aesthetics:** Parking lots should be developed behind buildings for aesthetic and design. As structures in the Old Town are encouraged to be set closer to the street, lots should be placed toward the rear of the lots.
- **Partnerships:** The Town should develop partnerships and coordinate with area churches and institutions to share parking facilities when services or events are not in session. Partnerships would decrease costs of constructing new lots, as well as decrease environmental impacts from new lots.
- **Land Acquisition:** While some new lots will need to be developed, the Town should assess lands to acquire for this use. A number of smaller lots may be more aesthetically pleasing, environmentally sustainable and more appropriate in Bluffton's Old Town.

May River/Bruin Road Streetscape Project

The May River/Bruin Streetscape Project increases the Town's parking capacity significantly. Parallel parking is proposed on both sides of May River and Bruin Roads. Proposed eight foot parking spaces will increase the convenience of parking for residents, consumers and tourists. Sufficient parking requirements should be a priority in future planning projects.

Parking		
Need: Adequate parking for residents and visitors to carry out daily activities and business.		
Goal: Provide adequate on-street and off-street parking which will meet the needs of residents and visitors while protecting the aesthetic quality of the Town.		
Implementation Steps	Responsible Parties	Time Frame
1. Encourage the location of parking lots at the rear of buildings, where possible.	Planning	On-going
2. Encourage landscaping islands in the design of parking lots.	Planning	On-going
3. Acquire land for downtown parking.	Town Council, Administration, Planning, Engineering	Short
4. Ensure parking areas have pervious surfaces.	Planning, Engineering	On-going
5. Encourage a number of small downtown parking areas instead of one large lot.	Planning, Engineering	Short
6. Develop partnerships with religious institutions for use of parking areas when services and events are not in session.	Administration, Planning, Engineering	On-going

9.8 Public Transportation

Lowcountry Regional Transportation Authority (LRTA)

The Lowcountry Regional Transportation Authority (LRTA) provides public transportation in Beaufort County, as well as Jasper, Colleton, Hampton and Allendale Counties. LRTA's primary area of focus is to transport residents in surrounding rural areas to and from jobs in Beaufort County. Low-density residential development, decentralized commercial uses, scattered employment centers, and lack of consistent pedestrian connections create obstacles for efficient public transportation. However, efforts are being examined to expand transit service and make Bluffton more "transit friendly." Like other transportation actions, support and coordination between Bluffton and other communities and agencies is important for success.

Currently an effort is underway to establish a fixed-route bus service along US 278 from the Coastal Carolina Medical Center in Hardeeville to Coligny Plaza on Hilton Head Island. The program is currently unfunded, but the proposed bus service is planned to run on regularly scheduled times. Initiating and expanding a fixed-route service along US 278 can help alleviate peak hour traffic congestion and provide residents with an alternative form of transportation. While the route will increase options for public transit, it may be necessary to expand the planned route to loop through the Old Town and Bluffton Parkway to increase potential ridership.

In addition to system improvements, Bluffton can help ensure its development is designed to support transit by incorporating elements such as:

- Nodes of development.
- Park and ride lots.
- Pathways to connect development to transit stops.
- Site design that connects buildings and neighborhoods to roadside pathways.

Ferry Service

Given the region’s many navigable waterways and Bluffton’s position on the May River, private or public/private ferry service could add a unique service and potentially reduce travel demands on US 278, SC 170, and other roads. Effective ferry terminals would require sizable waterfront property for parking and multi-modal facilities to transport people from the terminal to key destinations such as tourist attractions, beaches, key shopping and entertainment areas, as well as places of employment. Funding and commute times are also obstacles that need to be overcome to make ferry service viable. Given the transportation constraints under which the region is operating, however, this option may be worth additional discussions with other communities in the region.

Public Transportation		
Need: Low-cost, safe and reliable public transportation.		
Goal: Coordinate with LRTA and LCOG for expansion of the public transportation system.		
Implementation Steps	Responsible Parties	Time Frame
1. Coordinate with LRTA to expand transit options for residents, particularly with respect to meeting the needs of the elderly, handicapped and low income persons.	Administration, Planning, LRTA, LCOG	Short
2. Provide support, input and partnership during future US 278 bus service planning, with attention to potential loops and spurs to serve the residents along the Bluffton Parkway and Old Town.	Administration, Planning, LRTA, LCOG	Short
3. Examine and assess the possibility of ferry service or water taxis.	Planning, Engineering, Administration	Medium
4. Provide support to school district bus route planners in order to minimize left-turns on routes.	Planning, Engineering, Administration, School Board	On-going